Balflex®



HOSE CATALOG

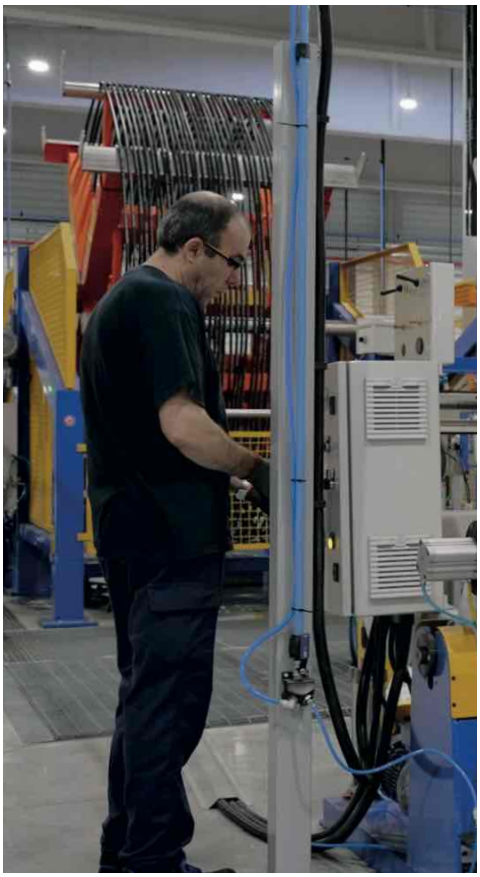
European Technology

Established since 1963, **Balflex®** *is a European international group of companies dedicated to the design, production, assembly and distribution of all types of high-tech products for conduction of fluids, measuring of pressure and power transmission at very high quality level.*

6 decades of know-how and expertise in this field, makes **Balflex®** *the first choice for the mining, agriculture, off-shore and construction industries.*

Today the **Balflex®** *Group covers worldwide users through our own company´s production facilities, branches and net of certified distributors.*

Balflex® *valorizes the inside meaning of the words we use:* ***Excellence*** *the quality of being outstanding;* ***Innovation*** *the action or process of innovating;* ***Partnership*** *cooperation relationship between two or more people, having in mind a common goal;* ***Tradition*** *way of thinking or acting, inherited from previous generations.*





















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Quality

Quality is very important for us. We have fully equipped, modern laboratories and equipment, employing the industries most experienced personnel.

Balflex® has earned various certifications for our Management Systems and Products. This reliable and consistent approach has allowed us to achieve our ISO 9001:2015 certification. At **Balflex**® quality and service always comes first. We are dedicated to continue the development of new products with a strong emphasis on quality.

Member of:

Certified by:



DNV

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of
BALFLEX PORTUGAL - Componentes Hidráulicos e Industriais, S.A.
Rua Bouça dos Estilhadouros 226/254, Zona Industrial Alto de Vilar, 4445-044, Alfena, Porto, Portugal

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Manufacture, assembly and distribution of hydraulic and industrial hoses, connectors and v-belts.

Place and date:
Barcelona, 21 November 2022

For the issuing office:
DNV - Business Assurance
Gran Via de les Corts Catalanes 130-136, Pl. 9, 08038, Barcelona, Spain

Jose del Rio Salgado
Management Representative



DNV

MANAGEMENT SYSTEM CERTIFICATE

This is to certify that the management system of
BALFLEX BRASIL LTDA
Rua Padre Cesari Lelli, 1014, 83420-000, Quatro Barras, PR, Brazil

has been found to conform to the Quality Management System standard:
ISO 9001:2015

This certificate is valid for the following scope:
Manufacture and distribution of hydraulic and industrial PVC hoses, with braided and spiral reinforcement. Distribution of hydraulic and industrial rubber hoses.

Place and date:
São Paulo, 11 April 2022

For the issuing office:
DNV - Business Assurance
Av. Adolfo Pinguelo de Souza Aranha, 100 - Bl. A/B/C/D Jardim Fonte do Morumbi - Cravinho. 06726-170. São Paulo. SP. Brazil

Mauricio Venturin
Management Representative

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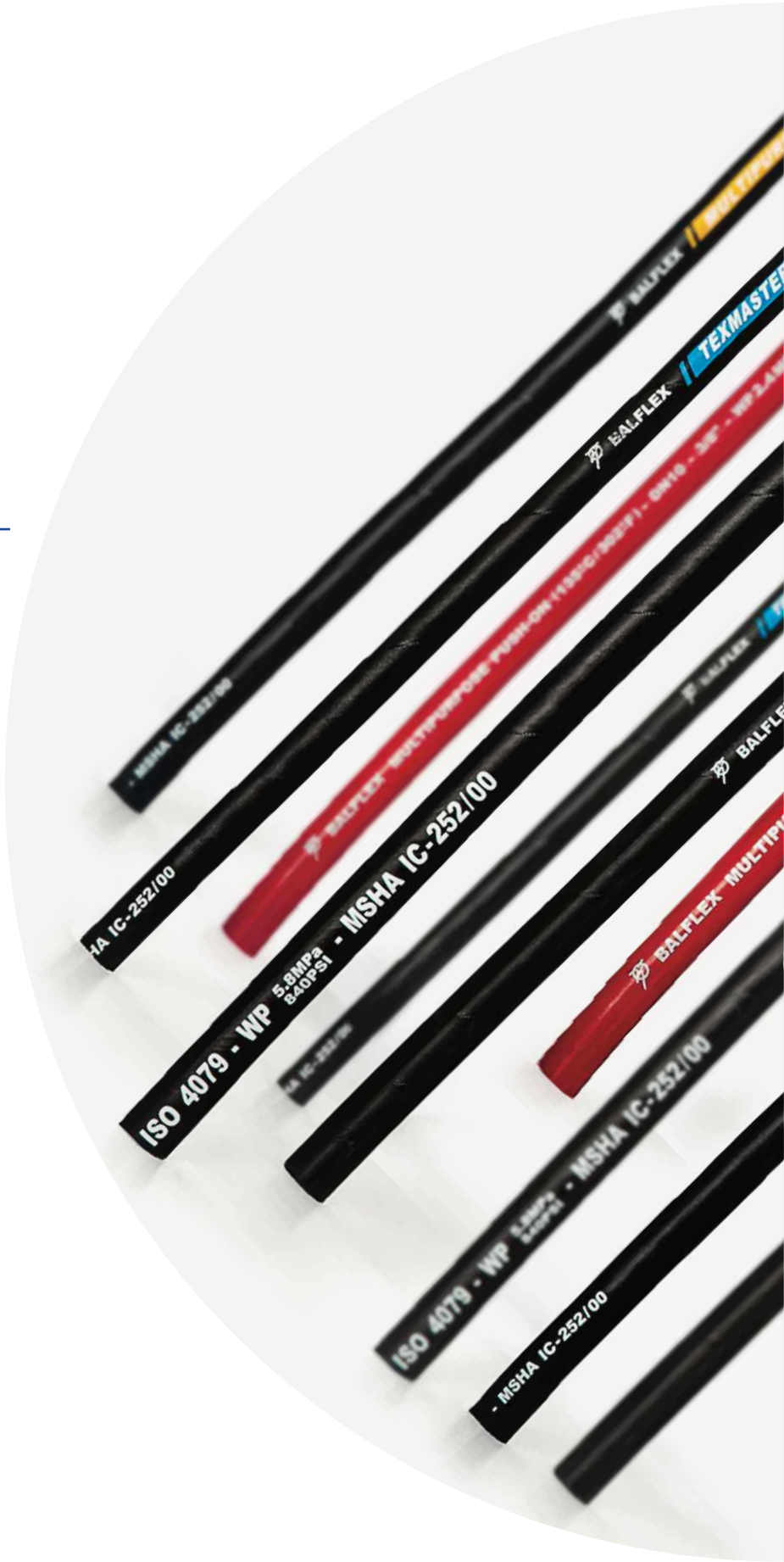
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Textile Braid Hydraulic Hoses





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Balflex®

Textile Braid Hydraulic Hoses

Balflex® hydraulic textile braided hoses are produced to Balflex® specifications and according to ISO 4079, SAE J517 and EN 854 standards. They cover a wide variety of low and medium pressure applications, for petroleum and water base hydraulic fluids.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.

General Guidelines

Balflex® hydraulic textile braid hoses are designed with a safety factor of 4:1 relating minimum burst pressure and recommended working pressure. Working pressure [W P] and nominal diameter [D N] are always branded on the hose.

Hydraulic hoses are designed for petroleum base hydraulic fluids applications with a temperature range of –40°C (-40°F) to +100°C (+212°F). Special rubber compounds and other lining materials allow to exceed these limits. Hydraulic hoses may also be used for water base hydraulic fluids if the working temperature does not exceed +70°C (+158°F). For conveyance of Hot Air working temperature should be reduced to a maximum of +60°C (+140°F).

Selection, assembly and installation of hydraulic textile braid hoses should follow **Balflex®** recommendations and SAE J1273 and DIN 20066 standards. **Hydraulic hose assemblies should always be thoroughly inspected and hydraulically tested before installation**. All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

Installations that do not comply with an adequate layout geometry of the hose assembly may significantly reduce the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose and/or end fitting specifications may shorten the hose assembly life drastically.

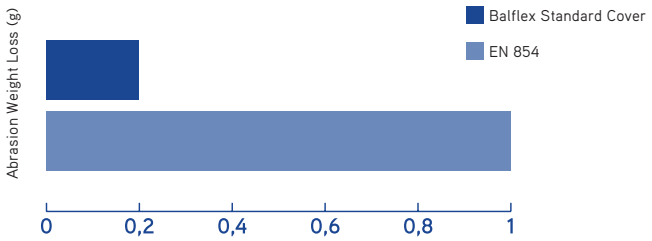
The failure of a hydraulic textile braided hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of fittings and their parts, the whipping of unrestrained hose, spillage or combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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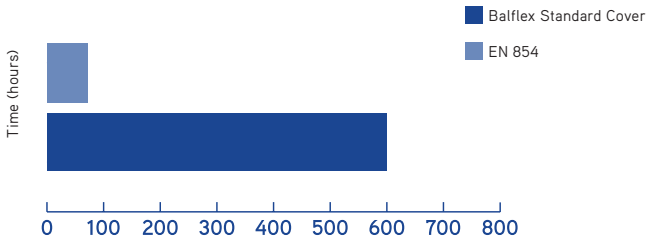
Balflex Hoses are manufactured with a tough outer cover that increases the resistance to environmental and external application damages and present the following main features:

- Excellent abrasion resistant when tested according to modified ISO 6945 method, and according to ISO 20444 new abrasion test methods.
- High level of resistance to cracking due to Ozone exposure, resulting in 4 times superior resistance than the relevant EN ISO 7326 requirement;

ABRASION RESISTANCE



OZONE RESISTANCE



- US MSHA Approved Cover (IC 252/00)

Table 1: Rated working pressure at 20°C (+68°F) of Balflex® Hydraulic Textile Braid Hoses (MPa / PSI)

Balflex	Standard	3/16" -3 DN5	1/4" -4 DN6	5/16" -5 DN8	3/8" -6 DN10	1/2" -8 DN12	5/8" -10 DN16	3/4" -12 DN19	1" -16 DN25	1.1/4" -20 DN31	1.1/2" -24 DN38	2" -32 DN51	2.1/2" -40 DN63	3" -48 DN76	3.1/2" -56 DN90	4" -64 DN100
TEXMASTER 1	DIN EN 854 1TE / ISO 4079 / SAE J517 R6	3.4	2.8	2.8	2.8	2.8	2.4	2.1	1.7							
		500	410	410	410	410	350	310	250							
TEXMASTER 2	DIN EN 854 2TE / ISO 4079	8.0	7.5	6.8	6.3	5.8	5.5	4.5	4.0							
		1200	1100	990	920	850	730	660	580							
TEXMASTER 3	DIN EN 854 1TE / ISO 4079 / SAE J517 R3	16.0	14.5	13.0	11.0											
		2400	2200	1900	1600											
TEXMASTER 3	SAE J517 R3 / ISO 4079					7.0	6.1	5.2	3.9	2.6						
						1100	950	800	600	400						
TEXMASTER 3T	DIN EN 854 1TE / ISO 4079					9.3	8.0	7.0	5.5	4.5	4.0	3.3				
						1400	1200	1100	800	660	580	480				
MULTIPURPOSE		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0				
		300	300	300	300	300	300	300	300	300	300	300				
PUSH-ON			2.4	2.4	2.4	2.1	2.1	2.1	1.4							
			350	350	350	310	310	310	210							
TORNARE	SAE J517 R4							2.1	1.7	1.4	1.05	0.7	0.4	0.4	0.3	0.25
								310	250	210	160	110	60	60	50	40

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Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20°C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20°C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20°C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20°C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1MPa = 10,0bar

Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F°	C° x 1,8 + 32	F° (Fahrenheit)
C°	(F° - 32): 1,8	C° (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4mm
Example: : +100°C = +212°F

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Fluid Compatibility and Resistance Chart for Balflex Textile Braid Hoses

● Recommended ● Recommended with Restrictions ● Not Recommended

Acetic Acid		Ethyl Glycol	●	Oil of Turpentine	●
Acetic Acid (30%)	●	Ethyleneoxide	●	Oleic Acid	●
Acetone	●	Fluorine	●	Oxalic Acid	●
Acetylene	●	Formaldehyde	●	Perchloroethylene	●
Ammonia, Gas (Hot)	●	Formaldehyde 40%	●	Phenol	●
Ammonia, Liquid	●	Fuel Oil	●	Phosphoric Acid (10%)	●
Ammoniumchloride		Gaseous Hydrogen	●	Phosphoric Acid (70%)	●
Amyl Acetate	●	Gasoline	●	Phosphate Ester Base Oil	●
Aniline	●	Glycerin / Glycerol	●	Saturated Steam	●
Animal Oils	●	Glycol to 66°C	●	Sea Water	●
Benzol / Benzene	●	Hexane	●	Silicone Oils	●
Butane	●	Hydraulic Oil	●	Soap Solutions	●
Butyl Acetate	●	Hydrochloric Acid 37%	●	Soda	●
Butyl Alcohol / Butanol	●	Hydroger Peroxide (Dil.)	●	Sodium Chloride Solutions	●
Calcium Chloride Solutions		Hydroger Peroxide (Conc.)	●	Sodium Hydroxide 20%	●
Carbon Dioxide	●	Isocyanates		Sodium Hypochloryde 10%	●
Carbon Disulfide	●	Isopropil Alcohol	●	Sulphur	●
Carbonates	●	Kerosene	●	Sulphur Dioxide	●
Caustic Soda	●	Liquid Oxygen	●	Sulphuric Acid up to 50%	●
Chlorinated Solvents	●	LPG	●	Sulphuric Acid above 50%	●
Chlorine	●	Lubricating Oils	●	Toluene	●
Chloroform	●	Mercury	●	Trichloroethylene	●
Citric and Solutions	●	Methyl Alcohol / Methanol	●	Vegetable Greases	●
Compressed Air	●	Methyl Chloride (Cold)	●	Water	●
Cyclohexane	●	Methyl Ethyl Khetone	●	Xylene	●
Crude Petroleum Oil	●	Mineral Oils	●		
Dioctyl Phthalate		Naphtha	●		
Diesel Fuel	●	Naphthalene	●		
Ethers	●	Natural Gas	●		
Ethyl Acetate	●	Nitric Acid (Dil.)	●		
Ethyl Alcohol	●	Nitric Acid (Conc.)	●		
Ethyl Chloride	●	Nitrobenzen	●		

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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TEXMASTER 1



DIN EN 854 1TE / SAE 100R6 – 10.1216.

Medium pressure, single textile braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1TE-R6-03	10.1216.03	DN5	3/16"	-3	4,8	10,8	**3.4**	500	**13.8**	2000	51	0,13
1TE-R6-04	10.1216.04	DN6	1/4"	-4	6,3	12,4	**2.8**	410	**11.0**	1640	64	0,14
1TE-R6-05	10.1216.05	DN8	5/16"	-5	8,0	13,9	**2.8**	410	**11.0**	1640	76	0,18
1TE-R6-06	10.1216.06	DN10	3/8"	-6	9,5	15,4	**2.8**	410	**11.0**	1640	76	0,19
1TE-R6-08	10.1216.08	DN12	1/2"	-8	12,7	18,6	**2.8**	410	**11.0**	1640	102	0,27
1TE-R6-10	10.1216.10	DN16	5/8"	-10	16,0	22,9	**2.4**	350	**9.7**	1400	127	0,31
1TE-R6-12	10.1216.12	DN19	3/4"	-12	19,0	26,6	**2.1**	310	**8.3**	1240	152	0,43
1TE-R6-14	10.1216.14	DN22	7/8'	-14	22,0	31,3	**2.2**	320	**8.8**	1280	200	0,59
1TE-R6-16	10.1216.16	DN25	1"	-16	25,4	33,0	**1.7**	250	**6.8**	1000	203	0,59

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high resistance synthetic fiber braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 4:1
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F); Max. temperature recommended for air: +50°C (+122°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
APPLICATION: petroleum base hydraulic fluids

COVER: U.S. MSHA APPROVED
NOTES: Sizes -14 (DN 22) 7/8" and -16 (DN 25) 1" not included in the standards

BALFLEX TEXMASTER 1 SAE 100R6 / EXCEEDS DIN EN 854 - 1TE - DN5 - 3/16" - ISO 4079 - WP 3.4 MPa 500 PSI - Flame Resistant - MSHA IC-252/00

TEXMASTER 2



DIN EN 854 2TE – 10.1217.

Medium pressure, single textile braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	MPa	MPa	MPa	MIN BEND RAD mm	KG kg/m
2TE-03	10.1217.03	DN5	3/16"	-3	4,8	11,8	**8.0**	1200	**32.0**	4800	25	0,12
2TE-04	10.1217.04	DN6	1/4"	-4	6,3	13,4	**7.5**	1100	**30.0**	4400	40	0,14
2TE-05	10.1217.05	DN8	5/16"	-5	8,0	14,9	**6.8**	990	**27.2**	3960	50	0,18
2TE-06	10.1217.06	DN10	3/8"	-6	9,5	16,5	**6.3**	920	**25.2**	3680	60	0,19
2TE-08	10.1217.08	DN12	1/2"	-8	12,7	19,7	**5.8**	850	**23.2**	3400	70	0,27
2TE-10	10.1217.10	DN16	5/8"	-10	16,0	23,9	**5.0**	730	**20.0**	2920	90	0,31
2TE-12	10.1217.12	DN19	3/4"	-12	19,0	27,0	**4.5**	660	**18.0**	2640	110	0,43
2TE-16	10.1217.16	DN25	1"	-16	25,4	34,4	**4.0**	580	**16.0**	2320	150	0,59

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high resistance synthetic fiber braid

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4: 1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F); Max. temperature recommended for air: +50°C (+122°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
COVER: U.S. MSHA APPROVED

BALFLEX TEXMASTER 2 DIN EN 854 - 2TE - DN5 - 3/16" - ISO 4079 - WP 8 MPa 1200 PSI - Flame Resistant - MSHA IC-252/00

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TEXMASTER 3



SAE 100R3 – 10.1220

Medium pressure, double textile braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R3-3TE-03	10.1220.03	DN5	3/16"	-3	4,8	12,8	**16.0**	2400	**64.0**	9600	40	0,13
R3-3TE-04	10.1220.04	DN6	1/4"	-4	6,3	14,4	**14.5**	2200	**58.0**	8800	45	0,18
R3-3TE-05	10.1220.05	DN8	5/16"	-5	8,0	16,9	**13.0**	1900	**52.0**	7600	55	0,25
R3-3TE-06	10.1220.06	DN10	3/8"	-6	9,5	18,5	**11.0**	1600	**44.0**	6400	70	0,28
R3-08	10.1220.08	DN12	1/2"	-8	12,7	23,8	**7.0**	1100	**28.0**	4400	125	0,44
R3-10	10.1220.10	DN16	5/8"	-10	16,0	27,0	**6.1**	950	**24.4**	3800	140	0,49
R3-12	10.1220.12	DN19	3/4"	-12	19,0	31,8	**5.2**	800	**20.8**	3200	150	0,70
R3-16	10.1220.16	DN25	1"	-16	25,4	38,1	**3.9**	600	**15.6**	2400	205	0,79
R3-20	10.1220.20	DN31	1.1/4"	-20	32,0	44,5	**2.6**	400	**10.4**	1600	250	0,88

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic fiber braids

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F); Max. temperature recommended for air: +50°C (+122°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
COVER: U.S. MSHA APPROVED

BALFLEX TEXMASTER 3 SAE 100R3 - DN12 - 1/2" - ISO 4079 - WP 7 MPa 1100 PSI - Flame Resistant - MSHA IC-252/00

TEXMASTER 3T



DIN EN 854 3TE – 10.1220 / 10.123T

Medium pressure, double textile braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R3-3TE-03	10.1220.03	DN5	3/16"	-3	4,8	12,8	**16.0**	2400	**64.0**	9600	40	0,13
R3-3TE-04	10.1220.04	DN6	1/4"	-4	6,3	14,4	**14.5**	2200	**58.0**	8800	45	0,18
R3-3TE-05	10.1220.05	DN8	5/16"	-5	8,0	16,9	**13.0**	1900	**52.0**	7600	55	0,25
R3-3TE-06	10.1220.06	DN10	3/8"	-6	9,5	18,5	**11.0**	1600	**44.0**	6400	70	0,28
3TE-08	10.123T.08	DN12	1/2"	-8	12,7	21,7	**9.3**	1400	**37.2**	5600	85	0,44
3TE-10	10.123T.10	DN16	5/8"	-10	16,0	25,9	**8.0**	1200	**32.0**	4800	105	0,49
3TE-12	10.123T.12	DN19	3/4"	-12	19,0	29,0	**7.0**	1100	**28.0**	4400	130	0,70
3TE-16	10.123T.16	DN25	1"	-16	25,4	35,9	**5.5**	800	**22.0**	3200	150	0,79
3TE-20	10.123T.20	DN31	1.1/4"	-20	32,0	42,3	**4.5**	660	**18.0**	2640	190	0,88
3TE-24	10.123T.24	DN38	1.1/2"	-24	38,0	49,6	**4.0**	580	**16.0**	2320	240	1,17
3TE-32	10.123T.32	DN51	2"	-32	50,8	62,3	**3.3**	480	**13.2**	1920	300	1,63

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic fiber braids

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F); Max. temperature recommended for air: +50°C (+122°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
COVER: U.S. MSHA APPROVED

BALFLEX TEXMASTER 3T DIN EN 854 - 3TE - DN12 - 1/2" - ISO 4079 - WP 9.3 MPa 1400 PSI - Flame Resistant - MSHA IC-252/00

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Balflex®

MULTIPURPOSE



2.0MPa / 300PSI (100% rubber hose) – 10.1215.

Oil, Fuel and Gasoline

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
MULTI-03	10.1215.03	3/16"	-3	4,8	11,0	**2,0**	300	**6,0**	1200	50	0,10
MULTI-04	10.1215.04	1/4"	-4	6,3	12,8	**2,0**	300	**6,0**	1200	60	0,16
MULTI-05	10.1215.05	5/16"	-5	8,0	14,9	**2,0**	300	**6,0**	1200	80	0,24
MULTI-06	10.1215.06	3/8"	-6	9,5	16,7	**2,0**	300	**6,0**	1200	100	0,29
MULTI-08	10.1215.08	1/2"	-8	12,7	21,0	**2,0**	300	**6,0**	1200	125	0,40
MULTI-10	10.1215.10	5/8"	-10	16,0	24,2	**2,0**	300	**6,0**	1200	160	0,50
MULTI-12	10.1215.12	3/4"	-12	19,0	28,0	**2,0**	300	**6,0**	1200	190	0,66
MULTI-16	10.1215.16	1"	-16	25,4	35,0	**2,0**	300	**6,0**	1200	254	0,90
MULTI-20	10.1215.20	1.1/4"	-20	32,0	42,8	**2,0**	300	**6,0**	1200	320	1,20
MULTI-24	10.1215.24	1.1/2"	-24	38,0	49,8	**2,0**	300	**6,0**	1200	380	1,42
MULTI-32	10.1215.32	2"	-32	50,8	62,2	**2,0**	300	**6,0**	1200	510	1,89

INNER TUBE: seamless oil, fuel and gasoline resistant synthetic rubber
REINFORCEMENT: 1 high resistance synthetic fiber braid
SAFETY FACTOR: 3:1

OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber
APPLICATION: oil, fuel and gasoline

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F); Max. temperature recommended for air: +50°C (+122°F)

COVER: U.S. MSHA APPROVED
WARNING: this hose is not according to any particular standards,so should not be used in automotive applications

BALFLEX / MULTIPURPOSE OIL - FUEL - AIR - GASOLINE - DN5 - 3/16" - WP 2 MPa 300 PSI - Flame Resistant - MSHA IC-252/00

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PUSH-ON



MULTIPURPOSE - 10.PL15.- R/B

Low pressure, single textile braid, Multipurpose hose.

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
PUSH-04	10.PL15.04B (R)	1/4"	-4	6,3	12,5	**2,4**	350	**7,2**	1050	64	0,14
PUSH-05	10.PL15.05B (R)	5/16"	-5	8,0	14,3	**2,4**	350	**7,2**	1050	76	0,16
PUSH-06	10.PL15.06B (R)	3/8"	-6	9,5	15,7	**2,4**	350	**7,2**	1050	76	0,20
PUSH-08	10.PL15.08B (R)	1/2"	-8	12,7	19,6	**2,1**	310	**6,3**	930	102	0,24
PUSH-10	10.PL15.10B (R)	5/8"	-10	16,0	22,8	**2,1**	310	**6,3**	930	127	0,32
PUSH-12	10.PL15.12B (R)	3/4"	-12	19,0	26,0	**2,1**	310	**6,3**	930	152	0,38
PUSH-16	10.PL15.16B (R)	1"	-16	25,4	32,6	**1,4**	210	**4,2**	630	203	0,52

INNER TUBE: seamless oil resistant synthetic rubber resistant to high temperature
REINFORCEMENT: 1 high resistance synthetic fiber braid
SAFETY FACTOR: 3:1

OUTER TUBE: Blue or Red Smooth Cover, oil, weather and abrasion resistant synthetic rubber
APPLICATION: petroleum base hydraulic fluids, water based fluids; Injection Mould applications

TEMPERATURE RANGE: continuous service: +125°C (+257°F). Max. temperature recommended for water base hydraulic fluids: +85°C (+185°F). Max. temperature recommended for air: +70°C (+158°F)

COUPLINGS: Balflex® push-on fittings 22 serie
WARNING: This hose is a high temperature multipurpose oil / water hose but cannot be used with phosphate-ester based oils.

BALFLEX MULTIPURPOSE PUSH-ON (125ºC / 257ºF) - DN6 - 1/4" - WP 2.4 MPa / 350 PSI

BALFLEX MULTIPURPOSE PUSH-ON (125ºC / 257ºF) - DN6 - 1/4" - WP 2.4 MPa / 350 PSI

TORNARE 4



SAE 100R4 – 10.1219.

According to SAE J517 type SAE 100R4, suction & delivery hydraulic hose.

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R4-12	10.1219.12	3/4"	-12	19,0	30,0	**2.1**	310	**8.4**	1240	57,0	0,75
R4-16	10.1219.16	1"	-16	25,4	36,0	**1.7**	250	**6.8**	1000	75,0	0,93
R4-20	10.1219.20	1.1/4"	-20	31,8	43,0	**1.4**	210	**5.6**	840	96,0	1,25
R4-24	10.1219.24	1.1/2"	-24	38,1	49,0	**1.05**	160	**4.2**	640	114,0	1,54
R4-32	10.1219.32	2"	-32	50,8	62,0	**0.7**	110	**2.8**	440	152,0	2,00
R4-40	10.1219.40	2.1/2"	-40	63,5	76,0	**0.4**	60	**1.6**	240	189,0	2,50
R4-48	10.1219.48	3"	-48	76,2	89,0	**0.4**	60	**1.6**	240	228,0	3,20
R4-56	10.1219.56	3.1/2"	-56	88,9	104,0	**0.3**	50	**1.2**	200	270,0	4,03
R4-64	10.1219.64	4"	-64	101,6	116,0	**0.25**	40	**1.0**	160	306,0	5,04

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: textile braids and 3 high strength steel wire helix
SAFETY FACTOR: 4:1

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
APPLICATION: suction, delivery, return & discharge of petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F); Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F); Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® multicrimp fittings serie BW23
COVER: U.S. MSHA approved

BALFLEX TORNARE 4 SAE 100R4 - DN19 - 3/4" - WP 2.1 MPa 310 PSI - Flame Resistant - MSHA IC-252/00

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Steel Wire Braid Hydraulic Hoses





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Balflex®

Steel Wire Braid Hydraulic Hoses

Balflex® hydraulic steel wire braided hoses are produced to Balflex® specifications and according to ISO 1436, ISO 11237, SAE J517 and EN 853 to EN 857 standards. They cover a wide variety of medium and high pressure applications, for petroleum and water base hydraulic fluids.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.

General Guidelines

Balflex® hydraulic steel wire braided hoses are designed with a safety factor of 4:1 relating minimum burst pressure and recommended working pressure. Working pressure [W P] and nominal diameter [D N] are always branded on the hose.

Hydraulic hoses are designed for petroleum base hydraulic fluids applications with a temperature range of –40°C (-40°F) to +100°C (+212°F). Special rubber compounds and other lining materials allow to exceed these limits. Hydraulic hoses may also be used for water base hydraulic fluids if the working temperature does not exceed +70°C (+158°F). For conveyance of Hot Air working temperature should be reduced to a maximum of +60°C (+140°F).

Selection, assembly and installation of hydraulic steel wire braid hoses should follow **Balflex®** recommendations and SAE J1273 and DIN 20066 standards. **Hydraulic hose assemblies should always be thoroughly inspected and hydraulically tested before installation.** All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

Installations that do not comply with an adequate layout geometry of the hose assembly may significantly reduce the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose and / or end fitting specifications may shorten the hose assembly life drastically.

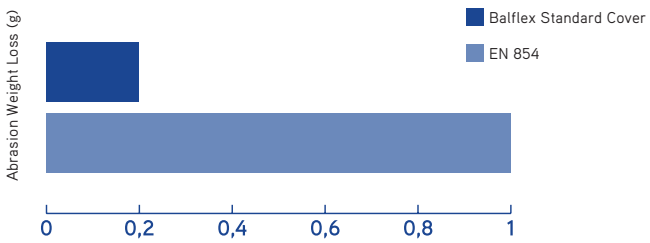
The failure of a hydraulic steel wire braided hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of fittings and their parts, the whipping of unrestrained hose, spillage or combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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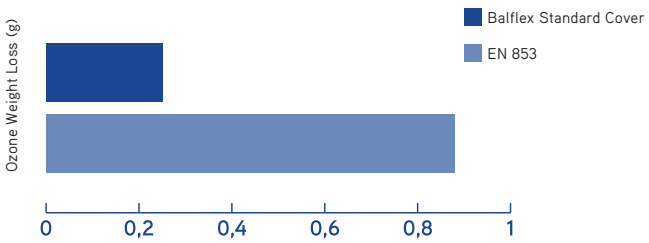
Balflex Hoses are manufactured with a tough outer cover that increases the resistance to environmental and external application damages and present the following main features:

- Excellent abrasion resistant when tested according to modified ISO 6945 method, and according to ISO 20444 new abrasion test methods.
- High level of resistance to cracking due to Ozone exposure, resulting in 4 times superior resistance than the relevant EN ISO 7326 requirement;

ABRASION RESISTANCE



OZONE RESISTANCE



- US MSHA Approved Cover (IC 252/00)

Table 1a: Rated working pressure at 20°C (+68°F) of Balflex® Hydraulic Steel Wire Braid Hoses (MPa / PSI)

Balflex	Standard	3/16" -3 DN5	1/4" -4 DN6	5/16" -5 DN8	3/8" -6 DN10	1/2" -8 DN12	5/8" -10 DN16	3/4" -12 DN19	1" -16 DN25	1.1/4" -20 DN31	1.1/2" -24 DN38	2" -32 DN51	2.1/2" -40 DN63	3" -48 DN76
FORZA UNO	DIN EN 853 1SN / ISO 1436 / SAE J517 R1AT	25.0	22.5	21.5	18.0	16.0	13.0	10.5	8.8	6.3	5.0	4.0	3.0	2.0
		3700	3300	3200	2700	2400	1900	1600	1300	920	730	580	440	290
FORZA DUE	DIN EN 853 2SN / ISO 1436 / SAE J517 R2AT	41.5	40.0	35.0	33.0	27.5	25.0	21.5	16.5	12.5	9.0	8.0	7.0	5.5
		6100	5800	5100	4800	4000	3700	3200	2400	1900	1400	1200	1100	800
BALPAC PREMIUM	DIN EN 857 2SC / ISO 11237 / SAE J517 R16		42.5	40.0	35.0	34.5	31.0	28.0	28.0					
			6200	5800	5100	5000	4500	4000	4000					
BALPAC 3000	DIN EN 857 1SC / ISO 11237 / SAE J517 R17		26.0	26.0	25.0	21.0								
			3800	3800	3625	3000								
BALPAC 3000	SAE J517 R17						21.0	21.0	21.0					
							3000	3000	3000					
BALPAC	DIN EN 857 1SC						17.5	13.5	11.0					
							2540	1960	1595					
2-MAX JACK			70.0		70.0	55.2								
			10000		10000	8100								
3-MAX					50.0	47.0	41.0	37.5	33.0					
					7300	6900	6100	5500	4800					

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Table 1b: Rated working pressure at 20˚C (+68˚F) of Balflex® Hydraulic Hoses (MPa / PSI)

Balflex	type	3/16" -4	1/4" -5	5/16" -6	13/32" -8	1/2" -10	5/8" -12	7/8" -16	1.1/8" -20	1.3/8" -24	1.13/16" -32	23/" -40	3" -48
BRAKEMASTER	SAE J517 R5 / SAE J1402	20.7	20.7	15.5	13.8	12.1	10.3	5.5	4.3	3.4	2.4	2.4	1.4
		3002	3002	2248	2001	1755	1464	798	624	493	348	348	203

Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20˚C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20˚C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20˚C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20˚C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1 MPa = 10,0 bar

Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F˚	C˚ x 1,8 + 32	F˚ (Fahrenheit)
C˚	(F˚ - 32): 1,8	C˚ (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4 mm
Example: : +100˚C = +212˚F

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Fluid Compatibility and Resistance Chart for Balflex Steel Wire Braid Hydraulic Hoses

● Recommended ● Recommended with Restrictions ● Not Recommended

Acetic Acid		Ethyl Glycol	●	Oil of Turpentine	●
Acetic Acid (30%)	●	Ethyleneoxide	●	Oleic Acid	●
Acetone	●	Fluorine	●	Oxalic Acid	●
Acetylene	●	Formaldehyde	●	Perchloroethylene	●
Ammonia, Gas (Hot)	●	Formaldehyde 40%	●	Phenol	●
Ammonia, Liquid	●	Fuel Oil	●	Phosphoric Acid (10%)	●
Ammoniumchloride		Gaseous Hydrogen	●	Phosphoric Acid (70%)	●
Amyl Acetate	●	Gasoline	●	Phosphate Ester Base Oil	●
Aniline	●	Glycerin / Glycerol	●	Saturated Steam	●
Animal Oils	●	Glycol to 66°C	●	Sea Water	●
Benzol / Benzene	●	Hexane	●	Silicone Oils	●
Butane	●	Hydraulic Oil	●	Soap Solutions	●
Butyl Acetate	●	Hydrochloric Acid 37%	●	Soda	●
Butyl Alcohol / Butanol	●	Hydroger Peroxide (Dil.)	●	Sodium Chloride Solutions	●
Calcium Chloride Solutions		Hydroger Peroxide (Conc.)	●	Sodium Hydroxide 20%	●
Carbon Dioxide	●	Isocyanates		Sodium Hypochloryde 10%	●
Carbon Disulfide	●	Isopropil Alcohol	●	Sulphur	●
Carbonates	●	Kerosene	●	Sulphur Dioxide	●
Caustic Soda	●	Liquid Oxygen	●	Sulphuric Acid up to 50%	●
Chlorinated Solvents	●	LPG	●	Sulphuric Acid above 50%	●
Chlorine	●	Lubricating Oils	●	Toluene	●
Chloroform	●	Mercury	●	Trichloroethylene	●
Citric and Solutions	●	Methyl Alcohol / Methanol	●	Vegetable Greases	●
Compressed Air	●	Methyl Chloride (Cold)	●	Water	●
Cyclohexane	●	Methyl Ethyl Khetone	●	Xylene	●
Crude Petroleum Oil	●	Mineral Oils	●		
Dioctyl Phthalate		Naphtha	●		
Diesel Fuel	●	Naphthalene	●		
Ethers	●	Natural Gas	●		
Ethyl Acetate	●	Nitric Acid (Dil.)	●		
Ethyl Alcohol	●	Nitric Acid (Conc.)	●		
Ethyl Chloride	●	Nitrobenzen	●		

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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Balflex®

FORZA UNO



DIN EN 853 1SN / SAE 100R1AT / ISO 1436 – 10.1002.

High pressure, single steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1SN-03	10.1002.03	DN5	3/16"	-3	4,8	11,4	**25.0**	3700	**100.0**	14800	89	0,23
1SN-04	10.1002.04	DN6	1/4"	-4	6,3	13,0	**22.5**	3300	**90.0**	13200	100	0,23
1SN-05	10.1002.05	DN8	5/16"	-5	8,0	14,7	**21.5**	3200	**85.0**	12800	114	0,23
1SN-06	10.1002.06	DN10	3/8"	-6	9,5	17,2	**18.0**	2700	**72.0**	10800	127	0,33
1SN-08	10.1002.08	DN12	1/2"	-8	12,7	20,5	**16.0**	2400	**64.0**	9600	178	0,42
1SN-10	10.1002.10	DN16	5/8"	-10	16,0	23,8	**13.0**	1900	**52.0**	7600	200	0,52
1SN-12	10.1002.12	DN19	3/4"	-12	19,0	27,8	**10.5**	1600	**42.0**	6400	240	0,65
1SN-16	10.1002.16	DN25	1"	-16	25,4	35,9	**8.8**	1300	**35.0**	5200	300	1,00
1SN-20	10.1002.20	DN31	1.1/4"	-20	32,0	44,0	**6.3**	920	**25.0**	3680	419	1,30
1SN-24	10.1002.24	DN38	1.1/2"	-24	38,0	50.8	**5.0**	730	**20.0**	2920	500	1,63
1SN-32	10.1002.32	DN51	2"	-32	50,8	64,3	**4.0**	580	**16.0**	2320	630	2,00
1SN-40	10.1002.40	DN63	2.1/2"	-40	63,5	75,0	**4.5**	650	**18.0**	2610	760	2,35
1SN-48	10.1002.48	DN76	3 "	-48	76,2	88,0	**3.5**	510	**14.0**	2030	900	2,55

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
Balflex® Multicrimp fittings serie BW23/ BF21/P23
AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

COVER: U.S. MSHA APPROVED
NOTES: Sizes -40 (2.1/2") and - 48 (3") not included in the standards.
Balflex® hydraulic hose DIN EN 853 1SN / SAE 100R1AT has a very superior working and burst pressure compared with only SAE 100R1AT

BALFLEX FORZA UNO 1SN - DN5 - DIN EN 853 / SAE 100R1AT / ISO 1436 - 3/16" - WP 25MPa 3700PSI - Flame Resistant - MSHA IC-252/00

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FORZA DUE



DIN EN 853 2SN / SAE 100R2AT / ISO 1436 – 10.1004.

High pressure, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
2SN-03	10.1004.03	DN5	3/16"	-3	4,8	13,4	**41.5**	6100	**165.0**	24400	89	0,32
2SN-04	10.1004.04	DN6	1/4"	-4	6,3	14,7	**40.0**	5800	**160.0**	23200	100	0,38
2SN-05	10.1004.05	DN8	5/16"	-5	8,0	16,5	**35.0**	5100	**140.0**	20400	114	0,45
2SN-06	10.1004.06	DN10	3/8"	-6	9,5	18,7	**33.0**	4800	**132.0**	19200	127	0,53
2SN-08	10.1004.08	DN12	1/2"	-8	12,7	21,9	**27.5**	4000	**110.0**	16000	178	0,65
2SN-10	10.1004.10	DN16	5/8"	-10	16,0	25,3	**25.0**	3700	**100.0**	14800	200	0,76
2SN-12	10.1004.12	DN19	3/4"	-12	19,0	29,3	**21.5**	3200	**86.0**	12800	240	1,00
2SN-16	10.1004.16	DN25	1"	-16	25,4	37,9	**16.5**	2400	**65.0**	9600	300	1,48
2SN-20	10.1004.20	DN31	1.1/4"	-20	32,0	47,5	**12.5**	1900	**50.0**	7600	419	2,14
2SN-24	10.1004.24	DN38	1.1/2"	-24	38,0	54,6	**9.0**	1400	**36.0**	5600	500	2,55
2SN-32	10.1004.32	DN51	2"	-32	50,8	67,4	**8.0**	1200	**32.0**	4800	630	3,30
2SN-40	10.1004.40	DN63	2.1/2"	-40	63,5	78,0	**7.0**	1100	**28.0**	4400	760	3,96
2SN-48	10.1004.48	DN76	3 "	-48	76,2	90,0	**5.5**	800	**22.0**	3200	900	4,96

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braids
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex®2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED
AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

NOTES: : Size -48 (3") not included in the standards.
Balflex® hydraulic hose DIN EN 853 2SN / SAE 100R2AT has a very superior working and burst pressure compared with only SAE 100R2AT

BALFLEX FORZA DUE 2SN - DN5 - DIN EN 853 / SAE 100R2AT / ISO 1436 - 3/16" - WP 41.5MPa 6100PSI - Flame Resistant - MSHA IC-252/00

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BALPAC 3000



DIN EN 857 1SC / SAE 100R17 / ISO 11237 – 10.1017.

High pressure, single or double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
						1 Wire Braid						
R17-04	10.1017.04	DN6	1/4"	-4	6.3	12.5	**26.0**	3800	**104.0**	15200	51	0.22
R17-05	10.1017.05	DN8	5/16"	-5	8.0	13.8	**26.0**	3800	**104.0**	15200	60	0.27
R17-06	10.1017.06	DN10	3/8"	-6	9.5	16.2	**25.0**	3625	**100.0**	14500	64	0.34
R17-08	10.1017.08	DN12	1/2"	-8	12.7	19.4	**21.0**	3000	**84.0**	12000	89	0.42
						2 Wire Braid						
R17-10	10.1017.10	DN16	5/8"	-10	15.9	24.2	**21.0**	3000	**84.0**	12000	102	0.51
R17-12	10.1017.12	DN19	3/4"	-12	19.0	28.2	**21.0**	3000	**84.0**	12000	122	0.63
R17-16	10.1017.16	DN25	1"	-16	25.4	35.6	**21.0**	3000	**84.0**	12000	152	1.00

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid on sizes 1/4", 5/16", 3/8" and 1/2" and 2 braids on sizes 5/8", 3/4" and 1"
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX BALPAC 3000 1SC-4K EXCEEDS SAE 100R17 / DIN EN 857 - 1SC ISO 11237 / ISO 18752 TYPE BC DN6 - 1/4" - WP 26 MPa 3800 PSI - Flame Resistant - MSHA IC-252/00

BALPAC 3000



DIN EN 857 1SC / ISO 11237 – 10.1018.

High pressure, single steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1SC-10	10.1018.10	DN16	5/8"	-10	15,9	22,6	**17.5**	2540	**70.0**	10160	150	0.73
1SC-12	10.1018.12	DN19	3/4"	-12	19,0	26,2	**13.5**	1960	**54.0**	7840	180	0.94
1SC-16	10.1018.16	DN25	1"	-16	25,4	33,6	**11.0**	1595	**44.0**	6380	230	1.49

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (- 40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX BALPAC - 3000 DIN EN 857 - 1SC / ISO 11237 - DN16 - 5/8" - WP 17.5 MPa 2540 PSI - Flame Resistant - MSHA IC-252/00

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BALPAC 4000



SAE 100R19 – 10.1020

High pressure, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R19-04	10.1020.04	DN6	1/4"	-4	6,3	13,0	**28,0**	4000	**112,0**	16000	50	0,27
R19-06	10.1020.06	DN10	3/8"	-6	9,5	17,0	**28,0**	4000	**112,0**	16000	65	0,42
R19-08	10.1020.08	DN12	1/2"	-8	12,7	20,0	**28,0**	4000	**112,0**	16000	90	0,52
R19-10	10.1020.10	DN16	5/8"	-10	16,0	24,0	**28,0**	4000	**112,0**	16000	100	0,63
R19-12	10.1020.12	DN19	3/4"	-12	19,0	28,0	**28,0**	4000	**112,0**	16000	120	0,80

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX // BALPAC 4000 SAE 100R19 - DN6 - 1/4" - WP - 28 MPa 4000 PSI - Flame Resistant - MSHA IC-252/00

BALPAC PREMIUM



DIN EN 857 2SC / SAE 100R16 / ISO 11237 – 10.1019.

High pressure, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
2SC-04	10.1019.04	DN6	1/4"	-4	6,3	13,2	**45**	6500	**180**	26000	50	0,27
2SC-05	10.1019.05	DN8	5/16"	-5	8,0	15,1	**42**	6100	**168**	24400	57	0,30
2SC-06	10.1019.06	DN10	3/8"	-6	9,5	17,0	**40**	5800	**160**	23200	65	0,42
2SC-08	10.1019.08	DN12	1/2"	-8	12,7	20,5	**36**	5250	**144**	21000	90	0,52
2SC-10	10.1019.10	DN116	5/8"	-10	16,0	24,2	**28**	4000	**112**	16000	100	0,63
2SC-12	10.1019.12	DN19	3/4"	-12	19,0	28,2	**28**	4000	**112**	16000	120	0,80
2SC-16	10.1019.16	DN25	1"	-16	25,4	35,6	**21**	3000	**84**	12000	150	1,22

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)
NOTE: For sizes DN16(5/8"), DN19(3/4"), DN25(1"), consider Balflex Balpac Premium. Approved at 1 000 000 impulse cycles at 1.33% WP

BALFLEX // BALPAC - PREMIUM R16-7K EXCEEDS DIN EN 857 - 2SC / SAE 100R16 / SAE 100R19 ISO 11237 / ISO 18752 TYPE BC DN6 - 1/4" - WP 45 MPa 6500 PSI - Flame Resistant - MSHA IC-252/00

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BALPAC IMPACTUS 2SC-K



Exceeds DIN EN 857 2SC / Exceeds SAE 100R16 – 10.1010

Extremely high pressure compact, double steel braid reinforced hydraulic hose
Balflex proprietary specification

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R16I-04	10.1010.04	DN6	1/4"	-4	6,3	13,4	**50**	7250	**200**	29000	50	0,27
R16I-05	10.1010.05	DN8	5/16"	-5	8,0	15,0	**45**	6500	**180**	26000	57	0,30
R16I-06	10.1010.06	DN10	3/8"	-6	9,5	17,2	**45**	6500	**180**	26000	65	0,42
R16I-08	10.1010.08	DN12	1/2"	-8	12,7	20,6	**40**	5800	**160**	23200	90	0,52
R16I-10	10.1010.10	DN16	5/8"	-10	16	23,9	**29**	4200	**116**	16800	100	0,63
R16I-12	10.1010.12	DN19	3/4"	-12	19	27,7	**28**	4100	**112**	16400	120	0,80
R16I-16	10.1010.16	DN25	1"	-16	25,4	35,4	**20**	2900	**80**	11600	150	1,22

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

AVAILABLE VERSIONS: Smooth cover (Shark Skin) / High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX // BALPAC - IMPACTUS 2SC-7K EXCEEDS DIN EN 857 - 2SC / SAE 100R16 / ISO 11237 - DN6 - 1/4" - WP 50 MPa 7250 PSI - Flame Resistant - MSHA IC-252/00

FORZA LIFT



Lift and Elevator complying EN 81/2 - 10.1013

High pressure, single or double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1 Wire Braid												
LIFT-12	10.1013.12	DN19	3/4"	-12	19,0	27,8	**5,0**	725	**40,0**	5800	240	0,65
LIFT-16	10.1013.16	DN25	1"	-16	25,4	35,9	**5,0**	725	**40,0**	5800	300	1,00
LIFT-20	10.1013.20	DN31	1.1/4"	-20	32,0	44,0	**5,0**	725	**40,0**	5800	419	1,30
2 Wires Braid												
LIFT-24	10.1013.24	DN38	1.1/2"	-24	38,0	54,6	**4,5**	650	**36,0**	5250	500	2,55
LIFT-32	10.1013.32	DN51	2"	-32	50,8	67,4	**4,0**	580	**32,0**	4650	630	3,30

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid on sizes 3/4", 1", 1.1/4" and 2 braids on sizes 1.1/2" and 2"

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 8:1
TEMPERATURE RANGE: -40°C (-40°F)

APPLICATION: Hydraulic hose for Lift and Elevators
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

COVER: U.S. MSHA APPROVED

BALFLEX // FORZA LIFT DN31 - EN 81/2 - 1.1/4" - WP - 5 MPa 725 PSI - Flame Resistant - MSHA IC-252/00

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FORZA UNO - SHARK SKIN



DIN EN 853 1SN / SAE 100R1AT / ISO 1436 – 10.10S2.

High pressure, single steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1SN-03	10.10S2.03	DN5	3/16"	-3	4,8	11,4	**25.0**	3700	**100.0**	14800	89	0,23
1SN-04	10.10S2.04	DN6	1/4"	-4	6,3	13,0	**22.5**	3300	**90.0**	13200	100	0,23
1SN-05	10.10S2.05	DN8	5/16"	-5	8,0	14,7	**21.5**	3200	**85.0**	12800	114	0,23
1SN-06	10.10S2.06	DN10	3/8"	-6	9,5	17,2	**18.0**	2700	**72.0**	10800	127	0,33
1SN-08	10.10S2.08	DN12	1/2"	-8	12,7	20,5	**16.0**	2400	**64.0**	9600	178	0,42
1SN-10	10.10S2.10	DN16	5/8"	-10	16,0	23,8	**13.0**	1900	**52.0**	7600	200	0,52
1SN-12	10.10S2.12	DN19	3/4"	-12	19,0	27,8	**10.5**	1600	**42.0**	6400	240	0,65
1SN-16	10.10S2.16	DN25	1"	-16	25,4	35,9	**8.8**	1300	**35.0**	5200	300	1,00

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
Balflex® Multicrimp fittings serie BW23/ BF21/P23
AVAILABLE VERSIONS: High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

COVER: U.S. MSHA APPROVED
NOTES: Sizes -40 (2.1/2") and - 48 (3") not included in the standards.
Balflex® hydraulic hose DIN EN 853 1SN / SAE 100R1AT has a very superior working and burst pressure compared with only SAE 100R1AT

BALFLEX FORZA UNO SHARK SKIN 1SN - DN6 - DIN EN 853 / SAE 100R1AT / ISO 1436 - 1/4" - WP 22.5 MPa 3300 PSI - Flame Resistant - MSHA IC-252/00

FORZA DUE - SHARK SKIN



DIN EN 853 2SN / SAE 100R2AT / ISO 1436 – 10.10S4.

High pressure, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
2SN-03	10.10S4.03	DN5	3/16"	-3	4,8	13,4	**41.5**	6100	**165.0**	24400	89	0,32
2SN-04	10.10S4.04	DN6	1/4"	-4	6,3	14,7	**40.0**	5800	**160.0**	23200	100	0,38
2SN-05	10.10S4.05	DN8	5/16"	-5	8,0	16,5	**35.0**	5100	**140.0**	20400	114	0,45
2SN-06	10.10S4.06	DN10	3/8"	-6	9,5	18,7	**33.0**	4800	**132.0**	19200	127	0,53
2SN-08	10.10S4.08	DN12	1/2"	-8	12,7	21,9	**27.5**	4000	**110.0**	16000	178	0,65
2SN-10	10.10S4.10	DN16	5/8"	-10	16,0	25,3	**25.0**	3700	**100.0**	14800	200	0,76
2SN-12	10.10S4.12	DN19	3/4"	-12	19,0	29,3	**21.5**	3200	**86.0**	12800	240	1,00
2SN-16	10.10S4.16	DN25	1"	-16	25,4	37,9	**16.5**	2400	**65.0**	9600	300	1,48

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braids
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex®2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED
AVAILABLE VERSIONS: High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

NOTES: : Size -48 (3") not included in the standards.
Balflex® hydraulic hose DIN EN 853 2SN / SAE 100R2AT has a very superior working and burst pressure compared with only SAE 100R2AT

BALFLEX FORZA DUE SHARK SKIN 2SN - DN16 - DIN EN 853 / SAE 100R2AT / ISO 1436 - 5/8" - WP 25 MPa 3700 PSI - Flame Resistant - MSHA IC-252/00

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BALPAC 3000 - SHARK SKIN



DIN EN 857 1SC / SAE 100R17 / ISO 11237 – 10.1S17.

High pressure, single or double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
							1 Wire Braid					
R17-04	10.1S17.04	DN6	1/4"	-4	6.3	12.5	**26.0**	3800	**104.0**	15200	51	0.22
R17-05	10.1S17.05	DN8	5/16"	-5	8.0	13.8	**26.0**	3800	**104.0**	15200	60	0.27
R17-06	10.1S17.06	DN10	3/8"	-6	9.5	16.2	**25.0**	3625	**100.0**	14500	64	0.34
R17-08	10.1S17.08	DN12	1/2"	-8	12.7	19.4	**21.0**	3000	**84.0**	12000	89	0.42
							2 Wire Braid					
R17-10	10.1S17.10	DN16	5/8"	-10	15.9	24.2	**21.0**	3000	**84.0**	12000	102	0.51
R17-12	10.1S17.12	DN19	3/4"	-12	19.0	28.2	**21.0**	3000	**84.0**	12000	122	0.63
R17-16	10.1S17.16	DN25	1"	-16	25.4	35.6	**21.0**	3000	**84.0**	12000	152	1.00

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid on sizes 1/4", 5/16", 3/8" and 1/2" and 2 braids on sizes 5/8", 3/4" and 1"
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 4:1
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

COVER: U.S. MSHA APPROVED
AVAILABLE VERSIONS: High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX BALPAC 3000 1SC-4K SHARK SKIN EXCEEDS SAE 100R17 / DIN EN 857 - 1SC ISO 11237 / ISO 18752 TYPE BC DN6 - 1/4" - WP 26 MPa 3800 PSI - Flame Resistant - MSHA IC-252/00

BALPAC PREMIUM - SHARK SKIN



DIN EN 857 2SC / SAE 100R16 / ISO 11237 – 10.1S19.

High pressure, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
2SC-04	10.1S19.04	DN6	1/4"	-4	6,3	13,2	**45**	6500	**180**	26000	50	0,27
2SC-05	10.1S19.05	DN8	5/16"	-5	8,0	15,1	**42**	6100	**168**	24400	57	0,30
2SC-06	10.1S19.06	DN10	3/8"	-6	9,5	17,0	**40**	5800	**160**	23200	65	0,42
2SC-08	10.1S19.08	DN12	1/2"	-8	12,7	20,5	**36**	5250	**144**	21000	90	0,52
2SC-10	10.1S19.10	DN116	5/8"	-10	16,0	24,2	**28**	4000	**112**	16000	100	0,63
2SC-12	10.1S19.12	DN19	3/4"	-12	19,0	28,2	**28**	4000	**112**	16000	120	0,80
2SC-16	10.1S19.16	DN25	1"	-16	25,4	35,6	**21**	3000	**84**	12000	150	1,22

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

AVAILABLE VERSIONS: High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)
NOTE: For sizes DN16(5/8"), DN19(3/4"), DN25(1"), consider Balflex Balpac Premium. Approved at 1 000 000 impulse cycles at 1.33% WP

BALFLEX BALPAC - PREMIUM R16-7K SHARK SKIN EXCEEDS DIN EN 857 - 2SC / SAE 100R16 / SAE 100R19 ISO 11237 / ISO 18752 TYPE BC DN6 - 1/4" - WP 45 MPa 6500 PSI - Flame Resistant - MSHA IC-252/00

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BALPAC IMPACTUS 2SC-K – SHARK SKIN



Exceeds DIN EN 857 2SC / Exceeds SAE 100R16 – 10.1S10

Extremely high pressure compact, double steel braid reinforced hydraulic hose
Balflex proprietary specification

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R16I-04	10.1S10.04	DN6	1/4"	-4	6,3	13,4	**50**	7250	**200**	29000	50	0,27
R16I-05	10.1S10.05	DN8	5/16"	-5	8,0	15,0	**45**	6500	**180**	26000	57	0,30
R16I-06	10.1S10.06	DN10	3/8"	-6	9,5	17,2	**45**	6500	**180**	26000	65	0,42
R16I-08	10.1S10.08	DN12	1/2"	-8	12,7	20,6	**40**	5800	**160**	23200	90	0,52
R16I-10	10.1S10.10	DN16	5/8"	-10	16	23,9	**29**	4200	**116**	16800	100	0,63
R16I-12	10.1S10.12	DN19	3/4"	-12	19	27,7	**28**	4100	**112**	16400	120	0,80
R16I-16	10.1S10.16	DN25	1"	-16	25,4	35,4	**20**	2900	**80**	11600	150	1,22

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 4:1
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

COVER: U.S. MSHA APPROVED
AVAILABLE VERSIONS: High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX / BALPAC - IMPACTUS 2SC-4K / SHARK SKIN EXCEEDS DIN EN 857 - 2SC / EXCEEDS SAE 100R16 / ISO 11237 - DN19 - 3/4" - WP 28 MPa 4060 PSI - Flame Resistant - MSHA IC-252/00

BALPAC 3000 - SHARK SKIN



DIN EN 857 1SC / ISO 11237 – 10.1S18.

High pressure, single steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1SC-10-SC	10.1S18.10	DN16	5/8"	-10	15.9	22.6	**17.5**	2540	**70.0**	10160	150	0.73
1SC-12-SC	10.1S18.12	DN19	3/4"	-12	19.0	26.2	**13.5**	1960	**54.0**	7840	180	0.94
1SC-16-SC	10.1S18.16	DN25	1"	-16	25.4	33.6	**11.0**	1595	**44.0**	6380	230	1.49

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 4:1
TEMPERATURE RANGE: -40°C (- 40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

COVER: U.S. MSHA APPROVED
AVAILABLE VERSIONS: High Temperature (Tropic) / Low Temperature (Artic) / Tough Cover (Armourguard)

BALFLEX / BALPAC - 3000 / SHARK SKIN DIN EN 857 - 1SC / ISO 11237 - DN16 - 5/8" - WP 17.5 MPa 2540 PSI - Flame Resistant - MSHA IC-252/00

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Balflex®

BRAKEMASTER R5



SAE 100R5 / SAE J1402 AII – 10.1007.

High pressure hydraulic hose with steel and textile braids reinforcement with rubber impregnated textile cover

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R5-04	10.1007.04	3/16"	-4	4,8	13,2	**20.7**	3100	**82.8**	12400	76	0,19
R5-05	10.1007.05	1/4"	-5	6,3	14,8	**20.7**	3100	**82.8**	12400	86	0,27
R5-06	10.1007.06	5/16"	-6	8,0	17,2	**15.5**	2300	**62.0**	9200	102	0,29
R5-08	10.1007.08	13/32"	-8	10,4	19,5	**13.8**	2100	**55.2**	8400	117	0,36
R5-10	10.1007.10	1/2"	-10	12,7	23,4	**12.1**	1800	**48.3**	7200	140	0,45
R5-12	10.1007.12	5/8"	-12	16,0	27,4	**10.3**	1500	**41.4**	6100	165	0,56
R5-16	10.1007.16	7/8"	-16	22,2	31,4	**5.5**	800	**22.1**	3200	187	0,78
R5-20	10.1007.20	1.1/8"	-20	28,6	38,1	**4.3**	630	**17.2**	2520	229	1,06
R5-24	10.1007.24	1.3/8"	-24	34,9	44,5	**3.4**	500	**13.8**	2000	267	1,45
R5-32	10.1007.32	1.13/16"	-32	46,0	56,4	**2.4**	350	**9.7**	1400	337	1,70
R5-40	10.1007.40	2.3/8"	-40	60,3	73,0	**2.4**	350	**9.7**	1400	610	2,15
R5-48	10.1007.48	3"	-48	76,2	90,5	**1.4**	210	**5.5**	840	838	3,08

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic textile braids with an intermediate high tensile steel wire braid
OUTER TUBE: impregnation of the outer textile braid with black, oil, weather and abrasion resistant synthetic rubber

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® Multicrimp fittings serie P25

AVAILABLE VERSIONS: High Temperature (Heatmaster) / Rubber Cover (Breakmaster R)

BALFLEX BRAKEMASTER SAE 100R5 / SAE J1402 AII - DOT - 3/16" - WP 20.7 MPa 3100 PSI

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2 – MAX JACK



700 BAR JACK HOSE and 1/2" 8000PSI – 10.1S29.

High pressure, double steel braid reinforced hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
JH-04SC	10.1S29.04	1/4"	-4	6,3	14,7	**70.0**	10000	**160.0**	23200	100	0,38
JH-06SC	10.1S29.06	3/8"	-6	9,5	18,7	**70.0**	10000	**140.0**	20000	127	0,53
JH-08SC	10.1S29.08	1/2"	-8	12,7	21,9	**55.2**	8100	**110.4**	16200	178	0,65

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braids
OUTER TUBE: black smooth, oil, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 2.3:1 (1/4") and 2:1 (3/8" and 1/2")
APPLICATION: hydraulic jacks

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

BALFLEX 2 - MAX JACK DN6 - 1/4" - WP 70 MPa 10000 PSI - Flame Resistant - MSHA IC-252/00

3 – MAX



10.1005.

Very high pressure, triple steel braid reinforced hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
3M-06	10.1005.06	3/8"	-6	9,5	21.3	**50.0**	7300	**200.0**	29200	180	0,70
3M-08	10.1005.08	1/2"	-8	12,7	24.3	**47.0**	6900	**188.0**	27600	230	0,80
3M-10	10.1005.10	5/8"	-10	16,0	28.0	**41,0**	6100	**164,0**	24000	250	1,05
3M-12	10.1005.12	3/4"	-12	19,0	31.5	**37,5**	5500	**150,0**	22000	300	1,15
3M-16	10.1005.16	1"	-16	25,4	38.7	**33,0**	4800	**132,0**	19200	340	1,60

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 3 high tensile steel wire braids
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 24 with 20 serie ferrules

BALFLEX 3 - MAX DN10 - 3/8" - WP 50 MPa 7250 PSI

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Balflex®

FIRE SUPPRESSION



MEETS PERFORMANCE DIN DIN EN 853 1SN / SAE 100R1AT – 10.1011.

Medium pressure hose for fire suppression

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
FIRE-04	10.1011.04	1/4"	-4	6.3	13.0	**22.5**	3263	**90.0**	13050	100	0.23
FIRE-05	10.1011.05	5/16"	-5	8.0	14.7	**21.5**	3118	**85.0**	12325	114	0.23
FIRE-06	10.1011.06	3/8"	-6	9.5	17.2	**18.0**	2610	**72.0**	10440	127	0.33
FIRE-08	10.1011.08	1/2"	-8	12.7	20.5	**16.0**	2320	**64.0**	9280	178	0.42
FIRE-10	10.1011.10	5/8"	-10	16.0	23.8	**13.0**	1885	**52.0**	7540	200	0.52
FIRE-12	10.1011.12	3/4"	-12	19.0	27.8	**10.5**	1523	**42.0**	6090	240	0.65
FIRE-16	10.1011.16	1"	-16	25.4	35.9	**8.8**	1276	**35.0**	5075	300	1.00

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid

OUTER TUBE: red wrapped; oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1
APPLICATION: mining, forestry and firefighting equipment.

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® c2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED
AVAILABLE VERSIONS: Smooth Cover (Shark Skin)

BALFLEX // FIRE SUPPRESSION HOSE 1SN - DN6 - DIN EN 853 / SAE 100R1AT / ISO 1436 - 1/4" - WP 22.5 MPa 3300 PSI - Flame Resistant - MSHA IC-252/00

BALWASH MICROLINE



Balflex® Balwash MICROLINE 22.0MPa - 10.1WSK.04

High pressure, single wire braid, slim outer diameter for high flexibility, smooth cover hose

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1WSK.04	1/4"	-4	6,3	11,8	**22,0**	3200	**90.0**	12800	100	0,21

INNER TUBE: seamless hot water resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid

OUTER TUBE: black wrapped, oil, weather and abrasion resistant smooth pin-pricked synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: hobby and high pressure cleaning profissional equipments

TEMPERATURE RANGE: -60°C (-76°F) +70°C (+158°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

BALFLEX // BALWASH MICROLINE DN6 - 1/4" - WP 22 MPa 3190 PSI

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BALWASH 1W



Balflex® Balwash 155°C (+311°F) 1W 22.0MPa - 10.1W00

High pressure, single wire braid reinforced high temperature car wash hose

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1W00.04	1/4"	-4	6,3	13,0	**22,0**	3200	**90.0**	12800	100	0,23
10.1W00.05	5/16"	-5	8,0	14,7	**22,0**	3200	**85.0**	12800	114	0,28
10.1W00.06	3/8"	-6	9,5	17,2	**22,0**	3200	**72.0**	12800	127	0,33
10.1W00.08	1/2"	-8	12,7	20,5	**22,0**	3200	**64.0**	12800	178	0,42

INNER TUBE: seamless hot water resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid

OUTER TUBE: black wrapped, oil, weather and abrasion resistant wrapped pin-pricked synthetic rubber
SAFETY FACTOR: 4:1 in 1/4"; 3.9:1 in 5/16"; 3.3:1 in 3/8"; 2.9:1 in 1/2"

APPLICATION: high temperature and high pressure cleaning profissional equipments

TEMPERATURE RANGE: 0°C (+32°F) +155°C (+311°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

BALFLEX // BALWASH UNO 1W - 155°C / 311°F - DN6 - 1/4" - WP 22 MPa 3190 PSI

BALWASH 2W



Balflex® Balwash 155°C (+311°F) 2W 40.0MPa - 10.2W00

High pressure, double wire braid reinforced high temperature car wash hose

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.2W00.04	1/4"	-4	6,3	14,7	**40.0**	5800	**160.0**	23200	100	0,38
10.2W00.05	5/16"	-5	8,0	16,5	**40.0**	5800	**140.0**	23200	114	0,45
10.2W00.06	3/8"	-6	9,5	18,7	**40.0**	5800	**132.0**	23200	127	0,53
10.2W00.08	1/2"	-8	12,7	21,9	**40.0**	5800	**110.0**	23200	178	0,65

INNER TUBE: seamless hot water resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braids

OUTER TUBE: black wrapped, oil, weather and abrasion resistant wrapped pin-pricked synthetic rubber
SAFETY FACTOR: 4:1 in 1/4"; 3.9: 1 in 5/16"; 3.3:1 in 3/8"; 2.9:1 in 1/2"

APPLICATION: high temperature and high pressure cleaning profissional equipments

TEMPERATURE RANGE: 0°C (+32°F) +155°C (+311°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23

BALFLEX // BALWASH DUE 2W - 155°C / 311°F - DN6 - 1/4" - WP 40 MPa 5800 PSI

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BALWASH 1W BLUE



Balflex® Balwash 155°C (+311°F) 1W 22.0MPa - 10.1W00.B

High pressure, single wire braid reinforced high temperature car wash hose

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1W00.04B	1/4"	-4	6,3	13,0	**22,0**	3200	**90.0**	12800	100	0,23
10.1W00.05B	5/16"	-5	8,0	14,7	**22,0**	3200	**85.0**	12800	114	0,28
10.1W00.06B	3/8"	-6	9,5	17,2	**22,0**	3200	**72.0**	12800	127	0,33
10.1W00.08B	1/2"	-8	12,7	20,5	**22,0**	3200	**64.0**	12800	178	0,42

INNER TUBE: seamless hot water resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid

OUTER TUBE: blue, oil, weather and abrasion resistant wrapped pin-pricked synthetic rubber
SAFETY FACTOR: 4:1 in 1/4"; 3.9:1 in 5/16"; 3.3:1 in 3/8"; 2.9:1 in 1/2"

APPLICATION: high temperature and high pressure cleaning profissional equipments

TEMPERATURE RANGE: 0°C (+32°F) +155°C (+311°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23



BALWASH 2W BLUE



Balflex® Balwash 155°C (+311°F) 2W 40.0MPa - 10.2W00.B

High pressure, double wire braid reinforced high temperature car wash hose

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.2W00.04B	1/4"	-4	6,3	14,7	**40.0**	5800	**160.0**	23200	100	0,38
10.2W00.05B	5/16"	-5	8,0	16,5	**40.0**	5800	**140.0**	23200	114	0,45
10.2W00.06B	3/8"	-6	9,5	18,7	**40.0**	5800	**132.0**	23200	127	0,53
10.2W00.08B	1/2"	-8	12,7	21,9	**40.0**	5800	**110.0**	23200	178	0,65

INNER TUBE: seamless hot water resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braids

OUTER TUBE: blue, oil, weather and abrasion resistant wrapped pin-pricked synthetic rubber
SAFETY FACTOR: 4:1 in 1/4"; 3.9:1 in 5/16"; 3.3:1 in 3/8"; 2.9:1 in 1/2"

APPLICATION: high temperature and high pressure cleaning profissional equipments
TEMPERATURE RANGE: 0°C (+32°F) +155°C (+311°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
AVAILABLE VERSIONS: Smooth cover (Shark Skin)



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FLAT HDPE SPRING GUARD



HYDRAULIC AND INDUSTRIAL HOSE FLAT GUARD – 11.103.

Black Colour, High Density Polyethylene Protection Spring Guard

#	OD mm	ID mm	mm	Pitch mm	Recommended usage range (OD of hose mm)
11.103.09-15	12,0	9,6	1,2	9.0	9-13
11.103.14-20	16,0	13,4	1,3	12.0	13-18
11.103.18-24	20,0	16,0	2,0	16.0	16-22
11.103.22-30	25,0	20,6	2,2	22.0	20-27
11.103.30-38	32,0	27,0	2,5	22.0	27-36
11.103.36-45	40,0	34,6	2,7	24.0	34-44
11.103.44-65	50,0	43,0	3,5	30.0	43-45
11.103.58-70	63,0	55,6	3,7	37.0	55-67
11.103.65-78	75,0	66,2	4,4	42.0	66-80
11.103.80-98	90,0	80,2	4,9	45.0	80-98
11.103.96-116	100,0	99,0	5,5	50.0	99-115

RAW MATERIAL: high density polyethylene resistant to abrasion and UV rays

COLOR: black

TEMPERATURE RANGE: -20°C (-4°F) +95°C (-203°F)

APPLICATION: protection of external rubber layer of hydraulic and industrial hoses, against the early wearing due to abrasion

FLAT HDPE SPRING GUARD



HYDRAULIC AND INDUSTRIAL HOSE FLAT GUARD – 11.103.Y

Yellow colour, High Density Polyethylene Protection Spring Guard

#	OD mm	ID mm	mm	Pitch mm	Recommended usage range (OD of hose mm)
11.103.09-15Y	12,0	9,6	1,2	9.0	9-13
11.103.14-20Y	16,0	13,4	1,3	12.0	13-18
11.103.18-24Y	20,0	16,0	2,0	16.0	16-22
11.103.22-30Y	25,0	20,6	2,2	22.0	20-27
11.103.30-38Y	32,0	27,0	2,5	22.0	27-36
11.103.36-45Y	40,0	34,6	2,7	24.0	34-44
11.103.44-65Y	50,0	43,0	3,5	30.0	43-45
11.103.58-70Y	63,0	55,6	3,7	37.0	55-67
11.103.65-78Y	75,0	66,2	4,4	42.0	66-80
11.103.80-98Y	90,0	80,2	4,9	45.0	80-98
11.103.96-116Y	100,0	99,0	5,5	50.0	99-115

RAW MATERIAL: high density polyethylene resistant to abrasion and UV rays

COLOR: Yellow

TEMPERATURE RANGE: -20°C (-4°F) +95°C (-203°F)

APPLICATION: protection of external rubber layer of hydraulic and industrial hoses, against the early wearing due to abrasion

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Balflex®

HOSESHIELD XT PROTECTIVE SLEEVE



Hydraulic and industrial hose protection sleeve – 11.400

Nylon black colour, US MSHA IC-252/02 approval.

#	I.D. mm	flat width mm	thickness mm	length m
11.400.017	17	30	0.8	50
11.400.020	20	36	0.8	50
11.400.023	23	40	0.8	50
11.400.025	25	43	0.8	50
11.400.027	27	45	0.8	50
11.400.031	31	52	0.8	50
11.400.033	33	55	0.8	50
11.400.036	36	60	0.8	50
11.400.040	40	66	0.8	50
11.400.044	44	74	0.8	50
11.400.047	47	77	0.8	50
11.400.053	53	86	0.8	50
11.400.055	55	90	0.8	50
11.400.060	60	98	0.8	50
11.400.066	66	106	0.8	50
11.400.073	73	118	0.8	50
11.400.078	78	126	0.8	50
11.400.085	85	136	0.8	50
11.400.093	93	150	0.8	50
11.400.112	112	178	0.8	50

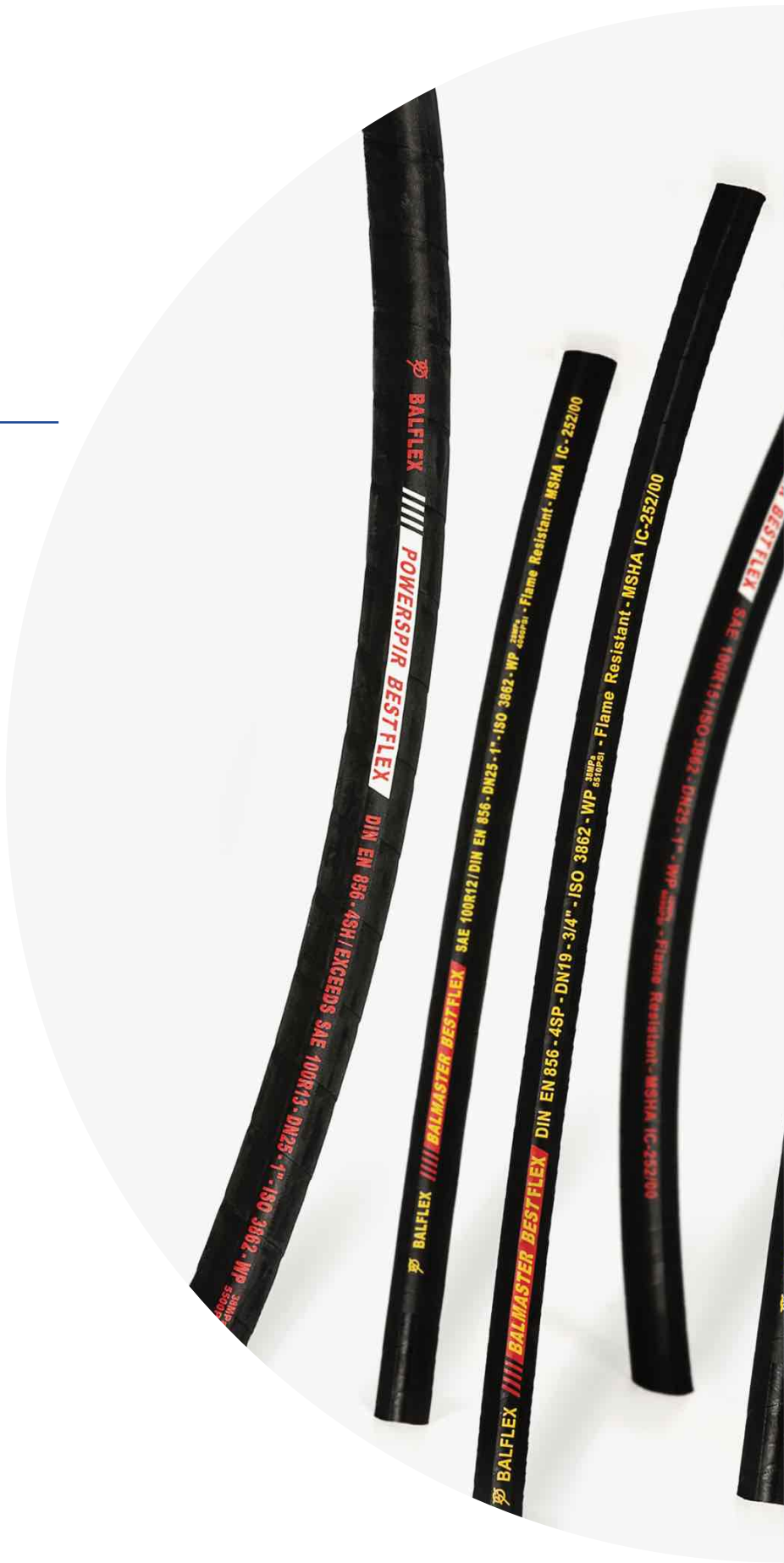
CONSTRUCTION: 100% high tensile Nylon 6 Multifilament Yarn into a high tenacity braid

THICKNESS: 0.8mm thick overlapping layers of synthetic Nylon 6 Yarn with 840 denier yarn

ABRASION RESISTANCE: according to ISO 6945, for more than 50 000 cycles
STRECHING BREAK: up to 33 to 43%
TEMPERATURE: -40ºC (-40ºF) / +120ºC (+248ºF)

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Spiral Hydraulic Hoses





pag. 46 **BALMASTER BESTFLEX 4SP**

pag. 47 **POWERSPIR BESTFLEX 4SH**

pag. 48 **BALMASTER BESTFLEX R12**

pag. 48 **POWERSPIR BESTFLEX R13**

pag. 49 **POWERSPIR BESTFLEX R15**

Balflex®

Spiral Hydraulic Hoses

Balflex® hydraulic Steel Wire Spiral hoses are produced to Balflex® specifications and according to ISO 3862, SAE J517 and EN 856 standards. They cover a wide variety of very high pressure applications, for petroleum and water base hydraulic fluids.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.

General Guidelines

Balflex® hydraulic steel wire spiral wounded hoses are designed with a safety factor of 4:1 relating minimum burst pressure and recommended working pressure. Working pressure [W P] and nominal diameter [D N] are always branded on the hose.

Hydraulic hoses are designed for petroleum base hydraulic fluids applications with a temperature range of –40°C (-40°F) to +100°C (+212°F). Special rubber compounds and other lining materials allow to exceed these limits. Hydraulic hoses may also be used for water base hydraulic fluids if the working temperature does not exceed +70°C (+158°F). For conveyance of Hot Air working temperature should be reduced to a maximum of +60°C (+140°F).

Selection, assembly and installation of hydraulic steel wire spiral wounded hoses should follow **Balflex®** recommendations and SAE J1273 and DIN 20066 standards. **Hydraulic hose assemblies should always be thoroughly inspected and hydraulically tested before installation.** All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

Installations that do not comply with an adequate layout geometry of the hose assembly may significantly reduce the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose and/or end fitting specifications may shorten the hose assembly life drastically.

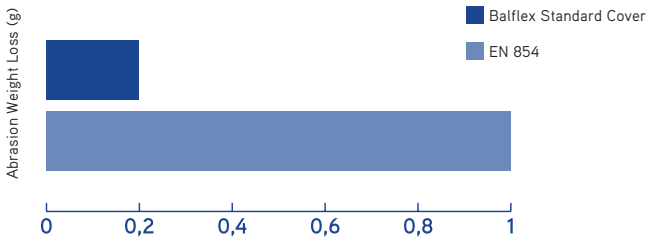
The failure of a hydraulic steel wire spiral wounded hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of fittings and their parts, the whipping of unrestrained hose, spillage or combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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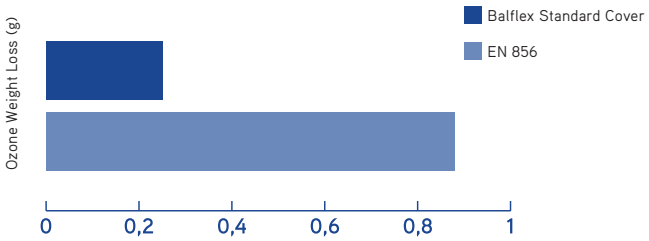
Balflex Hoses are manufactured with a tough outer cover that increases the resistance to environmental and external application damages and present the following main features:

- Excellent abrasion resistant when tested according to modified ISO 6945 method, and according to ISO 20444 new abrasion test methods.
- High level of resistance to cracking due to Ozone exposure, resulting in 4 times superior resistance than the relevant EN ISO 7326 requirement;

ABRASION RESISTANCE



OZONE RESISTANCE



- US MSHA Approved Cover (IC 252/00)

Table 1: Rated working pressure at 20°C (+68°F) of Balflex® hydraulic Spiral hoses (MPa / PSI)

Balflex	Standard	1/4" -4 DN5	3/8" -6 DN6	1/2" -8 DN12	5/8" -10 DN16	3/4" -12 DN19	1" -16 DN25	1.1/4" -20 DN31	1.1/2" -24 DN38	2" -32 DN51
BALMASTER	DIN EN 856 R12 / ISO 3862 / SAE J517 R12		28.0	28.0	28.0	28.0	28.0	21.0	17.5	17.5
			4000	4000	4000	4000	4000	3100	2600	2600
BALMASTER	DIN EN 856 4SP / ISO 3862	45.0	44.5	41.5	35.0	38.0	32.0	21.0	21.0	17.5
		6600	6500	6100	5100	5600	4700	3100	3100	2600
POWERSPIR	DIN EN 856 4SH / ISO 3862					42.0	42.0	35.0	30.0	25.0
						6100	6100	5100	4400	3700
POWERSPIR	DIN EN 856 R13 / ISO 3862 / SAE J517 R13					42.0	42.0	35.0	35.0	35.0
						6100	6100	5100	4400	3700
POWERSPIR	ISO 3862 / SAE J517 R15		42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0
			6100	6100	6100	6100	6100	6100	6100	6100

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Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20°C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20°C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20°C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20°C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1 MPa = 10,0 bar

Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F°	C° x 1,8 + 32	F° (Fahrenheit)
C°	(F° - 32): 1,8	C° (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4 mm
Example: : +100°C = +212°F

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Fluid Compatibility and Resistance Chart for Balflex Spiral Hydraulic Hoses

● Recommended ● Recommended with Restrictions ● Not Recommended

Acetic Acid		Ethyl Glycol	●	Oil of Turpentine	●
Acetic Acid (30%)	●	Ethyleneoxide	●	Oleic Acid	●
Acetone	●	Fluorine	●	Oxalic Acid	●
Acetylene	●	Formaldehyde	●	Perchloroethylene	●
Ammonia, Gas (Hot)	●	Formaldehyde 40%	●	Phenol	●
Ammonia, Liquid	●	Fuel Oil	●	Phosphoric Acid (10%)	●
Ammoniumchloride		Gaseous Hydrogen	●	Phosphoric Acid (70%)	●
Amyl Acetate	●	Gasoline	●	Phosphate Ester Base Oil	●
Aniline	●	Glycerin / Glycerol	●	Saturated Steam	●
Animal Oils	●	Glycol to 66°C	●	Sea Water	●
Benzol / Benzene	●	Hexane	●	Silicone Oils	●
Butane	●	Hydraulic Oil	●	Soap Solutions	●
Butyl Acetate	●	Hydrochloric Acid 37%	●	Soda	●
Butyl Alcohol / Butanol	●	Hydroger Peroxide (Dil.)	●	Sodium Chloride Solutions	●
Calcium Chloride Solutions		Hydroger Peroxide (Conc.)	●	Sodium Hydroxide 20%	●
Carbon Dioxide	●	Isocyanates		Sodium Hypochloryde 10%	●
Carbon Disulfide	●	Isopropil Alcohol	●	Sulphur	●
Carbonates	●	Kerosene	●	Sulphur Dioxide	●
Caustic Soda	●	Liquid Oxygen	●	Sulphuric Acid up to 50%	●
Chlorinated Solvents	●	LPG	●	Sulphuric Acid above 50%	●
Chlorine	●	Lubricating Oils	●	Toluene	●
Chloroform	●	Mercury	●	Trichloroethylene	●
Citric and Solutions	●	Methyl Alcohol / Methanol	●	Vegetable Greases	●
Compressed Air	●	Methyl Chloride (Cold)	●	Water	●
Cyclohexane	●	Methyl Ethyl Khetone	●	Xylene	●
Crude Petroleum Oil	●	Mineral Oils	●		
Dioctyl Phthalate		Naphtha	●		
Diesel Fuel	●	Naphthalene	●		
Ethers	●	Natural Gas	●		
Ethyl Acetate	●	Nitric Acid (Dil.)	●		
Ethyl Alcohol	●	Nitric Acid (Conc.)	●		
Ethyl Chloride	●	Nitrobenzen	●		

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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Balflex®

BALMASTER BESTFLEX 4SP



DIN EN 856 4SP / ISO 3862 - 10.1008.-F

Very high pressure, extra flexible, four steel wire spirals reinforced hydraulic hose

REFERENCE	#	inch	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
4SP-04-F	10.1008.04F	DN6	1/4"	-4	6.5	17,4	**45,0**	6600	**180,0**	26400	150	0,70
4SP-06-F	10.1008.06F	DN10	3/8"	-6	9.6	19,9	**44,5**	6500	**178,0**	26000	180	0,80
4SP-08-F	10.1008.08F	DN12	1/2"	-8	12,9	22,8	**41,5**	6100	**166,0**	24400	230	1,15
4SP-10-F	10.1008.10F	DN16	5/8"	-10	16.0	26,4	**42,0**	6000	**168,0**	24000	250	1,26
4SP-12-F	10.1008.12F	DN19	3/4"	-12	19.2	30,6	**38,0**	5600	**152,0**	22400	300	1,44
4SP-16-F	10.1008.16F	DN25	1"	-16	25,6	37,7	**32,0**	4700	**128,0**	18800	340	2,15
4SP-20-F	10.1008.20F	DN31	1.1/4"	-20	32.1	48,6	**21,0**	3100	**84,0**	12400	460	2,75
4SP-24-F	10.1008.24F	DN38	1.1/2"	-24	38.3	55,0	**21,0**	3100	**84,0**	12400	560	3,35
4SP-32-F	10.1008.32F	DN51	2"	-32	51.0	68,1	**17,5**	2600	**70,0**	10400	660	4,60

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 4 spirals of high tensile steel wire
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 23/24 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23
*On sizes – 6 (3/8") and - 8 (1/2") the Balflex® BALMASTER DIN EN 856 4SP and Balflex® POWERSPIR SAE 100R15 hoses are the same, and they are branded Balflex® POWERSPIR.

AVAILABLE VERSIONS: tough cover / Armourguard

BALFLEX BALMASTER BESTFLEX DIN EN 856 - 4SP - DN6 - 1/4" - ISO 3862 - WP 45 MPa 6600 PSI - Flame Resistant - MSHA IC-252/00

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POWERSPIR BESTFLEX 4SH



DIN EN 856 4SH / ISO 3862 - 10.1009.-F

Very high pressure, extra flexible, four steel wire spirals reinforced hydraulic hose

REFERENCE	#	inch	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
4SH-12-R13/15-F	10.1009.12F	DN19	3/4"	-12	19.2	30,8	**42,0**	6100	**168,0**	24400	265	1,56
4SH-16-R13/15-F	10.1009.16F	DN25	1"	-16	25,6	37,6	**42,0**	6100	**168,0**	24000	330	2,09
4SH-20-F	10.1009.20F	DN31	1.1/4"	-20	32.1	44,5	**35,0**	5100	**140,0**	20400	460	2,57
4SH-24-F	10.1009.24F	DN38	1.1/2"	-24	38.3	51,7	**30,0**	4400	**120,0**	17600	560	3,44
4SH-32-F	10.1009.32F	DN51	2"	-32	51.0	66,0	**25,0**	3700	**100,0**	14800	700	4,90

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 4 spirals of very high tensile steel wire
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 24/26 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/JJ
AVAILABLE VERSIONS: tough cover / Armourguard

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

*On sizes – 12 (3/4") and – 16 (1") the Balflex® POWERSPIR DIN EN 856 4SH and SAE 100R13 and SAE 100R15 hoses are the same. The working pressure of Balflex® POWERSPIR DIN EN 856 4SH / SAE 100R13 / SAE 100R15 3/4"and 1"are higher than standard SAE 100R13.

BALFLEX POWERSPIR BESTFLEX 6K DIN EN 856 4SH / EXCEEDS SAE 100R13 / SAE 100R15 - DN25 - 1" - ISO 3862 - WP 42 MPa 6100 PSI - Flame Resistant - MSHA IC-252/00

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BALMASTER BESTFLEX R12



SAE 100R12 / DIN EN 856 R12 / ISO 3862 - 10.1012.-F

Very high pressure, extra flexible, four steel wire spirals reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R12-06-A	10.1012.06F	DN10	3/8"	-6	9.6	19,6	**28,0**	4000	**112,0**	16000	120	0,80
R12-08-A	10.1012.08F	DN12	1/2"	-8	12,9	23,1	**28,0**	4000	**112,0**	16000	170	1,15
R12-10-A	10.1012.10F	DN16	5/8"	-10	16.0	27,0	**28,0**	4000	**112,0**	16000	190	1,26
R12-12-A	10.1012.12F	DN19	3/4"	-12	19.2	30,1	**28,0**	4000	**112,0**	16000	230	1,44
R12-16-A	10.1012.16F	DN25	1"	-16	25,6	37,3	**28,0**	4000	**112,0**	16000	290	2,15
R12-20-A	10.1012.20F	DN31	1.1/4"	-20	32.1	46,5	**21,0**	3100	**84,0**	12400	400	2,75
R12-24-A	10.1012.24F	DN38	1.1/2"	-24	38.3	53,0	**17,5**	2600	**70,0**	10400	480	3,35
R12-32-A	10.1012.32F	DN51	2"	-32	51.0	66,5	**17,5**	2600	**70,0**	10400	630	4,60

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 4 spirals of high tensile steel wire

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® 2-piece fittings serie 23/24 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23
AVAILABLE VERSIONS: tough cover / Armourguard

BALFLEX BALMASTER BESTFLEX SAE 100R12 / DIN EN 856 - DN10 - 3/8" - ISO 3862 - WP 28 MPa 4000 PSI - Flame Resistant - MSHA IC-252/00

POWERSPIR BESTFLEX R13



SAE 100R13 / DIN EN 856 R13 / ISO 3862 – 10.1014.-F

Very high pressure, extra flexible, four or six steel wire spirals reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
4SH-12-R13/15-A	10.1009.12F	DN19	3/4"	-12	19.2	30,8	**42,0**	6100	**168,0**	24400	265	1,56
4SH-16-R13/15-A	10.1009.16F	DN25	1"	-16	25,6	37,6	**42,0**	6100	**168,0**	24000	330	2,09
R13-20-A	10.1014.20F	DN31	1.1/4"	-20	32.1	49,4	**35,0**	5100	**140,0**	20400	420	3,90
R13-24-A	10.1014.24F	DN38	1.1/2"	-24	38.3	56,9	**35,0**	5100	**140,0**	20400	500	4,96
R13-32-A	10.1014.32F	DN51	2"	-32	51.0	70,9	**35,0**	5100	**140,0**	20400	620	7,09

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 4 or 6 spirals of high tensile steel wire
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: +120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)
COUPLINGS: Balflex® 2-piece fittings serie 24/26 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/JJ

AVAILABLE VERSIONS: tough cover / Armourguard
NOTES: According to ISO 3862/EN 856 type R13/SAE J517 type R13, the Balflex® POWERSPIR SAE 100R13 hose is of 4 steel wire spirals on sizes -12 (3/4") and -16 (1") and of 6 steel wire spirals on sizes -20 (1.1/4"), -24 (1.1/2") and -32 (2").

*On sizes -12 (3/4") and -16 (1") the Balflex® POWERSPIR DIN EN 856 4SH and SAE 100R13 and SAE 100R15 hoses are the same. The working pressure of Balflex® POWERSPIR DIN EN 856 4SH SAE 100R13 3/4" and Balflex® POWERSPIR DIN EN 856 4SH SAE 100R13 1" are higher than standard SAE 100R13.

BALFLEX POWERSPIR BESTFLEX SAE 100R13 / DIN EN 856 / ISO 3862 - DN38 - 1.1/2" - WP 35 MPa 5000 PSI - MSHA IC-252/00

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POWERSPIR BESTFLEX R15



SAE 100R15 / ISO 3862 – 10.1016.-F

Very high pressure, extra flexible, four or six steel wire spirals reinforced hydraulic hose

REFERENCE	#	inch	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R15-06-F	10.1016.06F	DN10	3/8"	-6	9,7	22,0	**42,0**	6100	**168,0**	24000	140	0,80
R15-08-F	10.1016.08F	DN12	1/2"	-8	12,9	25,2	**42,0**	6100	**168,0**	24000	190	1,15
4SP-R15-10-F	10.1008.10F	DN16	5/8"	-10	16,0	27,2	**42,0**	6100	**168,0**	24000	250	1,26
4SH-12-R13/15-F	10.1009.12F	DN19	3/4"	-12	19.2	31,5	**42,0**	6100	**168,0**	24000	265	1,56
4SH-16-R13/15-F	10.1009.16F	DN25	1"	-16	25,6	38,4	**42,0**	6100	**168,0**	24000	330	2,10
R15-20-F	10.1016.20F	DN31	1.1/4"	-20	32,1	50,2	**42,0**	6100	**168,0**	24000	445	3,65
R15-24-F	10.1016.24F	DN38	1.1/2"	-24	38,3	56,8	**42,0**	6100	**168,0**	24000	530	4,75
R15-32-F	10.1016.32F	DN51	2"	-32	51,0	71,5	**42,0**	6100	**168,0**	24000	650	6,62

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 4 or 6 spirals of high tensile steel wire
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F); Intermittent service: 120°C (+248°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 24/26 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/JJ
AVAILABLE VERSIONS: tough cover / Armourguard

NOTE: On size –12 (3/4") and -16 (1") the Balflex® POWERSPIR DIN EN 856 4SH and SAE 100R13 and SAE 100R15 hoses are the same



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Waterblast Hoses





pag. 55 **WATERBLAST 1100**
pag. 55 **WATERBLAST 1250**

Balflex®

Waterblast Hoses

Balflex® Waterblast hoses are produced to Balflex® specifications. They cover a wide variety of very high pressure applications, in rubber, steel spiral reinforcement, for waterjet cutting and waterjet cleaning equipment and not recommended for hydraulic oil applications.

Our Waterblast hose range 1100 – 1250 Bar, are used for cleaning of chemical and power supply installations, cleaning and cutting of concrete construction, pavement, steel surface and steelwork, tanks, vessels, mining installations.

Balflex® optimized the production of these hoses and their compatibility with Balfit Waterblast connectors, in order to assure the highest performance in hardest conditions.

General Guidelines

Balflex® Waterblast hoses are designed with a safety factor of 2.5:1 relating minimum burst pressure and recommended working pressure. Working pressure and nominal diameter are always branded on the hose.

Waterblast hoses are designed for waterjet applications with a temperature range of -40ºC (-40ºF) to +90ºC (+194ºF). Special rubber compounds and other lining materials allow to exceed these limits.

Selection, assembly and installation of waterblast hoses should follow Balflex recommendations and SAE J1273 and DIN 20066 standards. Waterblast hose assemblies should always be inspected and hydraulically tested before installation. All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

Installations that do not comply with an adequate geometry of the hose assembly may reduce significantly the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose specifications may shorten drastically the hose lifetime.

The failure of a **Waterblast** hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of couplings and itís parts, the whipping of unrestrained hose, spillage and combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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Table 1: Rated working pressure at 20°C (+68°F) of Balflex® Waterblast hoses (MPa / PSI)

Balflex	Standard	1/4" -4 DN6	3/8" -6 DN10	1/2" -8 DN12	5/8" -10 DN16	3/4" -12 DN19	1" -16 DN25	1.1/4" -20 DN31	1.1/2" -24 DN38	2" -32 DN51
WATERBLAST 1100			110.0	110.0		110.0				
			16000	16000		16000				
WATERBLAST 1250			125.0	125.0						
			18130	18130						

Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20°C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20°C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20°C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20°C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1 MPa = 10,0 bar

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Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F°	C° x 1,8 + 32	F° (Fahrenheit)
C°	(F° - 32): 1,8	C° (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4 mm
Example: : +100°C = +212°F

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WATERBLAST 1100



10.1022.

Extremely high pressure hose for Waterblasting

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1022.06	3/8"	-6	9.7	20,6	**110,0**	16000	**275,0**	4000	155	0,821
10.1022.08	1/2"	-8	12,9	27	**110,0**	16000	**275,0**	4000	200	1,525
10.1022.12	3/4"	-12	19.2	32	**110,0**	16000	**275,0**	4000	310	2,068

INNER TUBE: seamless synthetic rubber resistant to water at very high pressure
REINFORCEMENT: 4 spirals of high tensile steel wire

OUTER TUBE: black, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 2.5:1

APPLICATION: very high pressure waterblasting
TEMPERATURE RANGE: - 40ºC (-40ºF) + 90ºC (+194ºF)

COUPLINGS: crimped Balflex® Waterblast coupling serie

BALFLEX WATERBLAST 1100 DN19 - 3/4" - WP 110 MPa 16000 PSI

WATERBLAST 1250



10.1023.

Extremely high pressure hose for Waterblasting

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1023.06	3/8"	-6	9.7	21,7	**125,0**	18130	**312,5**	45325	155	0,967
10.1023.08	1/2"	-8	12,3	26,4	**125,0**	18130	**312,5**	45325	230	2,048

INNER TUBE: seamless synthetic rubber resistant to water at very high pressure
REINFORCEMENT: 4 spirals of high tensile steel wire

OUTER TUBE: black, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 2.5:1

APPLICATION: very high pressure waterblasting
TEMPERATURE RANGE: - 40ºC (-40ºF) + 90ºC (+194ºF)

COUPLINGS: crimped Balflex® Waterblast coupling serie

BALFLEX WATERBLAST 1250 DN12 - 1/2" - WP 125 MPa 18130 PSI

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High Temperature Hydraulic Hose





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pag. 63 **FORZA DUE TROPIC**
pag. 64 **BALPAC PREMIUM TROPIC**
pag. 65 **BRAKEMASTER R5R HEATMASTER**

Balflex®

High Temperature Hydraulic Hose

Balflex® hydraulic high temperature hoses are produced to Balflex® specifications and according to ISO 1436, ISO 11237, SAE J517 and EN 853 to EN 857 standards. They cover a wide variety of medium pressure applications, for petroleum and water base hydraulic fluids. They are however not suitable for Hot Dry Air applications.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.

General Guidelines

Balflex® hydraulic high temperature hoses are designed with a safety factor of 4:1 relating minimum burst pressure and recommended working pressure. Working pressure [W P] and nominal diameter [D N] are always branded on the hose.

High Temperature Hydraulic hoses are designed for petroleum base hydraulic fluids applications with a temperature range of –40°C (-40°F) to +135°C (+275°F). Attention must be taken with conveyance of dry hot air, as premature ageing may occur.

Selection, assembly and installation of hydraulic hoses should follow **Balflex®** recommendations and **SAE J1273** and **DIN 20066** standards. **Hydraulic hose assemblies should always be thoroughly inspected and hydraulically tested before installation.** All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

Installations that do not comply with an adequate layout geometry of the hose assembly may significantly reduce the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose and/or end fitting specifications may shorten the hose assembly life drastically.

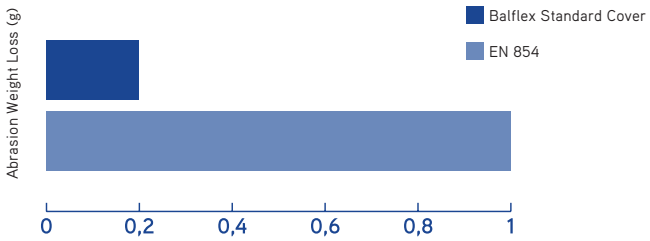
The failure of a hydraulic steel wire braided hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of fittings and their parts, the whipping of unrestrained hose, spillage or combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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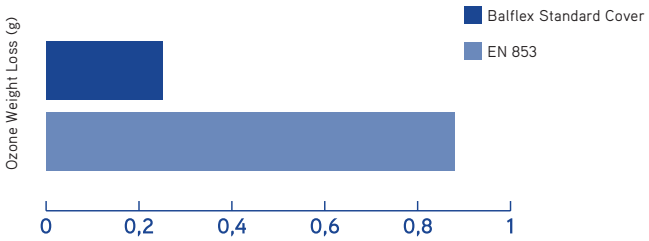
Balflex Hoses are manufactured with a tough outer cover that increases the resistance to environmental and external application damages and present the following main features:

- Excellent abrasion resistant when tested according to modified ISO 6945 method, and according to ISO 20444 new abrasion test methods.
- High level of resistance to cracking due to Ozone exposure, resulting in 4 times superior resistance than the relevant EN ISO 7326 requirement;

ABRASION RESISTANCE



OZONE RESISTANCE



- US MSHA Approved Cover (IC 252/00)

Table 1a: Rated working pressure at 20°C (+68°F) of Balflex® hydraulic high temperature hoses (MPa / PSI)

Balflex	Standard	3/16" -3 DN5	1/4" -4 DN6	5/16" -5 DN8	3/8" -6 DN10	1/2" -8 DN12	5/8" -10 DN16	3/4" -12 DN19	1" -16 DN25	1.1/4" -20 DN31	1.1/2" -24 DN38	2" -32 DN51
FORZA UNO TROPIC	DIN EN 853 1SN / ISO 1436 / SAE J517 R1AT	25.0	22.5	21.5	18.0	16.0	13.0	10.5	8.8	6.3	5.0	4.0
		3700	3300	3200	2700	2400	1900	1600	1300	920	730	580
FORZA DUE TROPIC	DIN EN 853 2SN / ISO 1436 / SAE J517 R2AT	41.5	40.0	35.0	33.0	27.5	25.0	21.5	16.5	12.5	9.0	8.0
		6100	5800	5100	4800	4000	3700	3200	2400	1900	1400	1200
BALPAC PREMIUM TROPIC	DIN EN 857 2SC / ISO 11237 / SAE J517 R16		40.0	35.0	33.0	27.6	25.0	21.5	16.5			
			5800	5100	4800	4100	3700	3300	2400			

Table 1b: Rated working pressure at 20°C (+68°F) of Balflex® hydraulic high temperature hoses (MPa / PSI)

Balflex	type	3/16" -4	1/4" -5	5/16" -6	13/32" -8	1/2" -10	5/8" -12	7/8" -16	1.1/8" -20	1.3/8" -24	1.13/16" -32	23/" -40	3" -48
BRAKEMASTER	SAE J517 R5 / SAE J1402	20.7	20.7	15.5	13.8	12.1	10.3	5.5	4.3	3.4	2.4	2.4	1.4
		3002	3002	2248	2001	1755	1464	798	624	493	348	348	203

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Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20°C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20°C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20°C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20°C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1 MPa = 10,0 bar

Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F°	C° x 1,8 + 32	F° (Fahrenheit)
C°	(F° - 32): 1,8	C° (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4 mm
Example: : +100°C = +212°F

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Fluid Compatibility and Resistance Chart for Balflex Steel Wire Braid Hydraulic Hoses

● Recommended ● Recommended with Restrictions ● Not Recommended

Acetic Acid		Ethyl Glycol	●	Oil of Turpentine	●
Acetic Acid (30%)	●	Ethyleneoxide	●	Oleic Acid	●
Acetone	●	Fluorine	●	Oxalic Acid	●
Acetylene	●	Formaldehyde	●	Perchloroethylene	●
Ammonia, Gas (Hot)	●	Formaldehyde 40%	●	Phenol	●
Ammonia, Liquid	●	Fuel Oil	●	Phosphoric Acid (10%)	●
Ammoniumchloride		Gaseous Hydrogen	●	Phosphoric Acid (70%)	●
Amyl Acetate	●	Gasoline	●	Phosphate Ester Base Oil	●
Aniline	●	Glycerin / Glycerol	●	Saturated Steam	●
Animal Oils	●	Glycol to 66°C	●	Sea Water	●
Benzol / Benzene	●	Hexane	●	Silicone Oils	●
Butane	●	Hydraulic Oil	●	Soap Solutions	●
Butyl Acetate	●	Hydrochloric Acid 37%	●	Soda	●
Butyl Alcohol / Butanol	●	Hydroger Peroxide (Dil.)	●	Sodium Chloride Solutions	●
Calcium Chloride Solutions		Hydroger Peroxide (Conc.)	●	Sodium Hydroxide 20%	●
Carbon Dioxide	●	Isocyanates		Sodium Hypochloryde 10%	●
Carbon Disulfide	●	Isopropil Alcohol	●	Sulphur	●
Carbonates	●	Kerosene	●	Sulphur Dioxide	●
Caustic Soda	●	Liquid Oxygen	●	Sulphuric Acid up to 50%	●
Chlorinated Solvents	●	LPG	●	Sulphuric Acid above 50%	●
Chlorine	●	Lubricating Oils	●	Toluene	●
Chloroform	●	Mercury	●	Trichloroethylene	●
Citric and Solutions	●	Methyl Alcohol / Methanol	●	Vegetable Greases	●
Compressed Air	●	Methyl Chloride (Cold)	●	Water	●
Cyclohexane	●	Methyl Ethyl Khetone	●	Xylene	●
Crude Petroleum Oil	●	Mineral Oils	●		
Dioctyl Phthalate		Naphtha	●		
Diesel Fuel	●	Naphthalene	●		
Ethers	●	Natural Gas	●		
Ethyl Acetate	●	Nitric Acid (Dil.)	●		
Ethyl Alcohol	●	Nitric Acid (Conc.)	●		
Ethyl Chloride	●	Nitrobenzen	●		

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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Balflex®

FORZA UNO TROPIC



DIN EN 853 1SN / SAE 100R1AT / ISO 1436 – 10.1002.-HT

High pressure, high temperature, single steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
1SN-03-HT	10.1002.03HT	DN5	3/16"	-3	4,8	11,4	**25.0**	3700	**100.0**	14800	89	0,23
1SN-04-HT	10.1002.04HT	DN6	1/4"	-4	6,3	13,0	**22.5**	3300	**90.0**	13200	100	0,23
1SN-05-HT	10.1002.05HT	DN8	5/16"	-5	8,0	14,7	**21.5**	3200	**85.0**	12800	114	0,23
1SN-06-HT	10.1002.06HT	DN10	3/8"	-6	9,5	17,2	**18.0**	2700	**72.0**	10800	127	0,33
1SN-08-HT	10.1002.08HT	DN12	1/2"	-8	12,7	20,5	**16.0**	2400	**64.0**	9600	178	0,42
1SN-10-HT	10.1002.10HT	DN16	5/8"	-10	16,0	23,8	**13.0**	1900	**52.0**	7600	200	0,52
1SN-12-HT	10.1002.12HT	DN19	3/4"	-12	19,0	27,8	**10.5**	1600	**42.0**	6400	240	0,65
1SN-16-HT	10.1002.16HT	DN25	1"	-16	25,4	35,9	**8.8**	1300	**35.0**	5200	300	1,00
1SN-20-HT	10.1002.20HT	DN31	1.1/4"	-20	32,0	44,0	**6.3**	920	**25.0**	3680	419	1,30
1SN-24-HT	10.1002.24HT	DN38	1.1/2"	-24	38,0	50.8	**5.0**	730	**20.0**	2920	500	1,63
1SN-32-HT	10.1002.32HT	DN51	2"	-32	50,8	64,3	**4.0**	580	**16.0**	2320	630	2,00

INNER TUBE: seamless oil resistant synthetic rubber resistant to high temperature
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: blue wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: intermittent: -40°C (-40°F) +150°C (+302°F); continuous service: +125°C (+257°F) Max. temperature recommended for water base hydraulic fluids: +120°C (+248°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

NOTES: this hose is a high temperature hydraulic hose but cannot be used with phosphate-ester based oils, and cannot be used in aicrafts and compressors working with air at +60°C

BALFLEX // FORZA UNO - TROPIC <135°C / 275°F> - 1SN - DN6 - DIN EN 853 / SAE 100R1AT / R17 / ISO 1436 - 1/4" - WP 22.5 MPa 3300 PSI - Flame Resistant - MSHA IC-252/08

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FORZA DUE TROPIC



DIN EN 853 2SN / SAE 100R2AT / ISO 1436 – 10.1004.-HT

High pressure, high temperature, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID	OD	MPa				MIN BEND RAD	KG
					mm	mm	MPa	PSI	MPa	PSI	mm	kg/m
2SN-03-HT	10.1004.03HT	DN5	3/16"	-3	4,8	13,4	**41.5**	6100	**165.0**	24400	89	0,32
2SN-04-HT	10.1004.04HT	DN6	1/4"	-4	6,3	14,7	**40.0**	5800	**160.0**	23200	100	0,38
2SN-05-HT	10.1004.05HT	DN8	5/16"	-5	8,0	16,5	**35.0**	5100	**140.0**	20400	114	0,45
2SN-06-HT	10.1004.06HT	DN10	3/8"	-6	9,5	18,7	**33.0**	4800	**132.0**	19200	127	0,53
2SN-08-HT	10.1004.08HT	DN12	1/2"	-8	12,7	21,9	**27.5**	4000	**110.0**	16000	178	0,65
2SN-10-HT	10.1004.10HT	DN16	5/8"	-10	16,0	25,3	**25.0**	3700	**100.0**	14800	200	0,76
2SN-12-HT	10.1004.12HT	DN19	3/4"	-12	19,0	29,3	**21.5**	3200	**86.0**	12800	240	1,00
2SN-16-HT	10.1004.16HT	DN25	1"	-16	25,4	37,9	**16.5**	2400	**65.0**	9600	300	1,48
2SN-20-HT	10.1004.20HT	DN31	1.1/4"	-20	32,0	47,5	**12.5**	1900	**50.0**	7600	419	2,14
2SN-24-HT	10.1004.24HT	DN38	1.1/2"	-24	38,0	54,6	**9.0**	1400	**36.0**	5600	500	2,55
2SN-32-HT	10.1004.32HT	DN51	2"	-32	50,8	67,4	**8.0**	1200	**32.0**	4800	630	3,30

INNER TUBE: seamless oil resistant synthetic rubber resistant to high temperature
REINFORCEMENT: 2 high tensile steel wire braids
OUTER TUBE: blue wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: intermittent: -40°C (-40°F) +150°C (+302°F); continuous service: +125°C (+257°F) Max. temperature recommended for water base hydraulic fluids: +120°C (+248°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

NOTES: this hose is a high temperature hydraulic hose but cannot be used with phosphate-ester based oils, and cannot be used in aicrafts and compressors working with air at +60°C



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Balflex®

BALPAC PREMIUM TROPIC



DIN EN 857 2SC / SAE 100R16 / ISO 11237 – 10.1019.-HT

High pressure, high temperature, double steel braid reinforced hydraulic hose

REFERENCE	#	DN	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
2SC-04-HT	10.1019.04HT	DN6	1/4"	-4	6,3	13,2	**40.0**	5800	**160.0**	23200	50	0,27
2SC-05-HT	10.1019.05HT	DN8	5/16"	-5	8,0	15,1	**35.0**	5100	**140.0**	20400	57	0,30
2SC-06-HT	10.1019.06HT	DN10	3/8"	-6	9,5	17,0	**33.0**	4800	**132.0**	19200	65	0,42
2SC-08-HT	10.1019.08HT	DN12	1/2"	-8	12,7	20,5	**27.6**	4100	**110.4**	16400	90	0,52
2SC-10-HT	10.1019.10HT	DN16	5/8"	-10	16,0	24,2	**25.0**	3700	**100.0**	14800	100	0,63
2SC-12-HT	10.1019.12HT	DN19	3/4"	-12	19,0	28,2	**21.5**	3200	**86.0**	12800	120	0,80
2SC-16-HT	10.1019.16HT	DN25	1"	-16	25,4	35,6	**16.5**	2400	**66.0**	9600	150	1,22

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: blue wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1

TEMPERATURE RANGE: intermittent: -40°C (-40°F) +150°C (+302°F); continuous service: +125°C (+257°F) Max. temperature recommended for water base hydraulic fluids: +120°C (+248°F) Max. temperature recommended for air: +60°C (+140°F)

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules. Balflex® Multicrimp fittings serie BW23/BF21/P23
COVER: U.S. MSHA APPROVED

NOTES: this hose is a high temperature hydraulic hose but cannot be used with phosphate-ester based oils, and cannot be used in aicrafts and compressors working with air at +60°C



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BRAKEMASTER R5R HEATMASTER



SAE 100R5R – 10.1006.-HT

High pressure, high temperature hydraulic hose with steel and textile braid reinforcement with blue pin-pricked rubber cover

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R5R-04-HT	10.1006.04HT	3/16"	-4	4,8	13,2	**20.7**	3100	**82.8**	12400	76	0,19
R5R-05-HT	10.1006.05HT	1/4"	-5	6,3	14,8	**20.7**	3100	**82.8**	12400	86	0,27
R5R-06-HT	10.1006.06HT	5/16"	-6	8,0	17,2	**15.5**	2300	**62.0**	9200	102	0,29
R5R-08-HT	10.1006.08HT	13/32"	-8	10,4	19,5	**13.8**	2100	**55.2**	8400	117	0,36
R5R-10-HT	10.1006.10HT	1/2"	-10	12,7	23,4	**12.1**	1800	**48.3**	7200	140	0,45
R5R-12-HT	10.1006.12HT	5/8"	-12	16,0	27,4	**10.3**	1500	**41.4**	6100	165	0,56
R5R-16-HT	10.1006.16HT	7/8"	-16	22,2	31,4	**5.5**	800	**22.1**	3200	187	0,78
R5R-20-HT	10.1006.20HT	1.1/8"	-20	28,6	38,1	**4.3**	630	**17.2**	2520	229	1,06
R5R-24-HT	10.1006.24HT	1.3/8"	-24	34,9	44,5	**3.4**	500	**13.8**	2000	267	1,45
R5R-32-HT	10.1006.32HT	1.13/16"	-32	46,0	56,4	**2.4**	350	**9.7**	1400	337	1,70
R5R-40-HT	10.1006.40HT	2.3/8"	-40	60,3	73,0	**2.4**	350	**9.7**	1400	610	2,15
R5R-48-HT	10.1006.48HT	3"	-48	76,2	90,5	**1.4**	210	**5.5**	840	838	3,08

INNER TUBE: seamless oil resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic textile braids with an intermediate high tensile steel wire braid

OUTER TUBE: blue wrapped, pin-pricked, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids and hot air in compressors

TEMPERATURE RANGE: intermittent: -40°C (-40°F) +150°C (+302°F); continuous service +125°C (+257°F) Max. temperature recommended for water base hydraulic fluids: +70°C (+158°F) Max. temperature recommended for air: +60°C (+140°F)

COUPLINGS: Balflex® Multicrimp fittings serie P25
NOTES: this hose is a high temperature hydraulic hose but cannot be used with phosphate-ester based oils, and cannot be used in aicrafts and compressors working with air at +60°C



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PTFE Hoses





pag. 72 **BALFLON SAE 100R14**

pag. 72 **BALFLON SAE 100R14**

pag. 73 **BALFLON HEAVY WALL DOUBLE BRAID**

pag. 74 **BALFLON CONVOLUTED (CORRUGATED)**

pag. 75 **BALFLON CONVOLUTED (CORRUGATED) BLACK CONDUCTIVE**

Balflex®

PTFE Hoses

Balflex® Balflon hoses are produced to Balflex® specifications and meet and exceed SAE J517 R14 standard. They cover a wide variety of medium pressure applications, in PTFE, smooth and convoluted with stainless steel reinforcement, for a very large variety of chemical fluids, as well as traditional hydraulic fluids and steam.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.

General Guidelines

Balflex® Balflon hoses are designed with different safety factors relating minimum burst pressure and recommended working pressure.

Balflon hoses are designed for petroleum base hydraulic fluids applications with a temperature range of -70°C (-95°F) to +260°C (+500°F).

Selection, assembly and installation of thermoplastic hoses should follow **Balflex®** recommendations and **SAE J1273** and **DIN 20066** standards. **Balflon hose assemblies should always be inspected and hydraulically tested before installation.** All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

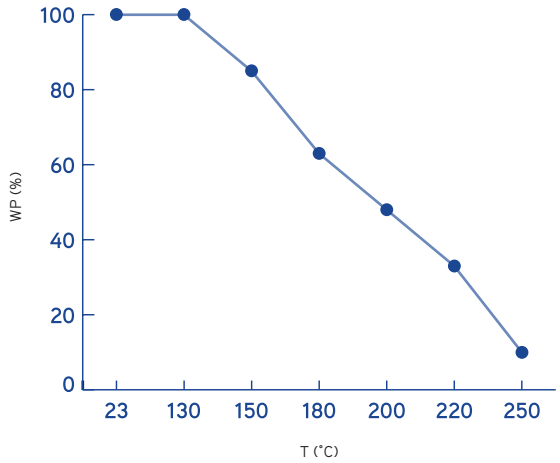
Installations that do not comply with an adequate geometry of the hose assembly may reduce significantly the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose specifications may shorten drastically the hose lifetime.

The failure of an Balflon hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of couplings and it's parts, the whipping of unrestrained hose, spillage of combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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Temperature affects BALFLON smooth PTFE lining hoses pressure rating. For temperatures above 130˚C (266˚F) reduce the working pressure by 0.75% for each 1˚C (33.8˚F)

Temperature		Pressure
Up to 130˚C	Up to 266˚F	100%
150˚C	302˚F	85%
180˚C	356˚F	63%
200˚C	392˚F	48%
220˚C	428˚F	33%
250˚C	482˚F	10%



Temperature affects BALFLON convoluted PTFE hoses pressure rating. For temperatures above 130˚C (266˚F) reduce the working pressure by 1% for each 1˚C (33.8˚F)

Temperature		Pressure
Up to 130˚C	Up to 266˚F	100%
150˚C	302˚F	80%
180˚C	356˚F	50%
200˚C	392˚F	30%
220˚C	428˚F	10%

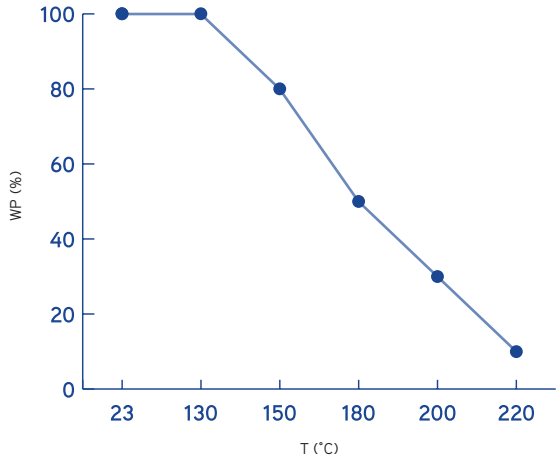


Table 1a: Rated working pressure at 20˚C (+68˚F) of Balflex® Balflon hoses (MPa / PSI)

Balflex	Standard	1/8"	3/16"	1/4"	5/16"	3/8"	13/32"	1/2"	5/8"	3/4"	7/8"	1"	1.1/8"	1.1/4"	1.1/2"	2"
BALFLON R14	SAE 100R14	27.5	20.0	17.5	15.0	13.5	12.0	12.0	10.0	9.0	6.5	6.5	5.5			
		4000	2900	2600	2200	2000	1800	1800	1500	1400	950	950	800			
BALFLON HEAVY WALL DOUBLE BRAID			27.5	25.0	22.5	21.0		17.5	16.0	14.0		9.5				
			4000	3700	3300	3100		2600	2400	2100		1400				
BALFLON CONVOLUTED				16.0	13.5	12.0		11.0	8.0	7.0		5.0		4.5	4.0	3.6
				2400	2000	1800		1600	1200	1100		730		660	580	530

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Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20°C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20°C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20°C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20°C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1 MPa = 10,0 bar

Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F°	C° x 1,8 + 32	F° (Fahrenheit)
C°	(F° - 32): 1,8	C° (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4 mm
Example: : +100°C = +212°F

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Fluid Compatibility and Resistance Chart for Balflex PTFE Hoses

● Recommended ● Recommended with Restrictions ● Not Recommended

Acetic Acid	●	Ethyl Glycol	●	Oil of Turpentine	
Acetic Acid (30%)	●	Ethyleneoxide		Oleic Acid	●
Acetone	●	Fluorine		Oxalic Acid	●
Acetylene	●	Formaldehyde	●	Perchloroethylene	●
Ammonia, Gas (Hot)		Formaldehyde 40%		Phenol	●
Ammonia, Liquid		Fuel Oil	●	Phosphoric Acid (10%)	●
Ammoniumchloride	●	Gaseous Hydrogen		Phosphoric Acid (70%)	●
Amyl Acetate	●	Gasoline	●	Phosphate Ester Base Oil	●
Aniline	●	Glycerin / Glycerol	●	Saturated Steam	●
Animal Oils		Glycol to 66°C	●	Sea Water	●
Benzol / Benzene		Hexane		Silicone Oils	●
Butane	●	Hydraulic Oil	●	Soap Solutions	●
Butyl Acetate	●	Hydrochloric Acid 37%		Soda	●
Butyl Alcohol / Butanol	●	Hydroger Peroxide (Dil.)		Sodium Chloride Solutions	●
Calcium Chloride Solutions	●	Hydroger Peroxide (Conc.)		Sodium Hydroxide 20%	●
Carbon Dioxide		Isocyanates		Sodium Hypochloryde 10%	●
Carbon Disulfide		Isopropil Alcohol	●	Sulphur	
Carbonates		Kerosene	●	Sulphur Dioxide	
Caustic Soda	●	Liquid Oxygen	●	Sulphuric Acid up to 50%	●
Chlorinated Solvents		LPG	●	Sulphuric Acid above 50%	●
Chlorine		Lubricating Oils	●	Toluene	●
Chloroform	●	Mercury	●	Trichloroethylene	●
Citric and Solutions	●	Methyl Alcohol / Methanol		Vegetable Greases	●
Compressed Air	●	Methyl Chloride (Cold)		Water	●
Cyclohexane	●	Methyl Ethyl Khetone	●	Xylene	●
Crude Petroleum Oil		Mineral Oils	●		
Dioctyl Phthalate		Naphtha	●		
Diesel Fuel	●	Naphthalene	●		
Ethers		Natural Gas	●		
Ethyl Acetate	●	Nitric Acid (Dil.)	●		
Ethyl Alcohol	●	Nitric Acid (Conc.)	●		
Ethyl Chloride		Nitrobenzen	●		

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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Balflex®

BALFLON SAE 100R14



SAE 100R14 - 10.2003. - European size

High pressure, standard wall, single steel wire reinforced hydraulic hose with smooth PTFE lining

REFERENCE	#	inch	DN	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R14-02-TB	10.2001.02	1/8"	-2	3,2	5,9	**27.5**	4000	**110.0**	16000	40	0,06
R14-03-TB	10.2003.03	3/16"	-3	4,8	7,4	**20,0**	2900	**80,0**	11600	50	0,08
R14-04-TB	10.2003.04	1/4"	-4	6,3	9,0	**17,5**	2600	**70,0**	10400	75	0,09
R14-05-TB	10.2003.05	5/16"	-5	8,0	10,8	**15,0**	2200	**60,0**	8800	100	0,14
R14-06-TB	10.2003.06	3/8"	-6	9,5	12,4	**13,5**	2000	**54,0**	8000	125	0,16
R14-08-TB	10.2003.08	1/2"	-8	12,7	15,7	**12,0**	1800	**48,0**	7200	165	0,21
R14-10-TB	10.2003.10	5/8"	-10	16,0	19,1	**10,0**	1500	**40,0**	6100	200	0,27
R14-12-TB	10.2003.12	3/4"	-12	19,0	22,2	**9,0**	1400	**36,0**	5600	280	0,37
R14-16-TB	10.2003.16	1"	-16	25,4	29,3	**6,5**	950	**26,0**	3800	400	0,49

INNER TUBE: seamless smooth polytetrafluorethylene (PTFE)
OUTER TUBE: 1 stainless steel wire braid
SAFETY FACTOR: 4:1

APPLICATION: water base, petroleum base or synthetic base hydraulic fluids, corrosive, food liquids and high temperature gases and liquids

TEMPERATURE RANGE: -70°C (-95°F) +260°C (+500°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

AVAILABLE VERSIONS: Black Conductive
NOTE: Operating temperatures in excess of +204°C with petroleum base hydraulic fluids can materially reduce the life of the hose.

BALFLON SAE 100R14



SAE 100R14 - 10.2000. - SAE Dash Size

High pressure, standard wall, single steel wire reinforced hydraulic hose with smooth PTFE lining

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R14-03	10.2001.03	1/8"	-3	3,2	5,9	**27.5**	4000	**110.0**	16000	40	0,07
R14-04	10.2000.04	3/16"	-4	4,8	7,4	**20,0**	2900	**80,0**	11600	50	0,08
R14-05	10.2000.05	1/4"	-5	6,3	9,0	**17,5**	2600	**70,0**	10400	75	0,09
R14-06	10.2000.06	5/16"	-6	8,0	10,8	**15,0**	2200	**60,0**	8800	100	0,14
R14-08	10.2000.08	13/32"	-8	10,3	13,3	**13,0**	1900	**54,0**	7600	130	0,17
R14-10	10.2000.10	1/2"	-10	12,7	15,7	**12.0**	1800	**48.0**	7200	165	0,21
R14-12	10.2000.12	5/8"	-12	16,0	19,1	**10,0**	1500	**40,0**	6100	200	0,27
R14-16	10.2000.16	7/8"	-16	22,0	25,6	**6,5**	950	**26,0**	3800	350	0,51
R14-20	10.2000.20	1.1/8"	-20	28,6	32,5	**5,5**	800	**22,0**	3200	450	0,53

INNER TUBE: seamless smooth polytetrafluorethylene (PTFE)
OUTER TUBE: 1 stainless steel wire braid
SAFETY FACTOR: 4: 1

APPLICATION: water base, petroleum base or synthetic base hydraulic fluids, corrosive, food liquids and high temperature gases and liquids

TEMPERATURE RANGE: -70°C (-95°F) +260°C (+500°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules.

AVAILABLE VERSIONS: Black Conductive
NOTE: Operating temperatures in excess of +204°C with petroleum base hydraulic fluids can materially reduce the life of the hose.

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BALFLON HEAVY WALL DOUBLE BRAID



10.2002.

High pressure, heavy wall, double steel wire reinforced hydraulic hose with smooth PTFE lining

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R14-03-DB	10.2002.03	3/16"	-3	4,8	8,8	**27,5**	4000	**110,0**	16000	45	0,14
R14-04-DB	10.2002.04	1/4"	-4	6,3	10,4	**25,0**	3700	**100,0**	14800	50	0,17
R14-05-DB	10.2002.05	5/16"	-5	8,0	12,0	**22,5**	3300	**90,0**	13200	55	0,24
R14-06-DB	10.2002.06	3/8"	-6	9,5	13,7	**21,0**	3100	**84,0**	12400	70	0,26
R14-08-DB	10.2002.08	1/2"	-8	12,7	17,0	**17,5**	2600	**70,0**	10400	110	0,35
R14-10-DB	10.2002.10	5/8"	-10	16,0	20,5	**16,0**	2400	**64,0**	9600	150	0,50
R14-12-DB	10.2002.12	3/4"	-12	19,0	23,5	**14,0**	2100	**56,0**	8400	190	0,62
R14-16-DB	10.2002.16	1"	-16	25,4	30,8	**9,5**	1400	**38,0**	5600	270	0,77

INNER TUBE: seamless smooth polytetrafluorethylene (PTFE)
OUTER TUBE: 2 stainless steel wire braids
SAFETY FACTOR: 4:1

APPLICATION: water base, petroleum base or synthetic base hydraulic fluids, corrosive, food liquids and high temperature gases and liquids

TEMPERATURE RANGE: -70°C (-95°F) +260°C (+500°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules.

AVAILABLE VERSIONS: Black Conductive
NOTE: Operating temperatures in excess of +204°C with petroleum base hydraulic fluids can materially reduce the life of the hose

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Balflex®

BALFLON CONVOLUTED (CORRUGATED)



10.2010.

High pressure, single Stainless Steel wire braid reinforced corrugated PTFE hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R14-04-CV	10.2010.04	1/4"	-4	6,5	11,5	**16,0**	2400	**64,0**	9600	20	0,10
R14-05-CV	10.2010.05	5/16"	-5	8,1	12,3	**13,5**	2000	**54,0**	8000	30	0,17
R14-06-CV	10.2010.06	3/8"	-6	9,7	15,6	**12,0**	1800	**48,0**	7200	30	0,20
R14-08-CV	10.2010.08	1/2"	-8	12,7	18,9	**11,0**	1600	**44,0**	6400	40	0,27
R14-10-CV	10.2010.10	5/8"	-10	16,0	22,2	**8,0**	1200	**32,0**	4800	50	0,33
R14-12-CV	10.2010.12	3/4"	-12	19,1	26,4	**7,0**	1100	**28,0**	4400	80	0,47
R14-16-CV	10.2010.16	1"	-16	25,4	33,0	**5,0**	730	**20,0**	2920	100	0,63
R14-20-CV	10.2010.20	1.1/4"	-20	32,0	40,5	**4,5**	660	**18,0**	2640	120	0,98
R14-24-CV	10.2010.24	1.1/2"	-24	39,0	47,0	**4,0**	580	**16,0**	2320	140	0,30
R14-32-CV	10.2010.32	2"	-32	51,0	61,2	**3,6**	530	**14,4**	2120	175	1,20

INNER TUBE: seamless corrugated polytetrafluorethylene (PTFE)
OUTER TUBE: 1 stainless steel wire braid
SAFETY FACTOR: 4:1

APPLICATION: water base, petroleum base or synthetic base hydraulic fluids, corrosive, food liquids and high temperature gases and liquids

TEMPERATURE RANGE: -70°C (-95°F) +260°C (+500°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules.

NOTE: Operating temperatures in excess of +204°C with petroleum base hydraulic fluids can materially reduce the life of the hose.

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BALFLON CONVOLUTED (CORRUGATED) BLACK CONDUCTIVE



10.2010.B

High pressure, single Stainless Steel wire braid reinforced black conductive corrugated PTFE hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R14-04-CV-B	10.2010.04B	1/4"	-4	6,5	11,5	**16,0**	2400	**64,0**	9600	20	0,10
R14-05-CV-B	10.2010.05B	5/16"	-5	8,1	12,3	**13,5**	2000	**54,0**	8000	30	0,17
R14-06CV-B	10.2010.06B	3/8"	-6	9,7	15,6	**12,0**	1800	**48,0**	7200	30	0,20
R14-08CV-B	10.2010.08B	1/2"	-8	12,7	18,9	**11,0**	1600	**44,0**	6400	40	0,27
R14-10CV-B	10.2010.10B	5/8"	-10	16,0	22,2	**8,0**	1200	**32,0**	4800	50	0,33
R14-12CV-B	10.2010.12B	3/4"	-12	19,1	26,4	**7,0**	1100	**28,0**	4400	80	0,47
R14-16CV-B	10.2010.16B	1"	-16	25,4	33,0	**5,0**	730	**20,0**	2920	100	0,63
R14-20CV-B	10.2010.20B	1.1/4"	-20	32,0	40,5	**4,5**	660	**18,0**	2640	120	0,98
R14-24CV-B	10.2010.24B	1.1/2"	-24	39,0	47,0	**4,0**	580	**16,0**	2320	140	0,30
R14-32CV-B	10.2010.32B	2"	-32	51,0	61,2	**3,6**	530	**14,4**	2120	175	1,20

INNER TUBE: seamless black conductive corrugated polytetrafluorethylene (PTFE)
OUTER TUBE: 1 stainless steel wire braid
SAFETY FACTOR: 4:1

APPLICATION: water base, petroleum base or synthetic base hydraulic fluids, corrosive, food liquids and high temperature gases and liquids

TEMPERATURE RANGE: -70°C (-95°F) +260°C (+500°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules.

NOTE: Operating temperatures in excess of +204°C with petroleum base hydraulic fluids can materially reduce the life of the hose.

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Balflex®

Thermoplastic Hoses

Balflex® Thermoplastic hoses are produced to Balflex® specifications and according to ISO 3949, SAE J517 and EN 855 standards. They cover a wide variety of medium to high pressure applications, in thermoplastic, textile and steel reinforcement, for petroleum and water base hydraulic fluids.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.
highest performance and the most extensive range of applications.

General Guidelines

Balflex® thermoplastic hoses are designed with different safety factors relating minimum burst pressure and recommended working pressure. Working pressure and nominal diameter are always branded on the hose.

Thermoplastic hoses are designed for petroleum base hydraulic fluids applications with a temperature range of –40°C (-40°F) to +100°C (+100°F). Thermoplastic hoses may also be used for water base hydraulic fluids if the working temperature does not exceed +65°C (+149°F).

Selection, assembly and installation of thermoplastic hoses should follow **Balflex®** recommendations and **SAE J1273** and **DIN 20066** standards. **Thermoplastic hose assemblies should always be inspected and hydraulically tested before installation.** All hydraulics systems should be tested against leakage and malfunction in an appropriate area after any intervention.

Installations that do not comply with an adequate geometry of the hose assembly may reduce significantly the lifetime of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system where working characteristics exceed the hose specifications may shorten drastically the hose lifetime.

The failure of a thermoplastic hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projections of hydraulic fluid, the projection of couplings and it's parts, the whipping of unrestrained hose, spillage of combustion of the fluid, electrical shocks through contact with electrical sources, immovability, fall or sudden movement of masses controlled by the hydraulic system.

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Table 1a: Rated working pressure at 20°C (+68°F) of Balflex® Thermoplastic hoses (MPa / PSI)

Balflex	Standard	1/8" -2 DN3	53/16" -3 DN5	1/4" -4 DN6	5/16" -5 DN8	3/8" -6 DN10	1/2" -8 DN12	5/8" -10 DN16	3/4" -12 DN19	1" -16 DN25
ZETAFLEX ZETAFLEX TWIN ZETAFLEX NC ZETAFLEX NC TWIN	DIN EN 855 R7 / SAE 100R7 / ANSI A92.2	28.0	21.0	19.2	19.0	16.0	15.5	10.5	9.0	7.0
		4100	3100	2800	2800	2400	2300	1600	1400	1100
ZETAFLEX STEEL ZETAFLEX STEEL TWIN		35.0	30.0	27.5	24.0	22.0	17.5	14.0	11.5	10.0
		5100	4400	4000	3500	3200	2600	2100	1700	1500
OMEGALFEX PLUS OMEGAFLEX PLUS TWIN OMEGALFEX PLUS NC OMEGAFLEX PLUS NC TWIN	DIN EN 855 R8 / SAE 100R8		35.0	35.0	30.	28.0	24.5	20.0	16.5	14.0
			5100	5100	4300	4100	3600	2800	2300	2100
OMEGALFEX OMEGAFLEX TWIN OMEGAFLEX NC OMEGAFLEX NC TWIN	DIN EN 855 R8 / SAE 100R8		35.0	35.0	30.	28.0	24.5	20.0	16.5	14.0
			5100	5100	4300	4100	3600	2800	2300	2100
ZETAFLEX 3000 ZETAFLEX 3000 TWIN ZETAFLEX 3000 NC ZETAFLEX 3000 NC TWIN	SAE 100R18		21.0	21.0	21.0	21.0	21.0	21.0	21.0	21.0
			3000	3000	3000	3000	3000	3000	3000	3000

Table 2: Pressure Conversion

bar	0,00134	0,0025	0,0339	0,069	0,098	**1,00**	1,01	10,0	100
PSI	0,0194	0,036	0,492	**1,001**	1,421	14,504	14,69	145,04	1450,38
MPa	-	-	0,003	0,007	0,0098	0,10	0,101	**1,00**	10,00
1 atm	0,001	0,0025	0,0335	0,068	0,097	0,987	**1**	9,87	98,69
m H20 (20°C)	0,014	0,026	0,346	0,704	**1**	10,207	10,34	102,074	3.4
in Hg (20°C)	0,0396	0,074	**1,001**	2,04	2,89	29,53	29,91	295,3	3.4
in H20 (20°C)	0,538	**1,005**	13,623	27,73	39,38	401,86	407,09	4018,65	40186,47
mm Hg (20°C)	**1,005**	1,88	25,43	51,75	73,51	750,06	759,81	7500,62	75006,17

Example: 1 MPa = 145,04 PSI ; 1 MPa = 10,0 bar

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Table 3: Conversion Factors

Unit	Factor	Converted Unit
1 m (meter)	1000	mm (millimeter)
1 m (meter)	1,09362	yard
1 m (meter)	3,28084	foot
1 mm (millimeter)	0,001	m (meter)
1 mm (millimeter)	0,03937	Inch
1 inch	25,4	mm (millimeter)
1 inch	0,0254	m (meter)
1 foot	0,3048	m (meter)
1 yard	0,9144	m (meter)
F°	C° x 1,8 + 32	F° (Fahrenheit)
C°	(F° - 32): 1,8	C° (Celsius)

Example: : 1 m = 3,28084 feet ; 1 inch = 25,4 mm
Example: : +100°C = +212°F

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Fluid Compatibility and Resistance Chart for Balflex Thermoplastic Hoses

● Recommended ● Recommended with Restrictions ● Not Recommended

Acetic Acid	●	Ethyl Glycol	●	Oil of Turpentine	●
Acetic Acid (30%)	●	Ethyleneoxide	●	Oleic Acid	●
Acetone	●	Fluorine	●	Oxalic Acid	●
Acetylene	●	Formaldehyde	●	Perchloroethylene	●
Ammonia, Gas (Hot)		Formaldehyde 40%	●	Phenol	●
Ammonia, Liquid	●	Fuel Oil	●	Phosphoric Acid (10%)	
Ammoniumchloride	●	Gaseous Hydrogen	●	Phosphoric Acid (70%)	●
Amyl Acetate		Gasoline		Phosphate Ester Base Oil	●
Aniline	●	Glycerin / Glycerol	●	Saturated Steam	●
Animal Oils	●	Glycol to 66°C	●	Sea Water	●
Benzol / Benzene	●	Hexane	●	Silicone Oils	
Butane	●	Hydraulic Oil	●	Soap Solutions	●
Butyl Acetate		Hydrochloric Acid 37%	●	Soda	●
Butyl Alcohol / Butanol		Hydroger Peroxide (Dil.)		Sodium Chloride Solutions	●
Calcium Chloride Solutions	●	Hydroger Peroxide (Conc.)		Sodium Hydroxide 20%	
Carbon Dioxide		Isocyanates	●	Sodium Hypochloryde 10%	
Carbon Disulfide		Isopropil Alcohol		Sulphur	●
Carbonates		Kerosene	●	Sulphur Dioxide	
Caustic Soda	●	Liquid Oxygen		Sulphuric Acid up to 50%	●
Chlorinated Solvents		LPG		Sulphuric Acid above 50%	●
Chlorine	●	Lubricating Oils	●	Toluene	●
Chloroform	●	Mercury	●	Trichloroethylene	●
Citric and Solutions	●	Methyl Alcohol / Methanol	●	Vegetable Greases	
Compressed Air	●	Methyl Chloride (Cold)	●	Water	●
Cyclohexane	●	Methyl Ethyl Khetone	●	Xylene	●
Crude Petroleum Oil	●	Mineral Oils	●		
Dioctyl Phthalate	●	Naphtha	●		
Diesel Fuel	●	Naphthalene	●		
Ethers		Natural Gas	●		
Ethyl Acetate		Nitric Acid (Dil.)	●		
Ethyl Alcohol	●	Nitric Acid (Conc.)	●		
Ethyl Chloride		Nitrobenzen	●		

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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ZETAFLEX



DIN EN 855 R7 / SAE 100R7 - 10.1030.

High pressure, synthetic polyester braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R7-02	10.1030.02	1/8"	-2	3,2	8,1	**28.0**	4100	**112.0**	16400	25	0,05
R7-03	10.1030.03	3/16"	-3	4,8	10,3	**21.0**	3100	**84.0**	12400	25	0,07
R7-04	10.1030.04	1/4"	-4	6,4	12,4	**19.2**	2800	**76.8**	11200	32	0,09
R7-05	10.1030.05	5/16"	-5	8,0	14,2	**19.0**	2800	**76.0**	11200	45	0,13
R7-06	10.1030.06	3/8"	-6	9,5	15,7	**16.0**	2400	**64.0**	9600	55	0,16
R7-08	10.1030.08	1/2"	-8	12,7	19,3	**15,5**	2300	**62,0**	9200	77	0,22
R7-10	10.1030.10	5/8"	-10	16,0	23,1	**10.5**	1600	**42.0**	6400	110	0,28
R7-12	10.1030.12	3/4"	-12	19,0	26,4	**9.0**	1400	**36.0**	5600	140	0,33
R7-16	10.1030.16	1"	-16	25,4	33,3	**7.0**	1100	**28.0**	4400	200	0,40

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile polyester braid

OUTER TUBE: black, oil and weather resistant polyurethane, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
NOTE: Size -2 (1/8") not included in the standards.

BALFLEX ZETAFLEX - DIN EN 855 / SAE 100R7 / ISO 3949 - DN3 - 1/8" - WP 28 MPa / 4100 PSI

ZETAFLEX TWIN



DIN EN 855 R7 / SAE 100R7 / ISO 3949 - 10.1034.

High pressure, synthetic polyester braid reinforced thermoplastic hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R7-03-TB	10.1034.03	3/16"	-3	4,8	10,3	**21.0**	3100	**84.0**	12400	25	0,07
R7-04-TB	10.1034.04	1/4"	-4	6,4	12,4	**19.2**	2800	**76.8**	11200	32	0,09
R7-05-TB	10.1034.05	5/16"	-5	8,0	14,2	**19.0**	2800	**76.0**	11200	45	0,13
R7-06-TB	10.1034.06	3/8"	-6	9,5	15,7	**16.0**	2400	**64.0**	9600	55	0,16
R7-08-TB	10.1034.08	1/2"	-8	12,7	19,3	**15,5**	2300	**62,0**	9200	77	0,22
R7-10-TB	10.1034.10	5/8"	-10	16,0	23,1	**10.5**	1600	**42.0**	6400	110	0,28
R7-12-TB	10.1034.12	3/4"	-12	19,0	26,4	**9.0**	1400	**36.0**	5600	140	0,33
R7-16-TB	10.1034.16	1"	-16	25,4	33,3	**7.0**	1100	**28.0**	4400	200	0,40

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 1 high tensile polyester braid

OUTER TUBE: black, oil and weather resistant polyurethane, pin-pricked
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

BALFLEX ZETAFLEX - DIN EN 855 / SAE 100R7 / ISO 3949 - DN5 - 3/16" - WP 21 MPa / 3100 PSI

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ZETAFLEX NON CONDUCTIVE



DIN EN 855 R7 / SAE 100R7 / ANSI A92.2 / ISO 3949 - 10.1030.L

High pressure, synthetic fiber braid reinforced thermoplastic Non Conductive hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R7-02LNC	10.1030.02L	1/8"	-2	3,2	8,1	**28.0**	4100	**112.0**	16400	25	0,05
R7-03LNC	10.1030.03L	3/16"	-3	4,8	10,3	**21.0**	3100	**84.0**	12400	25	0,07
R7-04LNC	10.1030.04L	1/4"	-4	6,4	12,4	**19.2**	2800	**76.8**	11200	32	0,09
R7-05LNC	10.1030.05L	5/16"	-5	8,0	14,2	**19.0**	2800	**76.0**	11200	45	0,13
R7-06LNC	10.1030.06L	3/8"	-6	9,5	15,7	**16.0**	2400	**64.0**	9600	55	0,16
R7-08LNC	10.1030.08L	1/2"	-8	12,7	19,3	**15,5**	2300	**62,0**	9200	77	0,22
R7-10LNC	10.1030.10L	5/8"	-10	16,0	23,1	**10.5**	1600	**42.0**	6400	110	0,28
R7-12LNC	10.1030.12L	3/4"	-12	19,0	26,4	**9.0**	1400	**36.0**	5600	140	0,33
R7-16LNC	10.1030.16L	1"	-16	25,4	33,3	**7.0**	1100	**28.0**	4400	200	0,40

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 1 high tensile polyester braid

OUTER TUBE: orange, oil and weather resistant polyurethane, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules
NOTE: Size -2 (1/8") not included in the standards.

BALFLEX ZETAFLEX - NON CONDUCTIVE - DIN EN 855 / SAE 100R7 - DN3 - 1/8" - WP 28 MPa / 4060 PSI - [ANSI A92.2 - WP 20.7 MPa / 3000 PSI]

ZETAFLEX NON CONDUCTIVE TWIN



DIN EN 855 R7 / SAE 100R7 / ANSI A92.2 / ISO 3949 - 10.1034.L

High pressure, synthetic fiber braid reinforced thermoplastic Non Conductive hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R7-03TNC	10.1034.03L	3/16"	-3	4,8	10,3	**21.0**	3100	**84.0**	12400	25	0,07
R7-04TNC	10.1034.04L	1/4"	-4	6,4	12,4	**19.2**	2800	**76.8**	11200	32	0,09
R7-05TNC	10.1034.05L	5/16"	-5	8,0	14,2	**19.0**	2800	**76.0**	11200	45	0,13
R7-06TNC	10.1034.06L	3/8"	-6	9,5	15,7	**16.0**	2400	**64.0**	9600	55	0,16
R7-08TNC	10.1034.08L	1/2"	-8	12,7	19,3	**15,5**	2300	**62,0**	9200	77	0,22
R7-10TNC	10.1034.10L	5/8"	-10	16,0	23,1	**10.5**	1600	**42.0**	6400	110	0,28
R7-12TNC	10.1034.12L	3/4"	-12	19,0	26,4	**9.0**	1400	**36.0**	5600	140	0,33
R7-16TNC	10.1034.16L	1"	-16	25,4	33,3	**7.0**	1100	**28.0**	4400	200	0,40

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile polyester braid

OUTER TUBE: orange, oil and weather resistant polyurethane, pin-pricked
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

BALFLEX ZETAFLEX - NON CONDUCTIVE - DIN EN 855 / SAE 100R7 / ISO 3949 - DN5 - 3/16" - WP 21 MPa / 3100 PSI - [ANSI A92.2 - WP 20.7 MPa / 3000 PSI]

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Balflex®

ZETAFLEX STEEL



R7 SteelFlex - 10.1031.

High pressure, steel wire braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R7-02-S	10.1031.02	1/8"	-2	3,2	7,1	**35.0**	5100	**140.0**	20400	25	0,10
R7-03-S	10.1031.03	3/16"	-3	4,8	9,7	**30.0**	4400	**120.0**	17600	30	0,13
R7-04-S	10.1031.04	1/4"	-4	6,4	11,7	**27.5**	4000	**110.0**	16000	40	0,17
R7-05-S	10.1031.05	5/16"	-5	8,0	13,6	**24.0**	3500	**96.0**	14000	50	0,22
R7-06-S	10.1031.06	3/8"	-6	9,5	15,2	**22.0**	3200	**88.0**	12800	60	0,26
R7-08-S	10.1031.08	1/2"	-8	12,7	18,4	**17.5**	2600	**70.0**	10400	75	0,39
R7-10-S	10.1031.10	5/8"	-10	16,0	22,2	**14.0**	2100	**56.0**	8400	110	0,41
R7-12-S	10.1031.12	3/4"	-12	19,0	25,9	**11.5**	1700	**46.0**	6800	150	0,45
R7-16-S	10.1031.16	1"	-16	25,4	32,4	**10.0**	1500	**40.0**	6100	230	0,62

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile steel wire braid

OUTER TUBE: black, oil and weather resistant thermoplastic
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX ZETAFLEX - STEEL - EXCEEDS SAE 100R7 - DN3 - 1/8" - WP 35 MPa / 5100 PSI

ZETAFLEX STEEL TWIN



R7 SteelFlex TWIN – 10.1035.

High pressure, steel wire braid reinforced thermoplastic hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R7-03-ST	10.1035.03	3/16"	-3	4,8	9,7	**30.0**	4400	**120.0**	17600	30	0,13
R7-04-ST	10.1035.04	1/4"	-4	6,4	11,7	**27.5**	4000	**110.0**	16000	40	0,17
R7-05-ST	10.1035.05	5/16"	-5	8,0	13,6	**24.0**	3500	**96.0**	14000	50	0,22
R7-06-ST	10.1035.06	3/8"	-6	9,5	15,2	**22.0**	3200	**88.0**	12800	60	0,26
R7-08-ST	10.1035.08	1/2"	-8	12,7	18,4	**17.5**	2600	**70.0**	10400	75	0,39
R7-10-ST	10.1035.10	5/8"	-10	16,0	22,2	**14.0**	2100	**56.0**	8400	110	0,41
R7-12-ST	10.1035.12	3/4"	-12	19,0	25,9	**11.5**	1700	**46.0**	6800	150	0,45
R7-16-ST	10.1035.16	1"	-16	25,4	32,4	**10.0**	1500	**40.0**	6100	230	0,62

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile steel wire braid

OUTER TUBE: black, oil and weather resistant thermoplastic
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX ZETAFLEX - STEEL - EXCEEDS SAE 100R7 - DN5 - 3/16" - WP 30 MPa / 4400 PSI

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OMEGAFLEX PLUS



DIN EN 855 R8 / SAE 100R8 / ISO 3949 - 10.1033.

High pressure, single aramid braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R8-03	10.1033.03	3/16"	-3	4,8	10,3	**35.0**	5100	**140.0**	20400	25	0,09
R8-04	10.1033.04	1/4"	-4	6,4	12,4	**35.0**	5100	**140.0**	20400	32	0,10
R8-05	10.1033.05	5/16"	-5	8,0	14,2	**30.0**	4300	**120.0**	17200	45	0,13
R8-06	10.1033.06	3/8"	-6	9,5	15,7	**28.0**	4100	**112.0**	16400	55	0,18
R8-08	10.1033.08	1/2"	-8	12,7	19,3	**24.5**	3600	**98.0**	14400	77	0,22
R8-10	10.1033.10	5/8"	-10	16,0	23,1	**20.0**	2800	**80.0**	11200	110	0,31
R8-12	10.1033.12	3/4"	-12	19,0	26,4	**16.5**	2300	**66.0**	9200	140	0,36
R8-16	10.1033.16	1"	-16	25,4	33,3	**14.0**	2100	**56.0**	8400	200	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile aramidic fiber braid

OUTER TUBE: black, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX OMEGAFLEX PLUS - DIN EN 855 / SAE 100R8 / ISO 3949 - DN5 - 3/16" - ARAMID - WP 35 MPa / 5100 PSI

OMEGAFLEX PLUS TWIN LINE



DIN EN 855 R8 / SAE 100R8 / ISO 3949 - 10.1136.

High pressure, single aramidic braid reinforced thermoplastic hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R8-03-TB	10.1136.03	3/16"	-3	4,8	10,3	**35.0**	5100	**140.0**	20400	25	0,09
R8-04-TB	10.1136.04	1/4"	-4	6,4	12,4	**35.0**	5100	**140.0**	20400	32	0,10
R8-05-TB	10.1136.05	5/16"	-5	8,0	14,2	**30.0**	4300	**120.0**	17200	45	0,13
R8-06-TB	10.1136.06	3/8"	-6	9,5	15,7	**28.0**	4100	**112.0**	16400	55	0,18
R8-08-TB	10.1136.08	1/2"	-8	12,7	19,3	**24.5**	3600	**98.0**	14400	77	0,22
R8-10-TB	10.1136.10	5/8"	-10	16,0	23,1	**20.0**	2800	**80.0**	11200	110	0,31
R8-12-TB	10.1136.12	3/4"	-12	19,0	26,4	**16.5**	2300	**66.0**	9200	140	0,36
R8-16-TB	10.1136.16	1"	-16	25,4	33,3	**14.0**	2100	**56.0**	8400	200	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile aramidic fiber braid

OUTER TUBE: black, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

BALFLEX OMEGAFLEX PLUS - DIN EN 855 / SAE 100R8 - DN6 - 1/4" - ARAMID - WP 35 MPa / 5100 PSI

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OMEGALFLEX PLUS
(NON CONDUCTIVE)



DIN EN 855 R8 / SAE 100R8 / ISO 3949 - 10.1033.L

High pressure, single aramidic braid reinforced thermoplastic Non Conductive hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R8-03LNC	10.1033.03L	3/16"	-3	4,8	10,3	**35.0**	5100	**140.0**	20400	25	0,09
R8-04LNC	10.1033.04L	1/4"	-4	6,4	12,4	**35.0**	5100	**140.0**	20400	32	0,10
R8-05LNC	10.1033.05L	5/16"	-5	8,0	14,2	**30.0**	4300	**120.0**	17200	45	0,13
R8-06LNC	10.1033.06L	3/8"	-6	9,5	15,7	**28.0**	4100	**112.0**	16400	55	0,18
R8-08LNC	10.1033.08L	1/2"	-8	12,7	19,3	**24.5**	3600	**98.0**	14400	77	0,22
R8-10LNC	10.1033.10L	5/8"	-10	16,0	23,1	**20.0**	2800	**80.0**	11200	110	0,31
R8-12LNC	10.1033.12L	3/4"	-12	19,0	26,4	**16.5**	2300	**66.0**	9200	140	0,36
R8-16LNC	10.1033.16L	1"	-16	25,4	33,3	**14.0**	2100	**56.0**	8400	200	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile aramidic fiber braid

OUTER TUBE: orange, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX OMEGAFLEX PLUS - NON CONDUCTIVE - ANSI A92.2 - DIN EN 855 / SAE 100R8 / ISO 3949 - DN5 - 3/16" - ARAMID - WP 35 MPa / 5100 PSI

OMEGAFLEX PLUS TWIN
(NON CONDUCTIVE)



DIN EN 855 R8 / SAE 100R8 / ISO 3949 - 10.1136.L

High pressure, single aramidic braid reinforced thermoplastic Non Conductive hydraulic twin line hoses

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R8-03TNC	10.1136.03L	3/16"	-3	4,8	10,3	**35.0**	5100	**140.0**	20400	25	0,09
R8-04TNC	10.1136.04L	1/4"	-4	6,4	12,4	**35.0**	5100	**140.0**	20400	32	0,10
R8-05TNC	10.1136.05L	5/16"	-5	8,0	14,2	**30.0**	4300	**120.0**	17200	45	0,13
R8-06TNC	10.1136.06L	3/8"	-6	9,5	15,7	**28.0**	4100	**112.0**	16400	55	0,18
R8-08TNC	10.1136.08L	1/2"	-8	12,7	19,3	**24.5**	3600	**98.0**	14400	77	0,22
R8-10TNC	10.1136.10L	5/8"	-10	16,0	23,1	**20.0**	2800	**80.0**	11200	110	0,31
R8-12TNC	10.1136.12L	3/4"	-12	19,0	26,4	**16.5**	2300	**66.0**	9200	140	0,36
R8-16TNC	10.1136.16L	1"	-16	25,4	33,3	**14.0**	2100	**56.0**	8400	200	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile aramidic fiber braid

OUTER TUBE: orange, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX OMEGAFLEX PLUS - NON CONDUCTIVE - ANSI A92.2 - DIN EN 855 / SAE 100R8 / ISO 3949 - DN5 - 3/16" - ARAMID - WP 35 MPa / 5100 PSI

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OMEGAFLEX



DIN EN 855 R8 / SAE 100R8 - 10.1032.

High pressure, double polyester braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R82P-03	10.1032.03	3/16"	-3	4,8	12,4	**35.0**	5100	**140.0**	20400	40	0,09
R82P-04	10.1032.04	1/4"	-4	6,4	16,1	**35.0**	5100	**140.0**	20400	45	0,10
R82P-05	10.1032.05	5/16"	-5	8,0	16,7	**29.0**	4300	**116.0**	17200	55	0,13
R82P-06	10.1032.06	3/8"	-6	9,5	18,5	**28.0**	4100	**112.0**	16400	65	0,18
R82P-08	10.1032.08	1/2"	-8	12,7	22,6	**24.5**	3600	**98.0**	14400	77	0,22
R82P-10	10.1032.10	5/8"	-10	16,0	25,6	**19.0**	2800	**76.0**	11200	100	0,31
R82P-12	10.1032.12	3/4"	-12	19,0	28,6	**15.5**	2300	**62.0**	9200	140	0,36
R82P-16	10.1032.16	1"	-16	25,4	35,8	**14.0**	2100	**56.0**	8400	200	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile polyester braids

OUTER TUBE: black, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX OMEGAFLEX - DIN EN 855 / SAE 100R8 - DN5 - 3/16" - POLYESTER - WP 35 MPa / 5100 PSI

OMEGAFLEX TWIN



DIN EN 855 R8 / SAE 100R8 - 10.1036.

High pressure, double polyester braid reinforced thermoplastic hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R82P-03LNC	10.1036.03	3/16"	-3	4,8	12,4	**35.0**	5100	**140.0**	20400	40	0,18
R82P-04LNC	10.1036.04	1/4"	-4	6,4	16,1	**35.0**	5100	**140.0**	20400	45	0,20
R82P-05LNC	10.1036.05	5/16"	-5	8,0	16,7	**29.0**	4300	**116.0**	17200	55	0,26
R82P-06LNC	10.1036.06	3/8"	-6	9,5	18,5	**28.0**	4100	**112.0**	16400	65	0,36
R82P-08LNC	10.1036.08	1/2"	-8	12,7	22,6	**24.5**	3600	**98.0**	14400	77	0,44
R82P-10LNC	10.1036.10	5/8"	-10	16,0	25,6	**19.0**	2800	**76.0**	11200	100	0,62
R82P-12LNC	10.1036.12	3/4"	-12	19,0	28,6	**15.5**	2300	**62.0**	9200	140	0,72
R82P-16LNC	10.1036.16	1"	-16	25,4	35,8	**14.0**	2100	**56.0**	8400	200	1,02

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile polyester braids

OUTER TUBE: black, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4: 1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX OMEGAFLEX - DIN EN 855 / SAE 100R8 - DN5 - 3/16" - POLYESTER - WP 35 MPa / 5100 PSI

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OMEGAFLEX (NON CONDUCTIVE)



DIN EN 855 R8 / SAE 100R8 / ANSI A92.2 - 10.1032.L

High pressure, double polyester braid reinforced thermoplastic Non Conductive hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R82P-03-TB	10.1032.03L	3/16"	-3	4,8	12,4	**35.0**	5100	**140.0**	20400	40	0,09
R82P-04-TB	10.1032.04L	1/4"	-4	6,4	16,1	**35.0**	5100	**140.0**	20400	45	0,10
R82P-05-TB	10.1032.05L	5/16"	-5	8,0	16,7	**29.0**	4300	**116.0**	17200	55	0,13
R82P-06-TB	10.1032.06L	3/8"	-6	9,5	18,5	**28.0**	4100	**112.0**	16400	65	0,18
R82P-08-TB	10.1032.08L	1/2"	-8	12,7	22,6	**24.5**	3600	**98.0**	14400	77	0,22
R82P-10-TB	10.1032.10L	5/8"	-10	16,0	25,6	**19.0**	2800	**76.0**	11200	100	0,31
R82P-12-TB	10.1032.12L	3/4"	-12	19,0	28,6	**15.5**	2300	**62.0**	9200	140	0,36
R82P-16-TB	10.1032.16L	1"	-16	25,4	35,8	**14.0**	2100	**56.0**	8400	200	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile polyester braids

OUTER TUBE: orange, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX OMEGAFLEX - NON CONDUCTIVE - DIN EN 855 / SAE 100R8 - DN5 - 3/16" - POLYESTER - WP 35 MPa / 5100 PSI

OMEGAFLEX TWIN (NON CONDUCTIVE)



DIN EN 855 R8 / SAE 100R8 / ANSI A92.2 - 10.1036.L

High pressure, double polyester braid reinforced thermoplastic Non Conductive hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R82P-03TNC	10.1036.03L	3/16"	-3	4,8	12,4	**35.0**	5100	**140.0**	20400	40	0,18
R82P-04TNC	10.1036.04L	1/4"	-4	6,4	16,1	**35.0**	5100	**140.0**	20400	45	0,20
R82P-05TNC	10.1036.05L	5/16"	-5	8,0	16,7	**29.0**	4300	**116.0**	17200	55	0,26
R82P-06TNC	10.1036.06L	3/8"	-6	9,5	18,5	**28.0**	4100	**112.0**	16400	65	0,36
R82P-08TNC	10.1036.08L	1/2"	-8	12,7	22,6	**24.5**	3600	**98.0**	14400	77	0,44
R82P-10TNC	10.1036.10L	5/8"	-10	16,0	25,6	**19.0**	2800	**76.0**	11200	100	0,62
R82P-12TNC	10.1036.12L	3/4"	-12	19,0	28,6	**15.5**	2300	**62.0**	9200	140	0,72
R82P-16TNC	10.1036.16L	1"	-16	25,4	35,8	**14.0**	2100	**56.0**	8400	200	1,02

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile polyester braids

OUTER TUBE: orange, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1

APPLICATION: petroleum base hydraulic fluids
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

BALFLEX OMEGAFLEX - NON CONDUCTIVE - DIN EN 855 / SAE 100R8 - DN5 - 3/16" - POLYESTER - WP 35 MPa / 5100 PSI

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ZETAFLEX 3000



SAE 100R18 - 10.1130.

High pressure, single or double polyester braid reinforced thermoplastic Isobaric hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R18-03	10.1130.03	3/16"	-3	4,8	10,3	**21,0**	3000	**84,0**	12000	30	0,09
R18-04	10.1130.04	1/4"	-4	6,4	12,4	**21,0**	3000	**84,0**	12000	45	0,10
R18-05	10.1130.05	5/16"	-5	8,0	14,2	**21,0**	3000	**84,0**	12000	50	0,13
R18-06	10.1130.06	3/8"	-6	9,5	16,6	**21,0**	3000	**84,0**	12000	75	0,18
R18-08	10.1130.08	1/2"	-8	12,7	22,5	**21,0**	3000	**84,0**	12000	90	0,22
R18-10	10.1130.10	5/8"	-10	16,0	25,4	**21,0**	3000	**84,0**	12000	120	0,31
R18-12	10.1130.12	3/4"	-12	19,0	31,5	**21,0**	3000	**84,0**	12000	150	0,36
R18-16	10.1130.16	1"	-16	25,4	39,6	**21,0**	3000	**84,0**	12000	250	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 1 or 2 high tensile synthetic fiber braid

OUTER TUBE: black, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX ZETAFLEX 3000 - SAE 100R18 - DN5 - 3/16" - WP 21 MPa / 3000 PSI

ZETAFLEX 3000 TWIN



SAE 100R18 - 10.1134.

High pressure, single or double polyester braid reinforced thermoplastic Isobaric hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R18-03-TB	10.1134.03	3/16"	-3	4,8	10,3	**21,0**	3000	**84,0**	12000	30	0,09
R18-04-TB	10.1134.04	1/4"	-4	6,4	12,4	**21,0**	3000	**84,0**	12000	45	0,10
R18-05-TB	10.1134.05	5/16"	-5	8,0	14,2	**21,0**	3000	**84,0**	12000	50	0,13
R18-06-TB	10.1134.06	3/8"	-6	9,5	16,6	**21,0**	3000	**84,0**	12000	75	0,18
R18-08-TB	10.1134.08	1/2"	-8	12,7	22,5	**21,0**	3000	**84,0**	12000	90	0,22
R18-10-TB	10.1134.10	5/8"	-10	16,0	25,4	**21,0**	3000	**84,0**	12000	120	0,31
R18-12-TB	10.1134.12	3/4"	-12	19,0	31,5	**21,0**	3000	**84,0**	12000	150	0,36
R18-16-TB	10.1134.16	1"	-16	25,4	39,6	**21,0**	3000	**84,0**	12000	250	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 1 or 2 high tensile synthetic fiber braid

OUTER TUBE: black, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX ZETAFLEX 3000 - SAE 100R18 - DN10 - 3/8" - WP 21 MPa / 3050 PSI

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ZETAFLEX 3000 (NON CONDUCTIVE)



SAE 100R18 - 10.1130.L

High pressure, single or double polyester braid reinforced Non Conductive thermoplastic Isobaric hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R18-03NC	10.1130.03L	3/16"	-3	4,8	10,3	**21,0**	3000	**84,0**	12000	30	0,09
R18-04NC	10.1130.04L	1/4"	-4	6,4	12,4	**21,0**	3000	**84,0**	12000	45	0,10
R18-05NC	10.1130.05L	5/16"	-5	8,0	14,2	**21,0**	3000	**84,0**	12000	50	0,13
R18-06NC	10.1130.06L	3/8"	-6	9,5	16,6	**21,0**	3000	**84,0**	12000	75	0,18
R18-08NC	10.1130.08L	1/2"	-8	12,7	22,5	**21,0**	3000	**84,0**	12000	90	0,22
R18-10NC	10.1130.10L	5/8"	-10	16,0	25,4	**21,0**	3000	**84,0**	12000	120	0,31
R18-12NC	10.1130.12L	3/4"	-12	19,0	31,5	**21,0**	3000	**84,0**	12000	150	0,36
R18-16NC	10.1130.16L	1"	-16	25,4	39,6	**21,0**	3000	**84,0**	12000	250	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 1 or 2 high tensile synthetic fiber braid

OUTER TUBE: orange, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX ZETAFLEX 3000 - NON CONDUCTIVE - SAE 100R18 - DN5 - 3/16" - WP 21 MPa / 3000 PSI

ZETAFLEX 3000 TWIN
(NON CONDUCTIVE)



SAE 100R18 - 10.1134.L

High pressure, single or double polyester braid reinforced Non Conductive thermoplastic Isobaric hydraulic twin line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
R18-03TNC	10.1134.03L	3/16"	-3	4,8	10,3	**21,0**	3000	**84,0**	12000	30	0,09
R18-04TNC	10.1134.04L	1/4"	-4	6,4	12,4	**21,0**	3000	**84,0**	12000	45	0,10
R18-05TNC	10.1134.05L	5/16"	-5	8,0	14,2	**21,0**	3000	**84,0**	12000	50	0,13
R18-06TNC	10.1134.06L	3/8"	-6	9,5	16,6	**21,0**	3000	**84,0**	12000	75	0,18
R18-08TNC	10.1134.08L	1/2"	-8	12,7	22,5	**21,0**	3000	**84,0**	12000	90	0,22
R18-10TNC	10.1134.10L	5/8"	-10	16,0	25,4	**21,0**	3000	**84,0**	12000	120	0,31
R18-12TNC	10.1134.12L	3/4"	-12	19,0	31,5	**21,0**	3000	**84,0**	12000	150	0,36
R18-16TNC	10.1134.16L	1"	-16	25,4	39,6	**21,0**	3000	**84,0**	12000	250	0,51

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 1 or 2 high tensile synthetic fiber braid

OUTER TUBE: orange, oil and weather resistant thermoplastic, pin-pricked
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX ZETAFLEX 3000 - NON CONDUCTIVE - SAE 100R18 - DN10 - 3/8" - WP 21 MPa / 3050 PSI

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ULTRAFLEX



10.1038

High pressure, single aramidic braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
ULTRA-06	10.1038.06	3/8"	-6	9,5	16,0	**38.0**	5600	**152.0**	22400	80	0,18
ULTRA-08	10.1038.08	1/2"	-8	12,7	20,3	**34.5**	5100	**138.0**	20400	95	0,22

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile aramidic fiber braid

OUTER TUBE: black, oil and weather resistant thermoplastic
SAFETY FACTOR: 4:1
APPLICATION: petroleum base hydraulic fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) Max. temperature recommended for water base hydraulic fluids: +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX R9 ULTRAFLEX - EXCEEDS DIN EN 855 - DN10 - SAE100 R8 - 3/8" - WP 38.0 MPa / 5510 PSI

CNG



10.1037.

High Pressure, single aramidic fiber and single high tensile braid Compressed Natural Gas hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
CNG-04	10.1037.04	1/4"	-4	6,4	14,0	**69,0**	10100	**276,0**	40400	40	0,24
CNG-06	10.1037.06	3/8"	-6	9,5	18,0	**50,0**	7300	**200,0**	29200	60	0,26

INNER TUBE: internal core in polyamide
REINFORCEMENT: 2 high tensile steel braid and 1 aramidic fiber braid

OUTER TUBE: red color pin-pricked polyurethane
SAFETY FACTOR: 4:1

APPLICATION: CNG (compressed natural gas) dispenser at very high pressure
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX CNG - DN6 - 1/4" - ELECTRICAL CONDUCTIVE - WP 69 MPa / 10100 PSI

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JETWASH MICROLINE LIGHT



12.160W.04

High pressure Thermoplastic Jet washing and lubrification hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
JETW-04	12.160W.04	1/4"	-4	6,4	12,5	**16,0**	2400	**64,0**	9600	100	0,10

INNER TUBE: polyethylene tube resistant to water, grease and oil
REINFORCEMENT: 2 high tensile polyester

OUTER TUBE: black PVC compound resistant to abrasion and weather
SAFETY FACTOR: 4:1

APPLICATION: hobby type jet washing and lubricators
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX JETWASH MICRO LINE - DN6 - 1/4" - WP 16 MPa / 2320 PSI

JET CLEAN



10.1039.

High pressure, 2 aramidic braids reinforced thermoplastic sewer jet cleaning hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
JC-08	10.1039.08	1/2"	-8	12,7	22,5	**24,1**	3500	**60,3**	8750	100	0,21
JC-10	10.1039.10	5/8"	-10	16,0	25,6	**20,7**	3000	**51,8**	7500	115	0,35
JC-12	10.1039.12	3/4"	-12	19,0	29,2	**20,7**	3000	**51,8**	7500	125	0,48
JC-16	10.1039.16	1"	-16	25,4	37,5	**20,7**	3000	**51,8**	7500	160	0,58
JC-20	10.1039.20	1.1/4"	-20	31,8	46,5	**20,7**	3000	**51,8**	7500	250	0,65

INNER TUBE: internal core in polyester
REINFORCEMENT: 2 high tensile aramidic fiber braids

OUTER TUBE: orange polyurethane high abrasion resistance
SAFETY FACTOR: 2.5:1

APPLICATION: sewer cleaning with high pressure water
TEMPERATURE RANGE: -40°C (-40°F) +65°C (+149°F)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX JET CLEAN - DN12 - 1/2" - WP 24.1 MPa / 3500 PSI

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PAINTSPRAY 1W



10.1040.

High pressure, one steel wire braid reinforced thermoplastic paintspray hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
PS1W-03	10.1040.03	3/16"	-3	4,8	9,7	**35,0**	5100	**140,0**	20400	30	0,13
PS1W-04	10.1040.04	1/4"	-4	6,4	11,7	**32,0**	4700	**128,0**	18800	40	0,17
PS1W-05	10.1040.05	5/16"	-5	8,0	13,6	**27,5**	4000	**110,0**	16000	50	0,22
PS1W-06	10.1040.06	3/8"	-6	9,5	15,2	**25,0**	3700	**100,0**	14800	60	0,26
PS1W-08	10.1040.08	1/2"	-8	12,7	18,4	**19,0**	2800	**76,0**	11200	75	0,39
PS1W-12	10.1040.12	3/4"	-12	19,0	25,7	**12,0**	1800	**48,0**	7200	150	0,45

INNER TUBE: internal core in polyamide
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: blue pin-pricked polyurethane high abrasion resistance

SAFETY FACTOR: 4:1
APPLICATION: high pressure airless spray systems, chemical resistance to solvents and agressive fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) max. temperature recommended for water base hydraulic fluids and air: +70°C (+158°C)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX PAINTSPRAY - 1W - STEEL - DN5 - 3/16" - WP 35 MPa / 5100 PSI

PAINTSPRAY 2W



10.1041.

High pressure, two steel wire braids reinforced thermoplastic paintspray hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
PS2W-04	10.1041.04	1/4"	-4	6,4	13,7	**45,0**	6600	**180,0**	26400	100	0,27
PS2W-05	10.1041.05	5/16"	-5	8,0	15,2	**40,0**	5800	**160,0**	23200	110	0,32
PS2W-06	10.1041.06	3/8"	-6	9,5	17,5	**38,0**	5600	**152,0**	22400	127	0,36
PS2W-08	10.1041.08	1/2"	-8	12,7	21,1	**30,0**	4400	**120,0**	17600	178	0,49
PS2W-12	10.1041.12	3/4"	-12	19,0	28,6	**16,0**	2400	**64,0**	9600	250	0,55

INNER TUBE: internal core in polyamide
REINFORCEMENT: 2 high tensile steel wire braids
OUTER TUBE: blue pin-pricked polyurethane high abrasion resistance

SAFETY FACTOR: 4:1
APPLICATION: high pressure airless spray systems, chemical resistance to solvents and agressive fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) max. temperature recommended for water base hydraulic fluids and air: +70°C (+158°C)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX PAINTSPRAY - 2W - STEEL - DN6 - 1/4" - WP 45 MPa / 6600 PSI

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Balflex®

PAINTSPRAY



10.1042.

High pressure, one or two tensile aramidic braid reinforced thermoplastic paintspray hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
PS-03	10.1042.03	3/16"	-3	4,8	10,3	**35,0**	5100	**140,0**	20400	50	0,09
PS-04	10.1042.04	1/4"	-4	6,3	12,4	**35,0**	5100	**140,0**	20400	75	0,10
PS-06	10.1042.06	3/8"	-6	9,5	15,7	**30,0**	4400	**120,0**	17600	100	0,18
PS-08	10.1042.08	1/2"	-8	12,7	19,3	**24,5**	3600	**98,0**	14400	120	0,22

INNER TUBE: internal core in polyamide
REINFORCEMENT: 1 or 2 high tensile aramidic braid with antistatic polymeric braid
OUTER TUBE: blue pin-pricked polyurethane high abrasion resistance

SAFETY FACTOR: 4:1
APPLICATION: high pressure airless spray systems, chemical resistance to solvents and agressive fluids

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) max. temperature recommended for water base hydraulic fluids and air: +70°C (+158°C)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX PAINTSPRAY - DN5 - 3/16" - WP 35 MPa / 5100 PSI

BEVERAGE



10.1043.

High pressure, one synthetic fiber braid reinforced beverage dispensing hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
BEV1F-04	10.1043.04	1/4"	-4	6,3	12,2	**21,0**	3100	**84,0**	12400	35	0,05

INNER TUBE: thermoplastic elastomer food quality
REINFORCEMENT: 1 synthetic fiber braid

OUTER TUBE: grey color pin-pricked polyurethane
SAFETY FACTOR: 4:1

APPLICATION: designed specially for CO2 gas mixtures used in fixed and mobile beverages dispensing units. Special tube material with flavour free that eliminates contamination risks

TEMPERATURE RANGE: -40°C (-40°F) +80°C (+176°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX BEVERAGE DISPENSING - DN6 - 1/4" - WP 21 MPa / 3000 PSI

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BEVERAGE



10.1044.

High pressure, one steel wire braid reinforced beverage dispensing hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
BEV1S-03	10.1044.03	3/16"	-3	4,8	9,7	**35,0**	5100	**140,0**	20400	40	0,07
BEV1S-04	10.1044.04	1/4"	-4	6,3	11,7	**32,0**	4700	**128,0**	18800	45	0,08

INNER TUBE: thermoplastic elastomer food quality
REINFORCEMENT: 1 steel wire braid

OUTER TUBE: grey color pin-pricked polyurethane
SAFETY FACTOR: 4:1

APPLICATION: designed specially for CO2 gas mixtures used in fixed and mobile beverages dispensing units. Special tube material with flavour free that eliminates contamination risks

TEMPERATURE RANGE: -40°C (-40°F) +80°C (+176°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX BEVERAGE DISPENSING - DN5 - 3/16" - WP 35 Mpa / 5000 PSI

BEVERAGE



10.1045.

High pressure, one aramidic fiber braid reinforced beverage dispensing hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
BEV1A-02	10.1045.02	1/8"	-2	3,2	8,1	**42,0**	6100	**168,0**	24400	25	0,05
BEV1A-03	10.1045.03	3/16"	-3	4,8	10,3	**35,0**	5100	**140,0**	20400	25	0,07
BEV1A-04	10.1045.04	1/4"	-4	6,3	12,4	**35,0**	5100	**140,0**	20400	32	0,09

INNER TUBE: thermoplastic elastomer food quality
REINFORCEMENT: 1 aramidic fiber braid

OUTER TUBE: grey color pin-pricked polyurethane
SAFETY FACTOR: 4:1

APPLICATION: designed specially for CO2 gas mixtures used in fixed and mobile beverages dispensing units. Special tube material with flavour free that eliminates contamination risks

TEMPERATURE RANGE: -40°C (-40°F) +80°C (+176°F)
COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX BEVERAGE DISPENSING - DN3 - 1/8" - WP 42 Mpa / 6000 PSI

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SUPERJACK 2W



10.1046.

High pressure, double steel wire braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
JACK2W-04	10.1046.04	1/4"	-4	6,4	14,1	**70,0**	10000	**175,0**	25000	100	0,29
JACK2W-06	10.1046.06	3/8"	-6	9,5	17,5	**70,0**	10000	**150,0**	21750	150	0,42
JACK2W-08	10.1046.08	1/2"	-8	12,7	21,1	**50,0**	7250	**125,0**	18125	200	0,68

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile steel wire braid
OUTER TUBE: orange, oil and weather resistant polyurethane

SAFETY FACTOR: 2.5:1 on 1/4" and 1/2"and 2.1:1 on 3/8" size
APPLICATION: high pressure hydraulic systems, hydraulic jacks, rescue equipments, safety equipments, earthmoving equipments and mining equipments.

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) max. temperature recommended for water base hydraulic fluids and air: +70°C (+158°C)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX SUPERJACK - DN6 - 1/4" - WP 70 MPa / 10000 PSI

SUPERJACK ARAMID



10.1146.

High pressure, one steel wire braid and one aramidic braid reinforced thermoplastic hydraulic hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
JACKSA-04	10.1146.04	1/4"	-4	6,4	14,1	**70,0**	10000	**280,0**	40000	70	0,29
JACKSA-06	10.1146.06	3/8"	-6	9,5	17,5	**70,0**	10000	**280,0**	40000	100	0,42
JACKSA-08	10.1146.08	1/2"	-8	12,7	22,4	**70,0**	10000	**280,0**	40000	180	0,52

INNER TUBE: seamless oil resistant thermoplastic
REINFORCEMENT: 2 high tensile steel wire braid and 2 high tensile aramidic braid
OUTER TUBE: orange, oil and weather resistant polyurethane

SAFETY FACTOR: 4:1
APPLICATION: high pressure hydraulic systems, hydraulic jacks, rescue equipments, safety equipments, earthmoving equipments and mining equipments

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F) max. temperature recommended for water base hydraulic fluids and air: +70°C (+158°C)

COUPLINGS: Balflex® 2-piece fittings serie 23 with 20 serie ferrules

BALFLEX SUPERJACK - DN6 - 1/4" - WP 70 MPa / 10000 PSI

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MINIBORE



10.1147.

High pressure, single aramidic braid thermoplastic hydraulic line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
MICRO-1	10.1147.03	1/8"	-	3,2	6,5	**25,0**	3700	**100,0**	14800	20	0,05

INNER TUBE: thermoplastic elastomer
REINFORCEMENT: 1 aramidic fiber braid

OUTER TUBE: black color polyurethane
SAFETY FACTOR: 4:1

APPLICATION: designed specially for very high pressure mini hydraulic lines. Automotive and truck's cab lifting systems

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)
COUPLINGS: Balflex® 2-piece fittings serie 05

BALFLEX MINIBORE - 1/8" - WP 25 MPa / 3600 PSI

MICROTEST



05.HH01

High pressure, single aramidic braid thermoplastic hydraulic line hose

REFERENCE	#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
MICRO-2	05.HH01	5/64"	-	2,0	5,0	**63,0**	9200	**189,0**	36800	20	0,06

INNER TUBE: thermoplastic elastomer
REINFORCEMENT: 1 aramidic fiber braid

OUTER TUBE: black color polyurethane
SAFETY FACTOR: 3:1

APPLICATION: designed specially for very high pressure mini hydraulic lines. Hydraulic lines pressure take-off

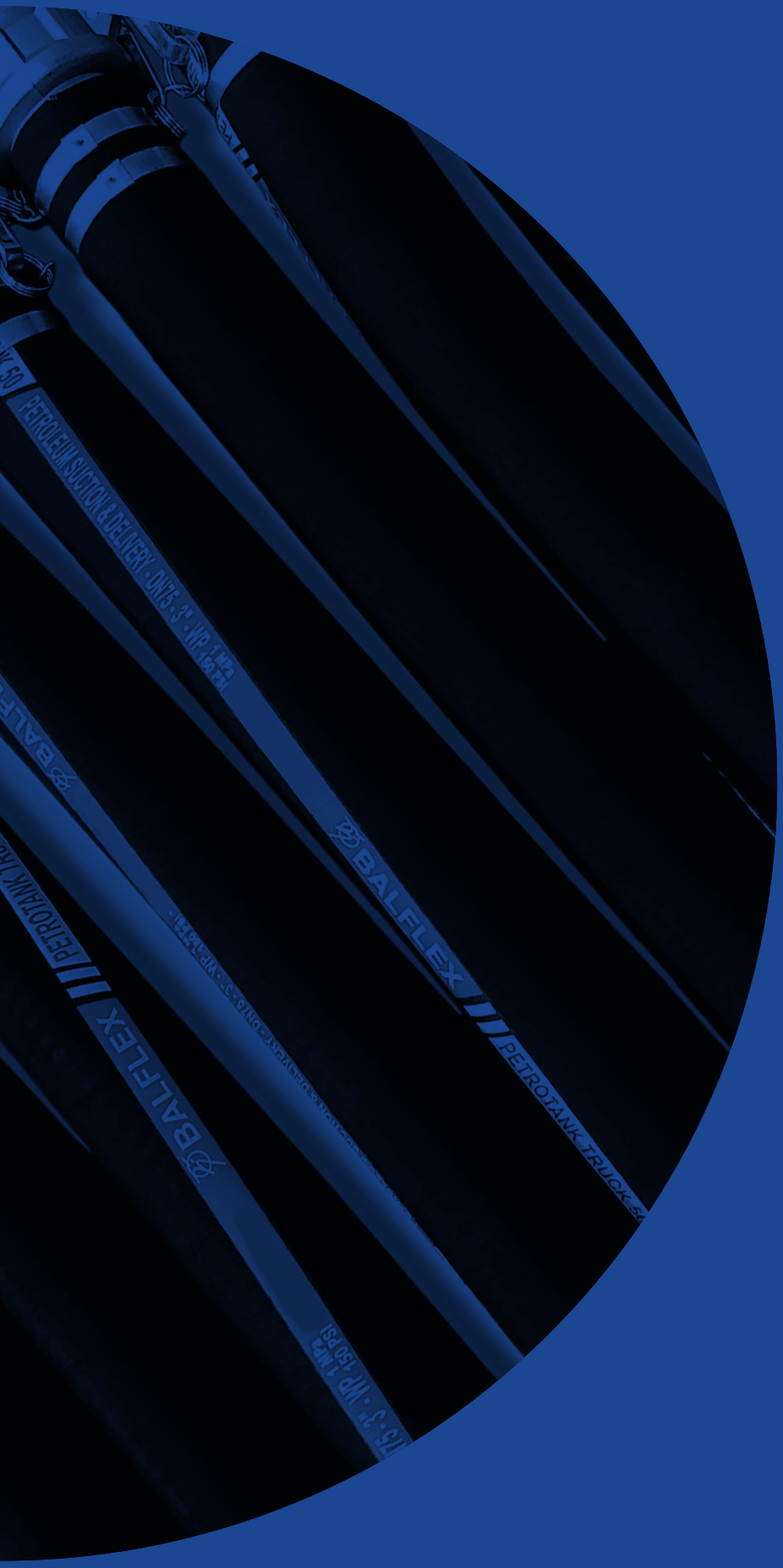
TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)
COUPLINGS: Balflex® 2-piece fittings serie 05

BALFLEX MICROTEST - 5/64" - WP 63 MPa / 9200 PSI

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Balflex®

Industrial Hoses

Balflex® Industrial Hoses are produced to Balflex® specifications and according to international standards, covering a wide variety of applications, with best chosen high quality grade polymers, with synthetic fibers or steel wire reinforcements, for a wide range of fluids and temperatures.

Balflex® optimized the production of these hoses and their compatibility with a wide range of connectors, in order to assure the highest performance and the most extensive range of applications.

The Balflex® industrial hose program includes:

- Long length textile Industrial Hoses
- Mandrel built Industrial Hoses
- Steel wire Industrial Hoses
- High pressure steel spiral Waterbast Hoses

General Guidelines

Balflex® industrial hoses are designed with different safety factors (the ratio relating minimum burst pressure and recommended working pressure), according to the relevant in the application field. Working pressure and nominal diameter are always branded on the hose, except on hoses with external steel braid. Industrial hoses are designed for a variety of fluids and granulates applications with different temperature ranges. Special rubber compounds and lining materials allow exceeding ambient temperatures.

The following catalogue pages list the compatibility of the hose for different applications, working and minimum burst pressure, diameters, minimum bend radius and working temperature range. For additional data please consult our technical department.

Selection, assembly and installation of industrial hoses should follow Balflex® recommendations and the applicable field standards. Industrial hose assemblies should always be inspected and hydrostatically tested before installation. All systems where new hoses have been installed should be tested against leakage and malfunction in an appropriate area.

Installations that not comply with an adequate geometry of the hose assembly may reduce significantly the life of the hose. Likewise, the use of wrongly dimensioned hoses or application in a system whose working characteristics exceed the hose specifications may shorten drastically the hose life.

The failure of an industrial hose assembly may be dangerous and expose people and property to irreversible damage. Among other occurrences that must be prevented are the high velocity and high temperature projection of conveyed fluid or granulate, the projection of couplings and it's parts, the whipping of unrestrained hose, spillage or combustion of the fluid or granulate and electrical shocks through contact with electrical sources.

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Industrial Hoses Resistance Chart

● Recommended ● Recommended with Restrictions ● Not Recommended

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Acetaldehyde	●	●	●	●	●	●	●	●	●
Acetic Acid, Glacial	●	●	●	●	●	●	●	●	●
Acetic Acid, 10%	●	●	●	●	●	●	●	●	●
Acetic Acid, 50%	●	●	●	●	●	●	●	●	●
Acetic Anhydride	●	●	●	●	●	●	●	●	●
Acetic Oxide	●	●	●	●	●	●	●	●	●
Acetone	●	●	●	●	●	●	●	●	●
Acetone Cyanohydrin	●		●	●			●	●	●
Acetonitrile	●		●	●			●	●	●
Acetophenone	●	●	●	●	●	●	●	●	●
Acetyl Acetone	●	●	●	●			●	●	●
Acetyl Chloride	●	●	●	●			●	●	●
Acetyl Oxide	●		●	●	●	●	●	●	●
Acetylene	●	●	●	●	●	●	●	●	●
Acetylene Dichloride	●	●	●	●			●	●	●
Acetylene Terachloride	●		●	●			●	●	●
Acrolein	●	●	●	●			●	●	●
Acrylonitrile	●	●	●	●	●	●	●	●	●
Acrylic Acid	●			●			●	●	●
Adipic Acid	●		●	●	●	●	●	●	●
Air, +300 °F	●	●	●	●			●	●	●
Alk-Tri	●		●	●			●	●	●
Allyl Alcohol	●		●	●	●	●	●	●	●
Allyl Bromide	●		●	●			●	●	●
Allyl Chloride	●	●	●	●	●	●	●	●	●
Alum	●		●	●	●	●	●	●	●
Aluminium Acetate	●	●	●	●			●	●	●
Aluminium Chloride	●	●	●	●	●	●	●	●	●
Aluminium Fluoride	●	●	●	●	●	●	●	●	●
Aluminium Formate	●		●	●			●	●	●
Aluminium Hydroxide	●	●	●	●	●	●	●	●	●
Aluminium Nitrate	●	●	●	●			●	●	●
Aluminium Sulfate	●	●	●	●	●	●	●	●	●
Amines-Mixed	●	●		●			●	●	●

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Aminobenzene	●	●	●	●	●	●	●	●	●
Aminodimethilbenzene	●		●	●			●	●	●
Aminoethane	●	●	●	●	●	●	●	●	●
Aminoxylene	●		●	●			●	●	●
Ammonium Carbonate	●	●	●	●			●	●	●
Ammonium Chloride	●	●	●	●	●	●	●	●	●
Ammonium Hydroxide	●	●	●	●	●	●	●	●	●
Ammonium Nitrate	●	●	●	●	●	●	●	●	●
Ammonium Phosphate, Dibasic	●	●	●	●	●	●	●	●	●
Ammonium Sulfate	●	●	●	●	●	●	●	●	●
Ammonium Sulfide	●	●	●	●	●	●	●	●	●
Ammonium Thiosulfate	●		●	●			●	●	●
Amyl Acetate	●	●	●	●	●	●	●	●	●
Amyl Acetone	●		●	●			●	●	●
Amyl Alcohol	●	●	●	●	●	●	●	●	●
Amyl Bromide	●		●	●			●	●	●
Amyl Chloride	●	●	●	●	●	●	●	●	●
Amyl Ether	●		●	●			●	●	●
Amylamine	●		●	●			●	●	●
Anethole	●		●	●			●	●	●
Aniline	●	●	●	●	●	●	●	●	●
Aniline Dyes	●	●	●	●	●	●	●	●	●
Aniline Oil	●	●	●	●	●	●	●	●	●
Animal Fats	●	●	●	●	●	●	●	●	●
Antimony Pentachloride	●			●	●	●	●	●	●
Aqua Regia	●	●	●	●	●	●	●	●	●
Argon	●	●	●	●			●	●	●
Arsenic Acid	●	●	●	●	●	●	●	●	●
Asphalt	●	●	●	●	●	●	●	●	●
Astm Fuel A	●	●	●	●			●	●	●
Astm Fuel B	●	●	●	●			●	●	●
Astm Fuel C	●	●	●	●			●	●	●
Astm Oil No.1	●	●	●	●	●	●	●	●	●

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Astm Oil No.2	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🔴
Astm Oil No.3	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Astm Oil No.4	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Automatic Trasmission Fluid	🔴	🔴	🔴	🔴			🟡	🟡	🟡
Banana Oil	🔴		🟡	🟡			🔴	🔴	🟡
Barium Chloride	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Barium Hydroxide	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Barium Sulphide	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Beer	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Beet Sugar Liquors	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢
Benzal Chloride			🟢				🔴		
Benzaldehyde	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🟢	🟢
Benzene	🔴	🔴	🔴	🟡	🟢	🟡	🔴	🟡	🟡
Benzene Carboxylic Acid	🔴		🟢	🟡			🔴	🟢	🟡
Benzine		🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Benzoic Acid	🔴	🔴	🟡	🟡			🔴	🟢	🟡
Benzol	🔴	🔴	🔴	🟡	🟢	🟡	🔴	🟡	🟡
Benzotrichloride	🔴			🟢			🔴	🔴	🔴
Benzyl Acetate	🔴		🟢	🟢			🔴	🟢	🟢
Benzyl Alcohol	🔴	🔴	🟢	🟢			🔴	🟡	🟡
Benzyl Chloride	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Benzyl Ether	🔴	🔴	🟢	🟡			🔴	🔴	🔴
Black Sulfate Liquor	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Bleach	🟡	🔴	🟢	🟢	🟢	🟡	🔴	🟡	🟢
Borax Solution	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢
Boric Acid	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Brake Fluid (Hd-557)12 Days	🔴	🟢	🟢	🟢			🟡	🟡	🟡
Brine	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Bromobenzene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Bromochlorometane	🔴		🟡	🟢	🟡	🟡	🔴	🔴	🔴
Bromoethane	🟡	🔴	🟡	🔴	🟢	🟢	🟡	🔴	🔴
Bromotoluene	🔴		🔴				🔴		🔴
Bunker Oil	🔴	🔴	🔴	🔴			🟢	🟢	🟡
Butadiene	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🟢
Butane	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟡
Butanoic Acid	🟡		🔴	🟡			🟡	🔴	🟡
Butanol	🟢	🟢	🟡	🟡	🟢	🟢	🟢	🟢	🟢
Butanone	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Butoxyethanol	🔴		🟡	🟢			🟡	🔴	🟢

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Butyl Acetate	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Butyl Acrylate	🔴	🔴	🔴	🟡	🟢	🟢	🔴	🔴	🔴
Butyl Alcohol	🟢	🟢	🟡	🟡	🟢	🟢	🟢	🟢	🟢
Butyl Aldehyde	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Butyl Benzyl Phthalate	🔴		🟢	🟢	🟢	🟢	🔴	🟢	🔴
Butyl Carbitol	🔴	🔴	🟢	🟢			🔴	🔴	🟡
Butyl Cellosolve	🔴	🔴	🟡	🟡	🟢	🟢	🟡	🔴	🟢
Butyl Chloride	🟢		🟡	🔴			🔴	🔴	🔴
Butyl Ether	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🟡	🔴
Butyl Ether Acetaldehyde	🔴		🟢	🔴			🔴	🔴	🔴
Butyl Ethyl Ether	🔴		🔴	🟡			🟢	🔴	🟡
Butyl Oleate	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Butyl Phthalate	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Butyl Stearate	🔴	🔴	🟡	🔴	🟢	🟢	🟡	🔴	🔴
Butylene	🔴	🔴	🔴	🔴			🟡	🟡	🟡
Butyraldehyde	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Butyric Acid	🟡	🔴	🔴	🟡	🟢	🟢	🟡	🟢	🟡
Butyric Anhydride	🟡		🟡	🟢			🟡	🟢	🟢
Cadmium Acetate	🔴		🟢				🔴		🟢
Calcium Aluminate	🟢		🟢				🟢		🟢
Calcium Bichromate			🟢	🟢			🟡	🟢	🟡
Calcium Bisulfide	🔴	🟢	🔴	🟢			🟡	🟢	🟡
Calcium Chloride	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Calcium Hydroxide	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Calcium Hypochlorite	🟡	🔴	🟢	🟢	🟢	🟢	🟡	🟡	🟢
Calcium Nitrate	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Calcium Sulfide	🟡	🔴	🟢	🟢			🟢	🟢	🟢
Calcium Acetate	🟢	🔴	🟢	🟢			🟡	🟡	🟡
Caprylic Acid	🟡		🟡				🟡		🟢
Carbamide	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Carbitol	🟡	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Carbolic Acid Phenol	🟡		🟡						🟡
Carbon Dioxide	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Carbon Disulfide	🔴		🔴	🔴	🟡	🟡	🔴	🔴	🔴
Carbon Monoxide	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟡
Carbon Tetrachloride	🔴		🔴	🔴	🟢	🟢	🔴	🔴	🔴
Carbonic Acid	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢
Castor Oil	🟢	🟢	🟡	🟡	🟢	🟢	🟢	🟢	🟢
Caustic Soda	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Cellosolve Acetate	🟡	🔴	🟡	🟢	🟢	🟢	🔴	🔴	🔴
Celluguard	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Cetylic Acid	🟡	🟢	🟡	🟡	🟢	🟢	🟢	🟢	🟡
China Wood Oil	🔴	🔴	🟡	🔴	🟢	🟢	🟢	🟡	🟡
Chlorinated Solvents	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Chloro-2-Propanone	🔴		🟡						🔴
Chloroacetic Acid	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🟢
Chloroacetone	🔴	🔴	🟡	🟢	🟢	🟢	🔴	🔴	🔴
Chlorobenzene	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Chlorobutane	🔴		🟡	🔴			🔴	🔴	🔴
Chlorodane	🔴	🔴	🔴	🔴			🟡	🟡	🟡
Chloroethyl Benzene	🔴		🔴	🔴			🟡	🔴	🔴
Chloroform	🔴	🔴	🔴	🔴	🟡	🟡	🔴	🔴	🔴
Chloropentane	🔴		🔴	🔴			🔴	🔴	🔴
Chlorosulfonic Acid	🔴	🔴	🔴	🔴	🟡	🔴	🔴	🔴	🔴
Chlorotoluene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Chlorox	🔴	🔴	🟡	🟢			🟡	🟡	🟡
Chrome Plating Solutions	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Chromic Acid	🟡	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🟢
Chromium Trioxide	🔴	🔴	🟢	🟡			🔴	🔴	🟢
Cinnamene	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Cis-9-Octadecenoic Acid	🔴	🔴	🔴	🟡	🟢	🟢	🟢	🟡	🟡
Citric Acid	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Coal Tar Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟡
Coal Tar	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🟡	🟡
Coal Tar Naphtha	🔴		🔴	🔴	🟢	🟢	🔴	🔴	🔴
Coconut Oil	🔴	🔴	🟡	🟡	🟢	🟢	🟢	🟡	🟡
Coke Oven Gas	🟡	🔴	🟡	🔴	🟢	🟢	🔴	🔴	🟡
Coolanol	🔴	🔴	🔴	🔴			🟢	🟡	🟡
Copper Chloride	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟡
Copper Cyanide	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Copper Hydrate	🟡		🟢				🟢		🟢
Copper Hydroxide	🟡		🟢				🟢		🟢
Copper Sulfate	🟡	🟢	🟡	🟢	🟢	🟢	🟢	🟢	🟢
Corn Oil	🔴	🔴	🟡	🟡	🟢	🟢	🟢	🟡	🟡
Cottonseed Oil	🔴	🔴	🟡	🟡	🟢	🟢	🟢	🟡	🟡
Creosote	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🟡	🔴
Cresols	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Cresylic Acid	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Crotonaldehyde	🔴	🟡	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Crude Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🟡	🟡
Cumene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Cupric Hydroxide	🟡		🟢				🟢		🟢
Cupric Nitrate	🟢		🟢	🟡	🟢	🟢	🟡	🟢	🟢
Cupric Sulfate	🟡	🟢	🟡	🟢	🟢	🟢	🟢	🟢	🟢
Cutting Oil	🟡	🔴	🔴	🔴			🟢	🟡	🟡
Cyclohexane	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴	🟡
Cyclohexanol	🟡	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Cyclohexanone	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Cyclopentane	🔴		🔴	🔴			🟢	🟡	🔴
Cyclopentanone	🔴		🔴				🔴		🔴
Cyclopenti I Alcohol				🟡			🔴	🟡	
D-Furaldehyde	🔴		🟡	🟢			🟢	🟡	🟡
Ddt In Kerosene	🔴	🔴	🔴	🔴			🟢	🟡	🟡
Decahydronaphthalene	🔴	🟢	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Decalin	🔴	🟢	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Decyl Alcohol	🔴		🔴	🔴			🟢	🔴	🟡
Decyl Aldehyde	🔴		🟡	🔴			🔴		🔴
Decyl Butyl Phthalate	🔴		🟢				🔴		🔴
Detergent, Water Solution	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟡
Developing Fluid	🟢	🟢	🟡	🟡			🟢	🟢	🟢
Dextron	🔴	🔴	🔴	🔴			🟢	🟡	🔴
Di (2Ethylhexyl)Adipate	🔴		🟢	🟢	🟢	🟢	🔴	🔴	🔴
Di (2Ethylhexyl) Phthalate	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Di-Iso-Butylene	🔴	🔴	🔴	🔴	🟢		🟡	🟡	🔴
Di-Iso-Decyl Phthalate	🔴		🟢	🟢			🔴	🔴	🔴
Di-Iso-Propanolamine	🟢		🟢	🟢			🟢	🟢	🟡
Di-Iso-Propyl Ether	🔴		🔴	🔴	🟢	🟢	🟢	🟡	🟡
Di-Iso-Propyl Ketone	🔴	🔴	🟢	🟢	🟢		🔴	🔴	🔴
Di-P-Mentha-1,8-Diene	🔴		🔴	🔴			🟡	🔴	🔴
Diacetone Alcohol	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🟡	🟡
Diacetylmethane		🔴	🟢	🟢			🔴	🔴	🔴
Diammonium Orthophosphate				🟢			🟢	🟢	
Diamyl Naphthalene	🔴		🟢		🟢	🟢			🔴
Diamylamine	🟢	🔴	🟢	🟢			🟢	🟡	🟡
Diamylene	🔴		🔴	🔴				🔴	🔴
Diamylphenol	🔴		🔴		🟢	🟢	🔴		🔴
Dibenzyl Ether	🔴	🔴	🟡	🟡			🔴	🔴	🔴

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Dibromobenzene	🔴		🔴	🔴			🔴	🔴	🔴
Dibromomethane	🔴		🔴	🟡			🔴	🔴	🔴
Dibutyl Ether	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🟡	🔴
Dibutyl Phthalate	🔴	🔴	🟡	🟡	🟢	🟢	🟡	🔴	🔴
Dibutyl Sebacate	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Dibutylamine	🔴	🔴	🔴	🟡			🔴	🟡	🟡
Dicalcium Phosphate	🟢		🟢	🟢			🟢	🟢	🟢
Dichloroethylene	🔴		🟡	🟡	🟡	🟡	🔴	🔴	🔴
Dichloroacetic Acid	🔴	🔴	🟡	🔴	🟢	🟢	🔴	🔴	🔴
Dichlorobenzene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Dichlorobutane	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Dichlorodifluoromethane	🟡	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Dichloroethane	🔴	🔴	🟡	🔴	🟢	🟢	🔴	🔴	🔴
Dichloroethyl Ether	🔴		🔴	🔴			🔴	🔴	🔴
Dichlorohexane	🔴		🔴	🔴			🔴	🔴	🔴
Dichloromethane	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Dichloropentane	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Dichloropropane	🔴		🔴	🔴	🟢	🟢	🟡	🔴	🔴
Dichloropropene	🔴		🔴	🔴	🟢	🟢	🟡	🔴	🔴
Diesel Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Diethanol Amine	🟢	🔴	🟢	🟢			🟡	🟢	🟡
Diethylbenzene	🔴	🔴	🔴						🔴
Diethyl Ether	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Diethyl Ketone	🔴		🟢	🟢	🟢	🟢	🔴	🔴	🔴
Diethyl Oxalate	🟡		🔴	🔴			🔴	🔴	🔴
Diethyl Phthalate	🔴		🔴	🟡	🟢	🟢	🔴	🔴	🔴
Diethyl Sebacate	🔴	🔴	🟢	🟡			🟡	🔴	🟡
Diethyl Sulfate	🔴	🟢	🟡	🟢			🔴	🟢	🔴
Diethyl Amine	🟡	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Diethylene Glycol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Diethylene Oxide	🔴		🔴	🟢			🔴	🔴	🔴
Diethylenetriamine	🟢	🔴	🟢	🟢			🟢	🔴	🟡
Dihydroxy Succinic Acid	🟢		🟢	🟢			🟢	🟢	🟢
Dihydroxydiethyl Ether	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Diisobutyl Ketone	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Diisodecyl Phthalate	🔴		🟢	🟢	🟢	🟢	🔴	🔴	🔴
Diisooctyl Adipate	🔴		🟢	🟢			🔴	🔴	🔴
Diisooctyl Phthalate	🔴		🟢	🟢	🟢	🟢	🔴	🔴	🔴
Dimethyl Carbinol	🟢		🟢	🟢	🟢	🟢	🟡	🟢	🟢

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Dimethyl Ketone	🟡	🟡	🟢	🟢	🟢	🟢	🔴	🟡	🔴
Dimethyl Phthalate	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Dimethyl Sulfate	🔴		🟢	🔴	🟢	🟢	🔴	🔴	🔴
Dimethyl Sulfide	🔴		🟡	🔴			🔴	🔴	🔴
Dimethylamine	🟢	🔴	🟢	🟢	🟢	🟢	🟡	🔴	🔴
Dimethylaniline	🔴	🔴	🟢	🟢			🔴	🔴	🔴
Dimethylbenzene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Dimethylbutane	🔴		🔴						🔴
Dioxane	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Dipentene	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Dipentylamine	🟢	🔴	🟢	🟢			🟢	🟡	🟡
Dipropylene Glycol	🟢		🟢	🟢			🟢	🟢	🟢
Disodium Phosphate	🟢		🟢	🟢			🟢	🟢	🟢
Divinyl Benzene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Dowthermn, A And E	🔴	🔴	🔴	🔴			🔴	🔴	🟡
Dry Cleaning Fluids	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Ethanoic Acid		🟢		🟡	🟢	🟢	🟡	🟡	
Ethanol	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢
Ethanolamine	🟡	🔴	🟡	🟢			🟡	🟡	🟡
Ethers	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🔴	🔴
Ethyl Acetate	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Ethyl Acetoacetate	🟡	🔴	🟡	🟡			🔴	🔴	🔴
Ethyl Acetone	🔴		🟢	🟢			🔴	🔴	🔴
Ethyl Acrylate	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Ethyl Alcohol	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢
Ethyl Aldehyde	🟡		🟢	🟢	🟢	🟢	🔴	🔴	🟡
Ethyl Aluminium Dichloride	🔴		🔴				🔴		🔴
Ethyl Benzene	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Ethyl Bromide	🟡	🔴	🔴	🔴	🟢	🟢	🟡	🔴	🔴
Ethyl Butyl Acetate	🔴		🟢				🔴		🟢
Ethyl Butyl Alcohol	🟢		🟢						🟢
Ethyl Cellulose	🟡	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Ethyl Chloride	🟡	🟢	🟢	🟡	🟢	🟢	🟢	🔴	🟡
Ethyl Dichloride	🔴	🔴	🟡	🔴	🟢	🟢	🔴	🔴	🔴
Ethyl Ether	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Ethyl Formate	🔴	🔴	🟡	🟡			🔴	🟡	🟡
Ethyl Iodide	🔴		🟡	🟡	🟢	🟢	🔴	🔴	🔴
Ethyl Oxalate	🔴	🔴	🟡	🟡			🔴	🟡	🟡
Ethyl Phthalate	🔴		🟡	🟡	🟢	🟢	🔴	🔴	🔴

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Ethyl Silicate	🟡	🟢	🟢	🟢			🟢	🟢	
Ethyl-N-Butyl Ketone	🔴	🟢	🟢				🔴	🔴	🔴
Ethyl-1-Butanol	🟢		🟢	🟢			🟢	🟢	🟢
Ethylamine	🟡	🔴	🟡	🟢			🟡	🟡	🟡
Ethylene Chlorohydrin	🟡	🟢	🟡	🟡			🔴	🟡	🟡
Ethylene Diamine	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟡
Ethylene Dibromide	🔴	🔴	🟡	🟡	🟡	🟡	🔴	🔴	🔴
Ethylene Dichloride	🔴	🔴	🟡	🔴	🟡	🟡	🔴	🔴	🔴
Ethylene Glycol Monobutyl Ether	🔴	🔴	🟢	🟢	🟢	🟢	🟡	🔴	🟡
Ethylene Glycol Monoethyl Ether	🔴		🟡	🟡	🟢	🟢	🟡	🔴	🔴
Ethylene Glycol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Ethylene Oxide	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Fatty Acids	🔴	🔴	🟡	🔴	🟢	🟢	🟡	🟡	🟡
Ferric Bromide	🟢		🟢				🟢		🟢
Ferric Chloride	🟢	🟢	🟢	🟢		🟢	🟢	🟡	🟡
Ferric Nitrate	🟢	🟢	🟢	🟢		🟢	🟢	🟢	🟢
Ferric Sulfate	🟢	🟢	🟢	🟢		🟢	🟢	🟢	🟢
Ferrous Acetate	🔴		🟢	🟢			🔴	🔴	🟢
Ferrous Chloride	🟢		🟢	🟢		🟢	🟢	🟢	🟢
Ferrous Sulfate	🟢	🟢	🟢	🟢		🟢	🟢	🟢	🟢
Fluoroboric Acid	🟢	🟢	🟡	🟢	🟢	🟢	🟢	🟢	🟢
Fluorine	🔴		🔴	🟢	🟢	🟢	🔴	🔴	🔴
Fluorosilicic Acid	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Formaldehyde	🟡	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Formalin	🟡	🟢	🟡	🟢	🟢	🟢	🟢	🟢	🟡
Formic Acid	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟡	🟢
Freon 113	🟡	🟢	🔴	🔴			🟢	🟢	🟡
Freon 12	🔴	🟢	🔴	🟡	🟡	🟢	🟡	🟡	🟢
Freon 22	🟡	🟢	🟡	🟡	🟡	🟢	🔴	🟢	🟢
Fuel A	🔴		🔴	🔴			🟢	🟡	🟡
Fuel B	🔴		🔴	🔴			🟡	🔴	🔴
Fuel Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Furan	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Furfural	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🟡
Fuel A (Astm)	🔴	🔴	🔴	🔴			🟢	🟡	🔴
Fuel B (Astm)	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Fuel Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Furan	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Furfural	🔴	🔴	🟢	🟡	🟢	🟢	🔴	🔴	🔴
Furfuran	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Furfuryl Alcohol	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Gallic Acid	🟢	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Gallotannic Acid	🟢		🟢	🟢				🟢	🟢
Gasoline	🟡	🔴	🟡	🔴	🟢	🟢	🟢	🔴	🟡
Glacial Acrylic Acid	🔴		🔴	🔴			🔴	🔴	🟢
Gluconic Acid	🔴		🟡	🟢			🟡	🟢	🟢
Glucose	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢
Glycerine	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Glycerol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Glycogenic Acid	🔴		🟡	🟢			🟡	🟢	🟢
Glycols	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Glyconic Acid	🔴		🟡	🟢			🟡	🟢	🟢
Glyclyl Alcohol									
Grease	🔴	🔴	🔴	🔴			🟡	🟡	🟡
Green Sulphate Liquor	🟡	🟢	🟢	🟢			🟡	🟡	🟢
Helium	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Heptaldehyde	🔴	🔴	🟡	🟡			🟢	🟡	🔴
Heptanal	🔴	🔴	🟡	🟡			🟢	🟡	🔴
Heptane	🔴	🔴	🔴	🔴		🟢	🟢	🟡	🟡
Heptanoic Acid	🔴		🔴	🔴			🟢	🟡	🟡
Hexadecanoic Acid	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🔴
Hexaldehyde	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🟡	🟡
Hexane	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Hexanol	🟢	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Hexene	🔴	🔴	🔴	🔴			🟡	🟡	🟡
Hexyl Alcohol	🟢	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Hexyl Methyl Ketone	🔴		🟢	🟢			🔴	🟡	🔴
Hexylamine	🟡		🟢	🟢			🟡	🟢	🟡
Hexylene Glycol	🟢		🟢	🟡			🟡	🟢	🟢
Histowax	🔴		🔴						🟡
Hydraulic & Motor Oil	🔴	🔴	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Hydrazine	🟡	🟢	🟡	🟢			🟡	🟡	🟢
Hydrobromic Acid	🟢	🔴	🟢	🟢	🟢	🟢	🔴	🟡	🟢
Hydrocloric Acid	🟡	🔴	🟡	🟡	🟡	🟡	🟡	🟡	🟡
Hydrocyanic Acid	🟡	🟢	🟡	🟢			🟡	🟡	🟢
Hydrofluoric Acid	🟡	🔴	🟡	🟡	🟢	🟢	🟡	🟡	🟢

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Hydrofluosilicic Acid	🟢	🟢	🟢	🟢	🟢	🟢	🔴	🟡	🟢
Hydrogen Chloride Anhydrous	🔴	🔴	🟢	🟢			🔴	🟡	🔴
Hydrogen Dioxide	🟢		🟢	🟢			🟡	🟡	🟡
Hydrogen Gas	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Hydrogen Peroxide Over 10%	🟡	🔴	🟡	🟡	🟡	🟡	🔴	🔴	🟡
Hydrogen Peroxide 10%	🟢	🔴	🟢	🟢	🟢	🟢	🟡	🟡	🟡
Hydrogen Sulfide	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🟢	🟢
Hydroxy Benzene	🟡		🟡	🟡			🔴	🔴	🟡
Hydroxyisobutyronirile	🟡		🟢	🟢			🟡	🟢	🟡
Hydroxytoluene	🔴	🔴	🟡	🟡			🔴	🟡	🟡
Iminodi-2-Propanol	🟢		🟢	🟢			🟢	🟢	🟡
I minodiethanol	🟡	🔴	🟡	🟢			🟡	🟢	🟡
Iodine	🔴	🟢	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Iodine Pentafluoride	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Iodoform	🔴		🔴	🟢			🟢	🔴	🔴
Iso-Butanal	🔴	🟢		🟢	🟢	🟢	🔴	🟡	
Iso-Butylamine	🟡		🟢	🟢			🔴	🔴	🟡
Iso-Butylbromide	🔴		🔴	🔴			🔴	🔴	🔴
Iso-Butylcarbinol	🔴		🟢	🟢			🟢	🟢	🟢
Isocyanates	🟡		🟢	🟢	🟢	🟢	🟡	🔴	🟡
Isooctane	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴	🟡
Isopropyl Acetate	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Isopropyl Alcohol	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟡	🟢
Isopropyl Ether	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴	🟡
Jet Fuels	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🟡	🔴
Jp-4 Oil	🔴	🔴	🔴	🔴			🟢	🟢	🟢
Kerosene	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Ketones	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟡	🟡
Lacquer Solvents	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴	🔴
Lactic Acid - Cold	🟢	🟢	🟢	🟡	🟢	🟢	🟡	🟡	🟢
Lactic Acid - Hot	🟢	🔴	🟢	🟡	🟢	🟢	🟡	🟡	🟢
Lard	🔴	🔴	🟡	🟡	🟢	🟢	🟢	🟡	🟡
Lavender Oil	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Lead Acetate	🟢	🔴	🟢	🟢	🟢	🟢	🟡	🟡	🔴
Lead Nitrate	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Lead Sulfate	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Lime	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Lime Bleach	🟡	🟢	🟢	🟢			🟡	🟡	🟢
Lime Sulfur	🟡	🔴	🟢	🟢	🟢	🟢	🟢	🟢	🟢

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Limonene	🔴		🔴	🔴			🟡	🔴	🔴
Linoleic Acid	🔴	🔴	🔴	🔴			🟡	🟡	🔴
Linseed Oil	🔴	🔴	🟡	🟡	🟢	🟢	🟢	🟡	🟡
Liquid Petroleum Gas	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟡
Lubricating Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🟡	🟡
Lye Solutions	🟢	🟢	🟢	🟢			🟡	🟢	🟢
Mek	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Magnesium Acetate	🔴	🔴	🟢	🟢			🔴	🔴	🟢
Magnesium Chloride	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Magnesium Hydrate	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟡	🟢
Magnesium Hydroxyde	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟡	🟢
Magnesium Sulfate	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Maleic Acid	🔴	🔴	🔴	🟡	🟢	🟢	🔴	🔴	🔴
Maleic Anhydride	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Malic Acid	🟢	🟢	🔴	🟡	🟡	🟡	🟢	🟡	🟡
Manganous Sulfate	🟢		🟢	🟢			🟢	🟢	🟢
Mercury	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Mercury Vapors	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Mesityl Oxide	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Methallyl Alcohol	🟢		🟢	🟢			🟢	🟢	🟢
Methallyl Chloride	🔴		🔴					🔴	🔴
Methane Carboxylic Acid (See Acetic Acid)					🟢	🟢			
Methanoic Acid	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Methanol	🟢	🟢	🟡	🟢	🟢	🟢	🟡	🟢	🟢
Methoxy Ethanol	🟢		🟢	🟢	🟢	🟢	🟡	🟢	🟢
Methyl Acetate	🟡	🔴	🟡	🟡			🔴	🟢	🔴
Methyl Acetoacetate	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Methyl Acetone	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Methyl Allyl Chloride	🔴		🔴					🔴	🔴
Methyl Amyl Carbinol	🟢		🟢	🟢			🟢	🟢	🟢
Methyl Benzene	🔴	🔴	🔴	🔴	🟡	🟡	🔴	🔴	🔴
Methyl Bromide	🔴	🔴	🟡	🔴	🟡	🟡	🟡	🔴	🔴
Methyl Butane	🔴		🔴	🔴			🟢	🔴	🔴
Methyl Butyl Ketone	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Methyl Carbitol				🟢			🟡	🟡	
Methyl Cellosolve	🔴	🔴	🟡	🟡	🟢	🟢	🟡	🟡	🟡
Methyl Chloride	🔴	🔴	🟡	🟡	🟡	🟡	🔴	🔴	🔴
Methyl Cyanide	🟢		🟢	🟢			🟡	🟢	🟢

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Methyl Ethyl Ketone	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Methyl Hexanol	🟢		🟢	🟢			🟢	🟢	🟢
Methyl Methacrilate	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Methyl Normal Amyl Ketone	🔴			🟢			🟡	🟢	🔴
Methyl Propyl Ether	🔴		🔴	🔴			🔴	🔴	🟡
Methyl Salycilate	🔴		🟡	🟡	🟢	🟢	🔴	🔴	🔴
Methyl Styrene	🔴		🔴	🔴			🔴	🔴	🔴
Methyl Sulfide	🔴		🟡	🔴			🔴	🔴	🔴
Methyl-Iso-Amyl-Ketone	🔴		🟢						🔴
Methyl-2-Butanone	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Methyl-2-Hexanone	🔴		🟢						🔴
Methyl-2-Pentanol	🟢		🟢	🟢			🟢	🟢	🟢
Methyl-2-Pentanone	🟢		🟡	🟡			🟢	🟢	🟢
Methyl-4-Isopropyl Benzene	🟢		🟢	🟢			🟢	🟢	🟢
Methyl Amyl Acetate	🔴								🔴
Methyl Amyl Alcohol	🟢		🟢	🟢			🔴	🔴	🔴
Methylcyclohexane	🔴		🔴	🔴			🔴	🔴	🔴
Methylene Bromide	🔴		🔴	🔴	🟢	🟢	🟡	🔴	🔴
Methylene Chloride	🔴	🔴	🔴	🟡	🟡	🟡	🔴	🔴	🔴
Methylethyl Ketone	🔴	🔴	🟢	🟢			🔴	🔴	🔴
Methyl Hexyl Ketone	🔴		🟢	🟢	🟢		🔴	🟡	🔴
Methyl Isobutyl Carbinol	🟢		🟢	🟡			🔴	🔴	🟢
Methylisobutyl Ketone	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Methylisopropyl Ketone	🔴	🔴	🟡	🟡			🔴	🔴	🔴
Methyllactonitrile	🟡		🟢	🟢			🔴	🟢	🟡
Methylpropyl Carbinol	🟢		🟢				🟢		🟢
Methylpropyl Ketone	🔴		🟢	🟢	🟢	🟢	🔴	🔴	🔴
Mineral Oil	🔴	🔴	🟡	🔴	🟢	🟢	🟢	🟡	🟡
Mineral Spirits	🔴	🔴	🔴	🔴			🟡	🟡	🟢
Mobile Hf A	🔴	🔴	🔴	🔴			🟢	🟡	🔴
Molten Sulfur	🟢		🟢	🟢			🟢	🟢	🟢
Mono-Chloroacetic Acid	🟡	🔴	🟢	🟢	🟢	🟢	🔴	🟡	🟢
Monobutyl Ether	🔴	🔴	🟡	🟡			🟢	🟡	🟡
Monochlorobenzene	🔴	🔴	🔴	🔴	🟡	🟡	🔴	🔴	🔴
Monochlorodifluoromethane	🟡	🟢	🟡	🟡	🟢	🟢	🔴	🟡	🟢
Monoethanol Amine	🟡	🟢	🟡	🟡			🟢	🟢	🟡
Monoethyl Amine	🟡	🟡	🟡	🟢			🟡	🟡	🟡
Morpholine	🔴		🟡	🟡			🔴	🔴	🔴
Motor Oil, 40W	🔴		🔴	🔴			🟢	🟡	🟡

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Mtbe			🟢				🔴	🔴	
Muriatic Acid	🟡	🔴	🟡	🔴			🟡	🟡	🟡
N-Butanal	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
N-Butylamine	🔴	🔴	🟡	🟡			🟡	🔴	🔴
N-Butylbenzene	🔴		🔴	🔴			🔴	🔴	🔴
N-Butylbromide	🔴		🔴	🔴			🔴	🔴	🔴
N-Butylbutyrate	🔴	🔴	🟢	🟢			🔴	🔴	🔴
N-Butylcarbinol	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
N-Nonyl Alcohol	🟢		🟢	🟢			🟢	🟢	🟢
N-Octane	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🟢	🔴
Naphtha	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🔴	🟡
Naphthalene	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Naphthenic Acid	🔴	🔴	🔴	🔴			🟡	🔴	🔴
Natural Gas	🟡	🟡	🔴	🔴	🟢	🟢	🟢	🟢	🟢
Neohexane	🔴		🔴	🔴			🟢	🟢	🔴
Neon Gas	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Neu-Tri	🔴		🔴				🔴		🔴
Nickel Acetate	🟢	🔴	🟢	🟢			🟡	🟢	🔴
Nickel Chloride	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢
Nickel Nitrate	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Nickel Sulfate	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Nitric Acid, Conc	🔴		🔴	🔴			🔴	🔴	🔴
Nitric Acid, Red Fuming	🔴	🔴	🔴	🔴	🔴	🔴	🔴	🔴	🔴
Nitric Acid, 10%	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🟢	🟢
Nitric Acid, 13N	🔴					🔴	🔴		
Nitric Acid, 13N +5%	🔴					🔴	🔴		
Nitric Acid, 20%	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🟢
Nitric Acid, 30%	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🟡
Nitric Acid, 30% - 70%	🔴	🔴	🟡	🔴	🟡	🟡	🟡	🟡	🟡
Nitrilotriethanol	🟡	🟢	🟢	🟢	🟢	🟢	🟡	🟡	🟡
Nitrobenzene	🔴	🔴	🟡	🟡	🟢	🟢	🔴	🔴	🔴
Nitroethane	🟢	🟢	🟢	🟡			🔴	🟡	🟡
Nitrogen	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Nitromethane	🟢	🟡	🟢	🟡			🔴	🟡	🟡
Nitrous Oxide Gas				🟢			🟢	🟢	
Nonanoic Acid	🔴		🟢		🟢	🟢	🟢		🔴
Nonanol	🟢		🟢	🟢			🟢	🟢	🟢
Octanoic Acid	🟡		🟡				🟡		🟢
Octanol	🟡	🟢	🟡	🟡			🟡	🟡	🟡

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Octyl Acetate	🟡	🔴	🟢	🟢	🟢	🟢	🟡	🟡	🟢
Octyl Alcohol	🟡	🟢	🟡	🟡			🟡	🟡	🟡
Octyl Aldehyde	🔴		🔴		🟢	🟢	🔴		🔴
Octyl Amine	🟡		🟢	🟢			🟡	🟢	🟡
Octyl Carbinol	🟢		🟢	🟢			🟢	🟢	🟢
Octylene Glycol	🟢		🟢	🟢			🟢	🟢	🟢
Oil-Petroleum		🔴			🟢	🟢			
Oleic Acid	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟡	🟡
Oleum	🔴	🔴	🔴	🔴	🔴	🔴	🔴	🔴	🔴
Olive Oil	🔴	🔴	🟡	🟢			🟢	🟢	🟡
Ortho-Dichlorobenzene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Ortho-Dichlorobenzol	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Orthoxylene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Oxalic Acid	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Ozone	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🟡	🔴
P-Cymene	🔴		🔴	🔴			🔴	🔴	🔴
Paint Thinner	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Palmitic Acid	🟡	🟢	🟡	🟡	🟢	🟢	🟢	🟢	🟡
Papermakers Alum									
Para-Dichlorobenzene	🔴	🔴	🔴	🔴			🔴	🔴	🔴
Paraffin Wax	🔴		🔴	🔴			🟢	🟢	🟢
Paraldehyde	🟡		🟢	🟢			🟡	🟢	🔴
Paraxylene	🔴		🔴	🔴			🔴	🔴	🔴
Pelargonic Alcohol	🟢		🟢	🟢	🟢	🟢	🟢	🟢	🟢
Pentachloroethane	🔴		🔴				🔴	🔴	🔴
Pentamethylene	🔴		🔴	🔴			🟢	🟡	🔴
Pentane	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟡
Pentanol	🟢		🟢		🟢	🟢			🟢
Pentanone	🔴		🟡	🟡			🔴	🔴	🔴
Pentasol	🔴	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢
Pentyl Acetate	🟡	🔴	🔴	🟡	🟢	🟢	🔴	🔴	🔴
Pentyl Alcohol	🟡	🟢	🟡	🟢	🟢	🟢	🟡	🟡	🟢
Pentyl Bromide	🔴		🔴	🟡			🔴	🔴	🔴
Pentyl Chloride	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🔴	🔴
Pentyl Ether	🔴		🔴	🔴			🟡	🔴	🟡
Pentylamine	🟡		🟢	🔴			🟡	🟡	🟡
Perchloric Acid	🟡	🔴	🟡	🟢	🟢	🟢	🔴	🟢	🟡
Perchloroethylene	🔴	🔴	🔴	🔴	🟢	🟢	🟡	🔴	🔴
Perchloromethane	🔴		🔴	🔴			🔴	🔴	🔴

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Petroleum Crude	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢
Petroleum Ether	🔴	🔴	🔴	🔴			🟢	🔴	🟡
Petroleum Oils	🔴	🔴	🔴	🔴	🟢	🟢	🔴	🟢	🟢
Phenol	🟢	🔴	🟢	🔴	🟢	🟢	🔴	🔴	🟡
Phenolsulfonic Acid	🟡	🔴	🟢	🟢			🟡	🟡	🟡
Phenylamine	🔴		🟢	🟡	🟢	🟢	🔴	🔴	🟡
Phenylbromide	🔴		🔴						🔴
Phenylmethane	🔴		🔴	🔴	🟢	🟢	🔴	🔴	🔴
Phenylmethanol	🔴		🔴	🔴			🔴	🟡	🟡
Phosphate Esters	🔴	🔴	🟢	🟢			🔴	🔴	🔴
Phosphoric Acid 10%	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Phosforic Acid 10% - 85%	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Phosphorus Trichloride	🔴	🔴	🟢	🟢	🟢	🟢	🔴	🔴	🔴
Picric Acid, H2O Solution	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Pine Oil	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🔴	🔴
Pinene	🔴	🔴	🔴	🔴			🟡	🟡	🔴
Polyethylene Glycol E-400	🟢		🟢	🟢			🟡	🟢	🟢
Polyol Ester				🔴			🟢	🔴	
Polypropylene Glycol	🟢		🟢		🟢	🟢	🟢	🟢	🟢
Potassium Acetate	🟢	🔴	🟢	🟢			🟡	🟢	🟢
Potassium Bisulfate	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Potassium Bisulfite	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Potassium Carbonate	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Chloride	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Chromate	🟢	🟢	🟢	🟢			🟢	🟢	🟡
Potassium Cyanide	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Dichromate	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Hydrate	🟢	🟢	🟢		🟢	🟢			🟢
Potassium Hydroxyde	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Nitrate	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Permanganate, 5%	🟢	🟢	🟢	🟢	🟢	🟢	🟡	🟢	🟢
Potassium Silicate	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Potassium Sulfate	🟡	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢
Potassium Sulfide	🟢	🟢	🟢	🟢			🟡	🟢	🟢
Potassium Sulfite	🟡	🟢	🟢	🟢	🟢	🟢		🟢	🟡
Prestone Antifreeze	🟢	🟢	🟢	🟢			🟢	🟢	🟢
Producer Gas	🔴	🔴	🔴	🔴			🟢	🟢	🟡
Propane	🔴	🔴	🔴	🔴	🟢	🟢	🟢	🟢	🟢
Propanediol	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢	🟢

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Propanetriol	●	●	●	●	●	●	●	●	●
Propanol	●	●	●	●	●	●	●	●	●
Propanone	●	●	●	●	●	●	●	●	●
Propenol	●		●						●
Propanediamine	●		●			●			●
Propene Nitrile	●		●		●	●	●	●	
Propenyl Alcohol	●		●	●	●	●	●	●	●
Propenyl Anisole	●		●		●	●	●		●
Propionic Acid	●	●	●	●			●	●	●
Propionitrile	●		●	●			●	●	
Propyl Acetate	●	●	●	●	●	●	●	●	●
Propyl Alcohol	●	●	●	●	●	●	●	●	●
Propyl Aldehyde	●		●	●			●	●	●
Propyl Benzene	●		●					●	●
Propyl Chloride	●		●	●			●	●	●
Propyl Nitrate	●	●	●	●			●	●	●
Propylene	●	●	●	●			●	●	●
Propylene Diamine	●		●				●		●
Propylene Glycol	●	●	●	●	●	●	●	●	●
Pydraul, 'E' Series	●	●	●	●			●	●	●
Pydraulic 'C'	●	●	●	●			●	●	●
Red Oil	●	●	●	●	●	●	●	●	●
Refrigerant 11	●	●	●		●	●			●
Refrigerant 12	●	●	●		●	●			●
Refrigerant 22	●	●	●		●	●			●
Resorcinol	●	●	●	●			●	●	●
Sae No. 10 Oil	●	●	●	●			●	●	●
Sal Ammoniac	●	●	●	●	●	●	●	●	●
Sea Water	●	●	●	●	●	●	●	●	●
Sewage	●	●	●	●	●	●	●	●	●
Silicate Esters	●	●	●	●			●	●	●
Silicate Of Soda	●	●	●	●			●	●	●
Silicone Grease	●	●	●	●	●	●	●	●	●
Silicone Oil	●	●	●	●	●	●	●	●	●
Silver Nitrate	●	●	●	●	●	●	●	●	●
Skydrol 500 Type 2	●	●	●	●			●	●	●
Skydrol 500B	●	●	●	●			●	●	●
Skydrol 500C	●	●	●	●			●	●	●
Skydrol 7000 Type 2	●	●	●	●			●	●	●

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Soap Solutions	●	●	●	●	●	●	●	●	●
Soda Ash	●	●	●	●	●	●	●	●	●
Soda Lime	●		●	●			●	●	●
Soda Niter	●	●	●	●	●	●	●	●	●
Sodium Acetate	●	●	●	●	●	●	●	●	●
Sodium Aluminate	●	●	●	●			●	●	●
Sodium Bicarbonate	●	●	●	●	●	●	●	●	●
Sodium Bisulfate	●	●	●	●	●	●	●	●	●
Sodium Bisulfite	●	●	●	●	●	●	●	●	●
Sodium Borate	●	●	●	●	●	●	●	●	●
Sodium Carbonate	●	●	●	●	●	●	●	●	●
Sodium Chloride	●	●	●	●	●	●	●	●	●
Sodium Cyanide	●	●	●	●	●	●	●	●	●
Sodium Dichromate	●	●	●	●			●	●	●
Sodium Hydrate	●	●	●	●	●	●	●	●	●
Sodium Hydrochlorite	●	●	●	●			●	●	●
Sodium Hydroxide	●	●	●	●	●	●	●	●	●
Sodium Hypochlorite	●	●	●	●	●	●	●	●	●
Sodium Metaphosphate	●	●	●	●	●	●	●	●	●
Sodium Nitrate	●	●	●	●	●	●	●	●	●
Sodium Perborate	●	●	●	●			●	●	●
Sodium Peroxide	●	●	●	●	●	●	●	●	●
Sodium Phosphate	●	●	●	●	●	●	●	●	●
Sodium Silicate	●	●	●	●	●	●	●	●	●
Sodium Sulfate	●	●	●	●	●	●	●	●	●
Sodium Sulfide	●	●	●	●	●	●	●	●	●
Sodium Sulfite	●	●	●	●	●	●	●	●	●
Sodium Thiosulfate	●		●	●	●	●	●	●	●
Soybean Oil	●	●	●	●			●	●	●
Stannic Chloride	●	●	●	●	●	●	●	●	●
Stannic Sulfide	●		●	●			●	●	●
Stannous Chloride	●	●	●	●	●	●	●	●	●
Stannous Sulfide	●		●	●			●	●	●
Steam, Below 350 Deg F	●	●	●	●	●	●	●	●	●
Stearic Acid	●	●	●	●	●	●	●	●	●
Stoddard Solvent	●	●	●	●	●	●	●	●	●
Styrene	●	●	●	●	●	●	●	●	●
Sulfamic Acid	●		●	●			●	●	●
Sulfur	●	●	●	●	●	●	●	●	●

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Sulfur Chloride	●	●	●	●			●	●	
Sulfur Dioxide	●	●	●	●		●	●	●	●
Sulfur Trioxide, Dry	●	●	●	●	●	●	●	●	●
Sulfuric Acid 60%	●	●	●	●	●	●	●	●	●
Sulfuric Acid, Conc.	●	●	●	●	●	●	●	●	●
Sulfuric Acid, Fuming	●	●	●	●	●	●	●	●	●
Sulfuric Acid, 25%	●	●	●	●	●	●	●	●	●
Sulfuric Acid, 25%-50%	●	●	●	●	●	●	●	●	●
Sulfuric Acid, 50%-96%	●	●	●	●	●	●	●	●	●
Sulfurous Acid, 10%	●	●	●	●	●	●	●	●	●
Sulfurous Acid, 10%-75%	●	●	●	●	●	●	●	●	●
T-Butyl Amine	●		●	●			●	●	●
Tall Oil	●	●	●	●			●	●	●
Tallow	●	●	●	●	●	●	●	●	●
Tannic Acid	●	●	●	●	●	●	●	●	●
Tar	●	●	●	●	●	●	●	●	
Tar Bituminous	●	●	●	●			●	●	●
Tartaric Acid	●	●	●	●	●	●	●	●	●
Tellone 2	●								
Tertiary Butyl Alcohol	●	●	●	●			●	●	●
Terpineol	●	●	●						●
Tertiary Butyl Amine	●		●	●			●	●	●
Tertiary Butyl Mercaptan	●	●	●	●			●	●	●
Tetrachlorobenzene	●		●	●			●	●	●
Tetrachloroethane	●	●	●	●	●	●	●	●	●
Tetrachloroethylene	●	●	●	●	●	●	●	●	●
Tetrachloromethane	●		●	●	●	●	●	●	●
Tetrachloronaphthalene	●		●	●	●	●	●	●	●
Tetraethylene Glycol	●		●	●			●	●	●
Tetraethylorthosilicate	●		●	●			●	●	
Tetrahydrofuran	●	●	●	●			●	●	●
Tin Chloride	●		●	●	●	●	●	●	●
Titanium Tetrachloride	●	●	●	●			●	●	●
Toluene	●	●	●	●	●	●	●	●	●
Toluidine	●		●	●	●	●	●	●	●
Toluol	●	●	●	●	●	●	●	●	●
Transformer Oil	●	●	●	●	●	●	●	●	●
Transmission 'A' Oil	●		●	●			●	●	●
Tri-Amine	●		●	●			●	●	●

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Tributyl Phosphate	●	●	●	●			●		●
Tributylamine	●		●				●		●
Trichloroacetic Acid	●	●	●	●			●	●	●
Trichlorobenzene	●	●	●	●	●	●	●	●	●
Trichloroethane	●	●	●	●			●	●	●
Trichloroethylene	●	●	●	●	●	●	●	●	●
Trichloromethane	●	●	●	●	●	●	●	●	●
Trichlorotoluene	●			●			●	●	●
Tricresyl Phosphate	●	●	●	●			●	●	●
Triethanolamine	●	●	●	●	●	●	●	●	●
Triethylamine	●	●	●	●			●	●	●
Triethylene Glycol	●		●	●	●	●	●	●	●
Trihydroxybenzoic Acid	●		●	●			●	●	●
Trimethyl Pentane	●	●	●	●			●	●	●
Trimethylamine	●		●	●			●	●	●
Trisodium Phosphate	●	●	●	●	●	●	●	●	●
Tritoyl Phosphate	●	●	●	●			●	●	●
Tung Oil	●	●	●	●	●	●	●	●	●
Tung Oil	●	●	●	●	●	●	●	●	●
Turpentine	●	●	●	●	●	●	●	●	●
Unsymetrical Dimethyl Hydrazine	●	●	●	●			●	●	●
Undecyl Alcohol	●		●	●			●	●	●
Urea	●		●	●	●	●	●	●	●
Uric Acid	●		●	●			●	●	●
Varnish	●	●	●	●	●	●	●	●	●
Vegetable Oils	●	●	●	●	●	●	●	●	●
Versilube F44	●	●	●	●			●	●	●
Versilube F55	●	●	●	●			●	●	●
Vinegar	●	●	●	●	●	●	●	●	●
Vinegar Acid	●		●		●	●			●
Vinyl Acetate	●	●	●	●	●	●	●	●	●
Vinyl Benzene	●	●	●	●	●	●	●	●	●
Vinyl Chloride	●	●	●	●	●	●	●	●	●
Vinyl Cyanide	●	●	●	●	●	●	●	●	●
Vinyl Ether	●		●				●		●
Vinyl Toluene	●		●	●			●	●	●
Vinyl Trichloride	●		●	●			●	●	●
Vm & Naphtha	●	●	●	●			●	●	●

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Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
Water	●	●	●	●	●	●	●	●	●
Water, Boiling	●		●	●			●	●	●
Water, Soda					●	●			
Wemco C	●	●	●	●			●	●	●
Whiskey	●	●	●	●	●	●	●	●	●
White Oil	●	●	●	●	●	●	●	●	●
White Pine Oil	●	●	●	●			●	●	●
Wines	●	●	●	●	●	●	●	●	●
Wood Alcohol	●	●	●	●	●	●	●	●	●
Wood Oil	●	●	●	●	●	●	●	●	●
Xenon	●	●	●	●			●	●	●
Xylene, Xylon	●	●	●	●	●	●	●	●	●
Xylidine	●	●	●	●			●	●	●
Zeolites	●	●	●	●			●	●	●
Zinc Acetate	●	●	●	●			●	●	
Zinc Carbonate	●		●	●			●	●	●
Zinc Chloride	●	●	●	●	●	●	●	●	●
Zinc Chromate	●		●	●			●	●	●
Zinc Sulfate	●	●	●	●	●	●	●	●	●
0-Aminotoluene	●		●	●			●	●	●
1 Undecanol	●	●	●	●	●	●	●	●	●
1-Amino-2-Propanol	●		●	●			●	●	●
1-Aminobutane	●	●	●	●			●	●	●
1-Aminopentane	●		●	●			●	●	●
1-Bromo-2-Methyl Propane	●		●	●			●	●	●
1-Bromo-3-Methyl Butane	●		●	●			●	●	●
1-Bromobutane	●		●	●			●	●	●
1-Chloro-2-Methyl Propane	●		●	●			●	●	●
1-Chloro-3-Methyl Butane	●		●	●			●	●	●
1-Decanol	●		●	●	●	●	●	●	●
1-Hendecanol	●		●	●			●	●	●
1,4-Dioxane	●		●	●	●		●	●	●
2(2Aminoethylamino) Ethanol	●		●					●	●
2(2Ethoxyethoxy) Ethanol	●	●	●	●			●	●	●
2(2Ethoxyethoxy) Ethyl Acetate	●	●	●	●			●	●	●
2-Aminoethanol	●	●	●	●			●	●	●
2-Chloro-1-Hydroxy-Benzene	●		●	●			●	●	●

Fluids	COMPOUND								
	NR	SBR	IIR	EPDM	XLPE	UHMWPE	NBR	CR	CSM
2-Chlorophenol	●	●	●	●			●	●	●
2-Chloropropane	●	●	●	●			●	●	●
2-Ethoxyethanol	●	●	●	●	●	●	●	●	●
2-Ethoxyethyl Acetate	●		●	●	●	●	●	●	●
2-Ethyl	●		●				●		●
2-Ethyl-1-Hexanol	●	●	●	●	●	●	●	●	●
2-Ethyl hexanoic Acid	●		●				●		●
2-Ethylhexyl Acetate	●		●	●	●		●		●
2-Octanone	●		●	●			●	●	
3-Bromopropene	●		●	●			●	●	●
3-Chloropropene	●	●	●	●	●	●	●	●	●
3-Coal Oil	●		●	●			●	●	●
4-Hydroxy-4-Methyl--2-Pentanone	●	●	●	●	●	●	●	●	●

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested. Note: All data based on 20°C/70°F unless otherwise noted.

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Balflex®

AIRMASTER AIR & WATER



Exceeds ISO 2398 - Type 3 / Class B / N-T - 10.1232

Air & Water 2.0MPa / 300PSI (100% rubber hose)

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1232.04	1/4"	6,0	13,0	**2,0**	300	**6,0**	900	60
10.1232.05	5/16"	8,0	15,0	**2,0**	300	**6,0**	900	80
10.1232.06	3/8"	10,0	16,0	**2,0**	300	**6,0**	900	100
10.1232.08	1/2"	13,0	21,0	**2,0**	300	**6,0**	900	125
10.1232.10	5/8"	16,0	26,0	**2,0**	300	**6,0**	900	160
10.1232.12	3/4"	19,0	29,0	**2,0**	300	**6,0**	900	190
10.1232.16	1"	25,0	36,0	**2,0**	300	**6,0**	900	254

INNER TUBE: :seamless air and water resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic fiber braid

OUTER TUBE: black, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: heavy works on mining, construction, steel plants, quarries and air compressors

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

BALFLEX AIRMASTER - 1/4" - 6.3 mm - WP 2 MPa / 300 PSI - ISO 2398:2015 - TYPE 3 / CLASS B / N-T

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BALDRILL MINE
AIR & WATER



According to BS EN ISO 2398 - Type 3 / Class B / N-T / Rigid rubber heavy mandrel hose for delivery of Air and Water 2.0MPa / 300PSI – 10.1233

Reinforced with several high resistance synthetic fiber braids

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1233.04	1/4"	6,0	14,0	**2,0**	300	**6,0**	900	60
10.1233.05	5/16"	8,0	17,0	**2,0**	300	**6,0**	900	80
10.1233.06	3/8"	10,0	19,0	**2,0**	300	**6,0**	900	100
10.1233.08	1/2"	13,0	21,0	**2,0**	300	**6,0**	900	125
10.1233.10	5/8"	16,0	26,0	**2,0**	300	**6,0**	900	160
10.1233.12	3/4"	19,0	30,0	**2,0**	300	**6,0**	900	190
10.1233.16	1"	25,0	36,0	**2,0**	300	**6,0**	900	254
10.1233.20	1.1/4"	31,8	44,0	**2,0**	300	**6,0**	900	320
10.1233.24	1.1/2"	38,1	50,0	**2,0**	300	**6,0**	900	380
10.1233.32	2"	50,8	65,0	**2,0**	300	**6,0**	900	510
10.1233.40	2.1/2"	63,5	79,0	**2,0**	300	**6,0**	900	635
10.1233.48	3"	76,2	92,0	**2,0**	300	**6,0**	900	762
10.1233.64	4"	101,6	118,0	**2,0**	300	**6,0**	900	1016
10.1233.96	6"	152,4	170,0	**2,0**	300	**6,0**	900	1524

INNER TUBE: seamless air and water resistant synthetic rubber
REINFORCEMENT: several high resistance synthetic fiber braids

OUTER TUBE: yellow, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: heavy works on mining, construction, steel plants, perforation and quarries

TEMPERATURE RANGE: -35°C (-31°F) +85°C (+185°F)

BALFLEX / BALDRILL MINE AIR & WATER - DN6 - 1/4" - ISO 2398 - TYPE 3 / CLASS B / N-T - WP 2 MPa 300 PSI - Flame Resistant - MSHA IC-252/00

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Balflex®

BALDRILL MINE AIR & WATER BLACK



According to BS EN ISO 2398 - Type 3 / Class B / N-T / Rigid rubber heavy mandrel hose for delivery of Air and Water 2.0MPa / 300PSI – 10.1233.B

Reinforced with several high resistance synthetic fiber braids

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1233.04B	1/4"	6,0	14,0	**2,0**	300	**6,0**	900	60
10.1233.05B	5/16"	8,0	17,0	**2,0**	300	**6,0**	900	80
10.1233.06B	3/8"	10,0	19,0	**2,0**	300	**6,0**	900	100
10.1233.08B	1/2"	13,0	21,0	**2,0**	300	**6,0**	900	125
10.1233.10B	5/8"	16,0	26,0	**2,0**	300	**6,0**	900	160
10.1233.12B	3/4"	19,0	29,0	**2,0**	300	**6,0**	900	190
10.1233.16B	1"	25,0	36,0	**2,0**	300	**6,0**	900	254
10.1233.20B	1.1/4"	31,8	43,0	**2,0**	300	**6,0**	900	320
10.1233.24B	1.1/2"	38,1	50,0	**2,0**	300	**6,0**	900	380
10.1233.32B	2"	50,8	64,0	**2,0**	300	**6,0**	900	510
10.1233.40B	2.1/2"	63,5	77,0	**2,0**	300	**6,0**	900	635
10.1233.48B	3"	76,2	90,0	**2,0**	300	**6,0**	900	762
10.1233.64B	4"	101,6	118,0	**2,0**	300	**6,0**	900	1016
10.1233.96B	6"	152,4	175,0	**2,0**	300	**6,0**	900	1524

INNER TUBE: seamless air and water resistant synthetic rubber
REINFORCEMENT: several high resistance synthetic fiber braids

OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: heavy works on mining, construction, steel plants, perforation and quarries

TEMPERATURE RANGE: -35°C (-31°F) +85°C (+185°F)

BALFLEX / BALDRILL MINE AIR & WATER - DN6 - 1/4" - 6.3mm - ISO 2398:2015 - TYPE 3 / CLASS B / N-T - WP 2 MPa 300 PSI - Flame Resistant - MSHA IC-252/00

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BALDRILL MINE STEEL UNO AIR & WATER



Rigid rubber heavy mandrel hose for delivery of Air an Water – 10.1242

High Pressure, single steel braid reinforced industrial hose

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1242.032	1.1/4"	32,0	44,0	**4,5**	650	**18,0**	2610	419
10.1242.040	1.1/2"	38,0	50,8	**4,5**	650	**18,0**	2610	500
10.1242.050	2"	50,8	64,3	**4,5**	650	**18,0**	2610	630
10.1242.063	2.1/2"	63,5	76,5	**3,0**	450	**12,0**	1800	760
10.1242.075	3"	76,2	88,0	**2,5**	375	**10,0**	1500	900
10.1242.100	4"	101,6	117,0	**2,0**	300	**8,0**	1200	1100

INNER TUBE: seamless oil, air and water resistant synthetic rubber
REINFORCEMENT: 1 high tensile steel wire braid
OUTER TUBE: yellow, weather and abrasion resistant pin-pricked synthetic rubber

SAFETY FACTOR: 4:1
APPLICATION: very heavy works on mining, construction, steel plants, perforation and quarries

TEMPERATURE RANGE: -40ºC (40ºF) +100ºC (+212ºF); Intermittent service: +120ºC (+248ºF). Max. temperature recommended for water base hydraulic fluids: + 70ºC (+ 158ºF) Max. temperature recommended for air: +60ºC (+140ºF)

AVAILABLE VERSION: Black cover (add "B" to code – example:10.1242.050B

BALFLEX // BALDRILL MINE UNO STEEL AIR & WATER - DN51 - 2" - WP 4.5 MPa 650 PSI - Flame Resistant - MSHA IC-252/00

BALDRILL MINE STEEL DUO AIR & WATER



Rigid rubber heavy mandrel hose for delivery of Air an Water – 10.1243.

High Pressure, double steel braid reinforced industrial hose.

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1243.032	1.1/4"	32,0	47,5	**12,5**	1810	**50,0**	7240	419
10.1243.040	1.1/2"	38,0	54,6	**9,0**	1300	**36,0**	5200	500
10.1243.050	2"	50,8	67,4	**8,0**	1160	**32,0**	4640	630
10.1243.063	2.1/2"	63,5	78,0	**4,5**	650	**18,0**	2610	760
10.1243.075	3"	76,2	90,0	**4,5**	650	**18,0**	2610	900
10.1242.100	4"	101,6	118,0	**4,5**	650	**18,0**	2610	1100

INNER TUBE: seamless oil, air and water resistant synthetic rubber
REINFORCEMENT: 2 high tensile steel wire braids
OUTER TUBE: yellow, weather and abrasion resistant pin-pricked synthetic rubber

SAFETY FACTOR: 4:1
APPLICATION: very heavy works on mining, construction, steel plants, perforation and quarries

TEMPERATURE RANGE: -40ºC (-40ºF) +100ºC (+212ºF); Intermittent service: +120ºC (+248ºF) Max. temperature recommended for water base hydraulic fluids: +70ºC (+158ºF) Max. temperature recommended for air: +60ºC (+140ºF)

AVAILABLE VERSION: Black cover (add "B" to code – example:10.1243.050B

BALFLEX // BALDRILL MINE DUO STEEL AIR & WATER - DN51 - 2" - WP 8 MPa 1150 PSI - Flame Resistant - MSHA IC-252/00

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Balflex®

PETROTANK 50 S&D



Rigid rubber mandrel PETROTANK TRUCK hose for suction and delivery of Petroleum, Gasoline, Oil and Fuel – 10.1245

Reinforced with several high resistance synthetic fiber braids with steel helix and antistatic copper line with aromatic content up to 50%

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1245.025	1"	-16	25,4	35,0	**1,0**	150	**3,0**	450	144	0,71
10.1245.032	1.1/4"	-20	31,8	42,0	**1,0**	150	**3,0**	450	178	0,96
10.1245.040	1.1/2"	-24	38,1	48,0	**1,0**	150	**3,0**	450	208	1,24
10.1245.050	2"	-32	50,8	62,0	**1,0**	150	**3,0**	450	298	1,7
10.1245.063	2.1/2"	-40	63,5	75,0	**1,0**	150	**3,0**	450	381	2,36
10.1245.075	3"	-48	76,2	90,0	**1,0**	150	**3,0**	450	477	3,11
10.1245.100	4"	-64	101,6	117,0	**1,0**	150	**3,0**	450	655	3,97
10.1245.125	5"	-80	127,0	143,0	**1,0**	150	**3,0**	450	572	7,76
10.1245.150	6"	-96	152,4	168,0	**1,0**	150	**3,0**	450	760	8,95
10.1245.200	8"	-128	203,0	225,0	**1,0**	150	**3,0**	450	1015	13,43

INNER TUBE: synthetic smooth elastomer compound resistant to mineral oil products and fuel mixtures with aromatic content up to 50%, with antistatic characteristics
REINFORCEMENT: high tensile synthetic textile cords, steel helix, one crossing antistatic wire

OUTER TUBE: black wrapped, high oil, weather, heat, abrasion and ozone resistant blend of synthetic elastomer compound
SAFETY FACTOR: 3:1

APPLICATION: tank truck hose for transport, suction & delivery, of mineral oil products and fuel mixtures with aromatic content up to 50%.

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

BALFLEX /// PETROTANK TRUCK 50 PETROLEUM SUCTION & DELIVERY - DN25 - 1" - WP 1 MPa 150 PSI

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PETRO OILTANK 50



PETRO OILTANK 50 DELIVERY PETROLEUM – 10.1249.

Rigid rubber mandrel OILTANK TRUCK hose for delivery of Petroleum, Gasoline, Oil and Fuel

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1249.025	1"	-16	25,4	35,0	**1,0**	150	**3,0**	450	272	0,71
10.1249.032	1.1/4"	-20	31,8	42,0	**1,0**	150	**3,0**	450	330	0,96
10.1249.040	1.1/2"	-24	38,1	48,0	**1,0**	150	**3,0**	450	397	1,24
10.1249.050	2"	-32	50,8	62,0	**1,0**	150	**3,0**	450	510	1,7
10.1249.063	2.1/2"	-40	63,5	75,0	**1,0**	150	**3,0**	450	652	2,36
10.1249.075	3"	-48	76,2	90,0	**1,0**	150	**3,0**	450	812	3,11
10.1249.100	4"	-64	101,6	117,0	**1,0**	150	**3,0**	450	1100	3,97
10.1249.125	5"	-80	127,0	143,0	**1,0**	150	**3,0**	450	1270	7,76
10.1249.150	6"	-96	152,4	168,0	**1,0**	150	**3,0**	450	1524	8,95

INNER TUBE: synthetic smooth elastomer compound resistant to mineral oil products and fuel mixtures with aromatic content up to 50%, with antistatic characteristics
REINFORCEMENT: high tensile synthetic textile cords, one crossing antistatic wire

OUTER TUBE: black wrapped, high oil, weather, heat, abrasion and ozone resistant blend of synthetic elastomer compound
SAFETY FACTOR: 3:1

APPLICATION: tank truck hose for transport, delivery, of mineral oil products and fuel mixtures with aromatic content up to 50%.

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

BALFLEX // PETRO OILTANK 50 FUEL & OIL DELIVERY - DN25 - 1" - WP 1 MPa 150 PSI

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Balflex®

AUTOTANK S&D



Rigid rubber mandrel TANK TRUCK hose for suction and delivery of Petroleum, Gasoline, Oil and Fuel 1.0MPa / 150PSI - 10.1236

Reinforced with several high resistance synthetic fiber braids with steel helix and antistatic copper line

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1236.020	3/4"	19,0	30,0	**1,0**	150	**3,0**	450	136
10.1236.025	1"	25,4	36,0	**1,0**	150	**3,0**	450	152
10.1236.028	1.1/8"	27,8	39,0	**1,0**	150	**3,0**	450	171
10.1236.032	1.1/4"	31,8	43,0	**1,0**	150	**3,0**	450	192
10.1236.040	1.1/2"	38,1	49,0	**1,0**	150	**3,0**	450	228
10.1236.045	1.3/4"	44,9	56,0	**1,0**	150	**3,0**	450	372
10.1236.050	2"	50,8	63,0	**1,0**	150	**3,0**	450	306
10.1236.055	2.1/4"	56,0	70,0	**1,0**	150	**3,0**	450	321
10.1236.063	2.1/2"	63,5	76,0	**1,0**	150	**3,0**	450	381
10.1236.075	3"	76,2	89,0	**1,0**	150	**3,0**	450	457
10.1236.090	3.1/2"	88,9	105,0	**1,0**	150	**3,0**	450	540
10.1236.100	4"	102,0	117,0	**1,0**	150	**3,0**	450	610
10.1236.125	5"	127,0	148,0	**1,0**	150	**3,0**	450	762
10.1236.150	6"	152,0	170,0	**1,0**	150	**3,0**	450	915

INNER TUBE: synthetic rubber resistant to oil, gasoline, diesel and fuels with up to 40% aromatic content, with antistatic characteristics

REINFORCEMENT: several high resistance synthetic fiber braids with a steel helix
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber, with antistatic copper line

SAFETY FACTOR: 3:1
APPLICATION: suction and delivery of oil, gasoline, diesel and fuels

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

BALFLEX /// AUTOTANK TANK TRUCK - FUEL & OIL SUCTION & DELIVERY - DN19 - 3/4" - WP 1 MPa 150 PSI

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OILTANK



Rigid rubber mandrel TANK TRUCK hose for delivery of Petroleum, Gasoline, Oil and Fuel 1.0MPa / 150PSI - 10.1238

Reinforced with several high resistance synthetic fiber braids and antistatic copper line

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1238.025	1"	25,0	35,0	**1,0**	150	**3,0**	450	254
10.1238.032	1.1/4"	31,8	43,0	**1,0**	150	**3,0**	450	320
10.1238.040	1.1/2"	38,1	48,0	**1,0**	150	**3,0**	450	380
10.1238.050	2"	50,8	61,0	**1,0**	150	**3,0**	450	510
10.1238.063	2.1/2"	63,5	75,0	**1,0**	150	**3,0**	450	635
10.1238.075	3"	76,2	88,0	**1,0**	150	**3,0**	450	762
10.1238.090	3.1/2"	88,9	106,0	**1,0**	150	**3,0**	450	900
10.1238.100	4"	101,6	115,0	**1,0**	150	**3,0**	450	1016
10.1238.125	5"	127,0	140,0	**1,0**	150	**3,0**	450	1270
10.1238.150	6"	152,4	168,0	**1,0**	150	**3,0**	450	1524

INNER TUBE: synthetic rubber resistant to oil, gasoline, diesel and fuels with up to 40% aromatic content, with antistatic characteristics

REINFORCEMENT: several high resistance synthetic fiber braids
OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber, with antistatic copper line

SAFETY FACTOR: 3:1
APPLICATION: delivery of oil, gasoline, diesel and fuels

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)



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Balflex®

ACQUATANK S&D



Rigid rubber mandrel hose for suction and delivery of Air and Water 1.0MPa /150PSI – 10.1237

Reinforced with several high resistance synthetic fiber braids and steel helix

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1237.025	1"	25,4	35,0	**1,0**	150	**3,0**	450	152
10.1237.028	1.1/8"	28,6	38,0	**1,0**	150	**3,0**	450	175
10.1237.032	1.1/4"	31,8	42,0	**1,0**	150	**3,0**	450	192
10.1237.040	1.1/2"	38,1	48,0	**1,0**	150	**3,0**	450	228
10.1237.045	1.3/4"	45,0	55,0	**1,0**	150	**3,0**	450	267
10.1237.050	2"	50,8	62,0	**1,0**	150	**3,0**	450	306
10.1237.055	2.1/4"	55,0	71,0	**1,0**	150	**3,0**	450	342
10.1237.060	2.3/8"	60,0	72,0	**1,0**	150	**3,0**	450	370
10.1237.063	2.1/2"	63,5	75,0	**1,0**	150	**3,0**	450	381
10.1237.075	3"	76,2	89,0	**1,0**	150	**3,0**	450	457
10.1237.080	3.1/8"	80,0	92,0	**1,0**	150	**3,0**	450	505
10.1237.090	3.1/2"	88,9	106,0	**1,0**	150	**3,0**	450	540
10.1237.100	4"	101,6	115,0	**1,0**	150	**3,0**	450	610
10.1237.125	5"	127,0	144,0	**1,0**	150	**3,0**	450	762
10.1237.150	6"	152,4	167,0	**1,0**	150	**3,0**	450	915
10.1237.200	8"	254,0	280,0	**1,0**	150	**3,0**	450	1000
10.1237.250	10"	305,0	334,0	**1,0**	150	**3,0**	450	1150
10.1237.300	12"	355,0	385,0	**1,0**	150	**3,0**	450	1250

INNER TUBE: seamless air and water resistant synthetic rubber
REINFORCEMENT: several high resistance synthetic fiber braids and steel helix

OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: suction and delivery of water in construction, mining, steel plants and agriculture

TEMPERATURE RANGE: -35°C (-31°F) +85°C (+185°F)

BALFLEX /// ACQUATANK WATER SUCTION & DELIVERY - DN25 - 1" - WP 1 MPa 150 PSI

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ACQUA



Rigid rubber mandrel hose for delivery of Air and Water 1.0MPa / 150PSI – 10.1235

Reinforced with several high resistance synthetic fiber braids

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1235.025	1"	25,4	34,0	**1,0**	150	**3,0**	450	254
10.1235.028	1.1/8"	28,6	38,0	**1,0**	150	**3,0**	450	300
10.1235.032	1.1/4"	31,8	42,0	**1,0**	150	**3,0**	450	320
10.1235.040	1.1/2"	38,1	48,0	**1,0**	150	**3,0**	450	380
10.1235.045	1.3/4"	45,0	54,0	**1,0**	150	**3,0**	450	445
10.1235.050	2"	50,8	60,0	**1,0**	150	**3,0**	450	510
10.1235.055	2.1/4"	55,0	71,0	**1,0**	150	**3,0**	450	590
10.1235.063	2.1/2"	63,5	75,0	**1,0**	150	**3,0**	450	635
10.1235.075	3"	76,2	88,0	**1,0**	150	**3,0**	450	762
10.1235.090	3.1/2"	88,9	106,0	**1,0**	150	**3,0**	450	900
10.1235.100	4"	101,6	115,0	**1,0**	150	**3,0**	450	1016
10.1235.125	5"	127,0	140,0	**1,0**	150	**3,0**	450	1270
10.1235.150	6"	152,4	165,0	**1,0**	150	**3,0**	450	1524

INNER TUBE: seamless air and water resistant synthetic rubber
REINFORCEMENT: several high resistance synthetic fiber braids

OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: for conveying water in construction, mining, steel plants and agriculture

TEMPERATURE RANGE: -35°C (-31°F) +85°C (+185°F)



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SANDBLAST



Rigid rubber mandrel hose for Sandblasting / Gravel 1.2MPa / 175PSI – 10.1240

Reinforced with several high resistance synthetic fiber braids and antistatic copper line

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1240.12	1/2"	12,7	27,0	**1,2**	180	**3,6**	540	130
10.1240.20	3/4"	19,0	33,0	**1,2**	180	**3,6**	540	230
10.1240.25	1"	25,4	39,0	**1,2**	180	**3,6**	540	254
10.1240.32	1.1/4"	31,8	48,0	**1,2**	180	**3,6**	540	320
10.1240.40	1.1/2"	38,1	56,0	**1,2**	180	**3,6**	540	380
10.1240.50	2"	51,0	69,0	**1,2**	180	**3,6**	540	510

INNER TUBE: seamless synthetic rubber high abrasion resistant to sand with antistatic characteristics; abrasion acc. DIN 53516: approx. 65 mm3

REINFORCEMENT: several high resistance synthetic fiber braids
OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber, with antistatic copper line

SAFETY FACTOR: 3:1
APPLICATION: sandblasting

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

BALFLEX SANDBLAST DN19 - 3/4" - WP 1.2 MPa 175 PSI

DRY CEMENT DELIVERY



According to EN ISO 3861 / ISO 4649. – 10.1241

Dry bulk materials and dry powder cement delivery hose. Reinforced with several high resistance synthetic fiber braids with antistatic copper line

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1241.050	2"	50,8	65,00	**1,0**	150	**3**	450	510
10.1241.063	2.1/2"	63,5	77,00	**1,0**	150	**3**	450	635
10.1241.075	3"	76,0	90,0	**1,0**	150	**3**	450	762
10.1241.090	3.1/2"	90,0	104,0	**1,0**	150	**3**	450	900
10.1241.100	4"	101,0	116,00	**1,0**	150	**3**	450	1016
10.1241.125	5"	127,0	144,00	**1,0**	150	**3**	450	1270
10.1241.150	6"	152,0	168,00	**1,0**	150	**3**	450	1524
10.1241.200	8"	203,0	221,00	**1,0**	150	**3**	450	2032

INNER TUBE: seamless synthetic rubber resistant to abrasion
REINFORCEMENT: high tensile textile cords

OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber with antistatic copper line
SAFETY FACTOR: 3:1

APPLICATION: discharge of dry bulk materials, sand, gravel, and dry powder cement

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

BALFLEX DRY CEMENT DELIVERY - DN51 - 2" - WP 1 MPa 150 PSI

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CONCRETE BETON LIGHT



4.0MPa / 580PSI / 40bar Working Pressure / Abrasion loss value: Acc DIN 53516 < 65 mm3 – 10.1246

Hose for Placement of Concrete / Beton to the Casting Locations

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1246.040	1.1/2"	38,0	54,0	**4,0**	580	**9,2**	1330	75
10.1246.050	2"	50,8	68,00	**4,0**	580	**9,2**	1330	100
10.1246.063	2.1/2"	63,5	83,50	**4,0**	580	**9,2**	1330	125
10.1246.075	3"	76,0	100,00	**4,0**	580	**9,2**	1330	150
10.1246.100	4"	101,0	126,00	**4,0**	580	**9,2**	1330	200

INNER TUBE: seamless special synthetic rubber resistant to abrasion
REINFORCEMENT: 4 plies of high tensile textile cords

OUTER TUBE: black wrapped, weather and abrasion resistant pin-pricked synthetic rubber
SAFETY FACTOR: 2.3: 1

APPLICATION: placement of concrete to the casting locations

TEMPERATURE RANGE: - 40°C (- 40°F) + 70°C (+ 158°F)

BALFLEX / CONCRETE BETON LIGHT DN38 - 1.1/2" - WP 4 MPa 580 PSI

CONCRETE EXTRAFLEX



Abrasion loss value: Acc DIN 53516 < 65 mm^3 – 10.1248

Hose for Placement of Concrete / Beton to the Casting Locations

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1248.050	2"	50,8	72,00	**8,5**	1235	**20,0**	2850	100
10.1248.063	2.1/2"	63,5	86,30	**8,5**	1235	**20,0**	2850	125
10.1248.075	3"	76,0	99,60	**8,5**	1235	**20,0**	2850	150
10.1248.100	4"	101,0	126,00	**8,5**	1235	**20,0**	2850	200
10.1248.125	5"	127,0	153,30	**8,5**	1235	**20,0**	2850	250
10.1248.150	6"	152,0	184,0	**8,5**	1235	**20,0**	2850	300

INNER TUBE: seamless special synthetic rubber resistant to abrasion
REINFORCEMENT: 6 plies of high tensile textile cords

OUTER TUBE: black wrapped, weather and abrasion resistant pin-pricked synthetic rubber
SAFETY FACTOR: 2.3:1

APPLICATION: placement of concrete to the casting locations

TEMPERATURE RANGE: -40°C (-40°F) +70°C (+158°F)

BALFLEX / CONCRETE BETON EXTRAFLEX DN51 - 2" - WP 8.5 MPa 1232 PSI

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Balflex®

MINING BULK & SLURRY



1.0MPa / 150PSI / Working Pressure / Abrasion loss value: Acc DIN 53516 < 68 mm3 – 10.1247

Bulk material suction and delivery

#	inch	ID mm	ID inch	OD mm	OD inch	MPa	PSI	MPa	PSI
10.1247.050	2"	50.8	2.00	69.00	2.72	**1.0**	150	**3.0**	450
10.1247.063	2.1/2"	63.5	2.50	82.00	3.23	**1.0**	150	**3.0**	450
10.1247.075	3"	76.0	3.00	95.00	3.74	**1.0**	150	**3.0**	450
10.1247.100	4"	101.0	4.00	122.00	4.80	**1.0**	150	**3.0**	450
10.1247.125	5"	127.0	5.00	149.00	5.87	**1.0**	150	**3.0**	450
10.1247.150	6"	152.0	6.00	176.0	6.93	**1.0**	150	**3.0**	450
10.1247.200	8"	203.2	8.00	233.0	9.17	**1.0**	150	**3.0**	450
10.1247.250	10"	254.0	10.00	291.0	11.46	**1.0**	150	**3.0**	450
10.1247.300	12"	304.0	12.00	341.0	13.43	**1.0**	150	**3.0**	450

INNER TUBE: seamless special synthetic rubber resistant to abrasion
REINFORCEMENT: 4 plies of high tensile textile cords, with anti-static wire and 2 high strength steel wire helix

OUTER TUBE: black wrapped, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: bulk material suction and delivery, specially for mining, for mineral tailings and mineral pulps, dry cement, mud, grain

TEMPERATURE RANGE: -30ºC (-22ºF) + 70ºC (+ 158ºF)
COUPLINGS: Balflex®Aluminium Flanges

BALFLEX /// *MINING BULK & SLURRY* S&D - DN100 - 4" - WP 10 Bar 150 PSI







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SUPERSTEAM RED



EN ISO 6134 Type 2 Class A (Ω) 1.8 MPa / 270 PSI WP – 10.1260.R

Saturated Steam steel braid hose +210°C (+410°F)

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1260.08R	1/2"	12,7	24,00	**1,8**	270	**18,0**	2700	150
10.1260.12R	3/4"	19,0	33,00	**1,8**	270	**18,0**	2700	230
10.1260.16R	1"	25,4	39,00	**1,8**	270	**18,0**	2700	300
10.1260.20R	1.1/4"	31,8	47,00	**1,8**	270	**18,0**	2700	375
10.1260.24R	1.1/2"	38,1	53,00	**1,8**	270	**18,0**	2700	455
10.1260.32R	2"	50,8	68,00	**1,8**	270	**18,0**	2700	600
10.1260.40R	2.1/2"	63,0	83,00	**1,8**	270	**18,0**	2700	675
10.1260.48R	3"	76,0	98,00	**1,8**	270	**18,0**	2700	725

INNER TUBE: EPDM compound
REINFORCEMENT: high tensile steel wire braids

OUTER TUBE: red, heat, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 10:1

APPLICATION: super heated steam services in chemical plants, steel mills, refineries, shipyards

TEMPERATURE RANGE: -40°C (-40°F) +210°C (+410°F)
NOTE: For longer life, drain after use

BALFLEX / SUPERSTEAM EN ISO 6134 Type 2 CLASS A (Ω) - 210°C / 410°F - DN12 - 1/2" - WP 1.8 MPa 270 PSI

LPG DELIVERY HOSE



LPG 2.5MPa / 350PSI hose – 10.1214.

Liquefied Petroleum Gas delivery hose, long length.

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1214.04	1/4"	6,0	15,0	**2,5**	370	**7,5**	1100	100
10.1214.05	5/16"	8,0	16,0	**2,5**	370	**7,5**	1100	114
10.1214.06	3/8"	9,5	19,0	**2,5**	370	**7,5**	1100	127
10.1214.08	1/2"	12,7	23,00	**2,5**	370	**7,5**	1100	178
10.1214.12	3/4"	19,0	31,00	**2,5**	370	**7,5**	1100	240
10.1214.16	1"	25,4	38,00	**2,5**	370	**7,5**	1100	300
10.1214.20	1.1/4"	32,0	45,00	**2,5**	370	**7,5**	1100	419
10.1214.24	1.1/2"	38,0	52,00	**2,5**	370	**7,5**	1100	500
10.1214.32	2"	50,8	67,00	**2,5**	370	**7,5**	1100	630

INNER TUBE: seamless synthetic rubber resistant to LPG
REINFORCEMENT: 2 high resistance synthetic fiber braid

OUTER TUBE: black wrapped, smooth, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: LPG (Liquefied Petroleum Gas)

TEMPERATURE RANGE: -30°C (-22°F) +100°C (+212°F)

BALFLEX / LPG / GPL DIN EN 1762 - 1/4" - MAX WP 2.5 MPa 350 PSI

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Balflex®

XLPE ACID-SOLVENT & CHEMICAL S&D



Corrosive Chemicals and Solvents Translucent XLPE (Cross Linked Polyethylene) 1.7MPa / 250PSI W.P. S&D hose – 10.1270

Reinforced with several high resistance synthetic fiber braids with steel helix and antistatic copper line

#		ID	OD	MPa				MIN BEND RAD
	inch	mm	mm	MPa	PSI	MPa	PSI	mm
10.1270.020	3/4"	19,0	32,0	**1,7**	250	**5,1**	750	136
10.1270.025	1"	25,0	38,0	**1,7**	250	**5,1**	750	152
10.1270.032	1.1/4"	31,8	46,0	**1,7**	250	**5,1**	750	192
10.1270.040	1.1/2"	38,1	52,0	**1,7**	250	**5,1**	750	228
10.1270.050	2"	50,8	65,0	**1,7**	250	**5,1**	750	306
10.1270.063	2.1/2"	63,5	78,0	**1,7**	250	**5,1**	750	381
10.1270.075	3"	76,2	92,0	**1,7**	250	**5,1**	750	457
10.1270.100	4"	101,6	119,0	**1,7**	250	**5,1**	750	610

INNER TUBE: corrosive acid-solvents and chemicals translucent XLPE (cross linked polyethylene)
REINFORCEMENT: several high resistance synthetic fiber braids with a steel helix

OUTER TUBE: green, weather and abrasion resistant synthetic rubber, with antistatic copper line
SAFETY FACTOR: 3:1

APPLICATION: suction and delivery of strong acids, corrosive chemicals, high aromatic solvents. Suitable for 90% of existing chemicals

TEMPERATURE RANGE: -30°C (-22°F) +65°C (+150°F)

BALFLEX XLPE ACID - SOLVENT & CHEMICAL S & D - DN19 - 3/4" - WP 1.7 MPa 250 PSI

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UHMWPE ACID-SOLVENT & CHEMICAL S&D



Chemicals and Acid-Solvent Translucent UHMWPE (Ultra High Molecular Weight Polyethylene) 1.7MPa / 250PSI W.P. S&D hose – 10.1275

Reinforced with several high resistance synthetic fiber braids with steel helix and antistatic copper line

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1275.020	3/4"	19,0	32,0	**1,7**	250	**5,1**	750	136
10.1275.025	1"	25,0	38,0	**1,7**	250	**5,1**	750	152
10.1275.032	1.1/4"	31,8	46,0	**1,7**	250	**5,1**	750	192
10.1275.040	1.1/2"	38,1	52,0	**1,7**	250	**5,1**	750	228
10.1275.050	2"	50,8	65,0	**1,7**	250	**5,1**	750	306
10.1275.063	2.1/2"	63,5	78,0	**1,7**	250	**5,1**	750	381
10.1275.075	3"	76,2	92,0	**1,7**	250	**5,1**	750	457
10.1275.100	4"	101,6	119,0	**1,7**	250	**5,1**	750	610

INNER TUBE: corrosive acid-solvents and chemicals translucent UHMWPE (ultra high molecular weight polyethylene)
REINFORCEMENT: several high resistance synthetic fiber braids with a steel helix

OUTER TUBE: blue, weather and abrasion resistant synthetic rubber, with antistatic copper line
SAFETY FACTOR: 3:1

APPLICATION: suction and delivery of strong acids, corrosive chemicals, high aromatic solvents. Suitable for 98% of existing chemicals

TEMPERATURE RANGE: -40°C (-40°F) +80°C (+176°F)

BALFLEX UHMWPE ACID - SOLVENT & CHEMICAL S & D - DN19 - 3/4" - WP 1.7 MPa 250 PSI

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Balflex®

FOOD FATTY S&D



Food 1.0MPa / 150PSI W.P. S&D hose – 10.1285

Reinforced with several high resistance synthetic fiber braids with steel helix.
FDA approved compounds.

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1285.020	3/4"	19,0	32,0	**1,0**	150	**3,0**	300	136
10.1285.025	1"	25,0	38,0	**1,0**	150	**3,0**	300	152
10.1285.032	1.1/4"	31,8	46,0	**1,0**	150	**3,0**	300	192
10.1285.040	1.1/2"	38,1	52,0	**1,0**	150	**3,0**	300	228
10.1285.050	2"	50,8	66,0	**1,0**	150	**3,0**	300	306
10.1285.063	2.1/2"	63,5	80,0	**1,0**	150	**3,0**	300	381
10.1285.075	3"	76,2	93,0	**1,0**	150	**3,0**	300	457
10.1285.100	4"	101,6	120,0	**1,0**	150	**3,0**	300	610

INNER TUBE: white color, non-toxic rubber compound
REINFORCEMENT: several high resistance synthetic fiber braids with a steel helix

OUTER TUBE: blue, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: suction and delivery of foodstuff. Highly recommended for transfer milk and other high-fat dairy products.
For our fatty food hose, if the operation/ application temperature is not exceeded 90°C, basically it would be no problem to transfer for beer and wine but not okay for juices.
For juices, it's recommended to use for the non-fatty type food hose which is of EPDM blended material.

TEMPERATURE RANGE: -20ºC (-4ºF) +80ºC (+176ºF)

BALFLEX FOOD FATTY S&D - 3/4" - 19mm - WP 1 MPa 150 PSI - FDA

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FUEL PUMP



EN 1360 – 1 / ISO 7840 - 1 — 10.1221

Fuel dispensing hose polyester braid

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1221.10	5/8"	16,0	26,0	**1,6**	240	**4,8**	720	80
10.1221.12	3/4"	19,0	30,0	**1,6**	240	**4,8**	720	100
10.1221.16	1"	25,4	37,0	**1,6**	240	**4,8**	720	150

INNER TUBE: petrol, gasoline and fuel seamless resistant synthetic rubber
REINFORCEMENT: high tensile polyester braid and antistatic copper line

OUTER TUBE: oil, weather, ozone, abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: dispensing of fuel, gasoline, ethanol, unleaded petrol and diesel oil

TEMPERATURE RANGE: -40°C (-40°F) +120°C (+248°F)
COUPLINGS: reusable or crimped Balflex® FUEL PUMP coupling serie

BALFLEX / FUEL PUMP EN 1360 - DN16 - 5/8" - WP 1.6 MPa 232 PSI - R < 1MΩ - DATE

FUEL PUMP STEEL



According to EN 1360 – 3 / ISO 7840 - 3 — 10.1222

Fuel dispensing hose steel braid

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1222.10	5/8"	16,0	25,4	**1,8**	270	**5,4**	810	80
10.1222.12	3/4"	19,0	28,7	**1,8**	270	**5,4**	810	100
10.1222.16	1"	25,4	35,1	**1,8**	270	**5,4**	810	150

INNER TUBE: petrol, gasoline and fuel seamless resistant synthetic rubber
REINFORCEMENT: high tensile steel braid

OUTER TUBE: oil, weather, ozone, abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: dispensing of fuel, gasoline, ethanol, unleaded petrol and diesel oil

TEMPERATURE RANGE: -40°C (-40°F) +120°C (+248°F)
COUPLINGS: reusable or crimped Balflex® FUEL PUMP coupling serie

BALFLEX / FUEL PUMP EN 1360 - DN16 - 5/8" - STEEL - WP 1.8 MPa 260 PSI - R < 1MΩ - DATE

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Balflex®

SINGLE WELDING



According to ISO 3821 class B / DIN EN 559 / RMA / CGA IP-7 grade R – 10.1227.-A

Oxygen and Acetylene 2.0MPa / 300PSI (100% rubber hose)

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm
10.1227.04A	1/4"	6,4	13,8	**2,0**	300	**6,0**	900	60
10.1227.05A	5/16"	8,0	15,5	**2,0**	300	**6,0**	900	80
10.1227.06A	3/8"	9,5	17,0	**2,0**	300	**6,0**	900	100

INNER TUBE: seamless oxygen or acetylene resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic fiber braid

OUTER TUBE: red, green or blue, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 3:1
APPLICATION: welding equipments

TEMPERATURE RANGE: -35°C (-31°F) +100°C (+212°F)

BALFLEX WELDING - DN6 - 1/4" - ISO 3821-B / EN 559 - WARNING ACETYLENE ONLY - WP 2 MPa / 300 PSI - DATE

SINGLE WELDING BLUE



According to ISO 3821 class B / DIN EN 559 / RMA / CGA IP-7 grade R – 10.1229

Oxygen and Acetylene 2.0MPa / 300PSI (100% rubber hose)

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD mm
10.1229.04	1/4"	6,4	13,8	**2,0**	300	**6,0**	900	60
10.1229.05	5/16"	8,0	15,5	**2,0**	300	**6,0**	900	80
10.1229.06	3/8"	9,5	17,0	**2,0**	300	**6,0**	900	100

INNER TUBE: seamless oxygen or acetylene resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic fiber braid

OUTER TUBE: red, green or blue, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 3:1
APPLICATION: welding equipments

TEMPERATURE RANGE: -35°C (-31°F) +100°C (+212°F)

BALFLEX WELDING - DN6 - 1/4" - ISO 3821-B / EN 559 - OXYGEN - WP 2 MPa / 300 PSI - DATE

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TWIN WELDING



According to ISO 3821 class B / DIN EN 559 / RMA / CGA IP-7 grade R – 10.1230

Oxygen and Acetylene 2.0MPa / 300PSI (100% rubber hose)

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm
10.1230.04	1/4"	6,4	13,8	**2,0**	300	**6,0**	900	60
10.1230.05	5/16"	8,0	15,5	**2,0**	300	**6,0**	900	80
10.1230.06	3/8"	9,5	17,0	**2,0**	300	**6,0**	900	100

INNER TUBE: seamless oxygen or acetylene resistant synthetic rubber
REINFORCEMENT: 2 high resistance synthetic fiber braid

OUTER TUBE: red and blue, weather and abrasion resistant synthetic rubber

SAFETY FACTOR: 3:1
APPLICATION: welding equipments

TEMPERATURE RANGE: -35°C (-31°F) +100°C (+212°F)

BALFLEX WELDING - DN6 - 1/4" - ISO 3821-B / EN 559 - WARNING ACETYLENE ONLY - WP 2 MPa / 300 PSI - DATE

BALFLEX WELDING - DN6 - 1/4" - ISO 3821-B / EN 559 - OXYGEN - WP 2 MPa / 300 PSI - DATE

HYDRAULIC BRAKE SAE J1401



According to SAE J 1401 — 10.1050

Sae J 1401 hydraulic brake hose 1/8"

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD mm	KG kg/m
10.1050.02	1/8"	-3	3,2	10,5	**20,0**	2900	**60,0**	8700	102	0,091

INNER TUBE: seamless, brake fluid resistant special compound synthetic rubber
REINFORCEMENT: 2 high tensile synthetic textile braids

OUTER TUBE: black wrapped, oil, weather and abrasion resistant synthetic rubber
SAFETY FACTOR: 3:1

APPLICATION: hydraulic brake lines for automobiles

TEMPERATURE RANGE: -40°C (-40°F) +100°C (+212°F)

HYDRAULIC BRAKE SAE J1401 - 1/8" - DOT - 20 MPa / 2900 PSI - DATE

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FUEL HOSE



10.1211

Low pressure, steel galvanized braid fuel line hose

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.1211.04	3/16"	5,0	10,0	**2,5**	375	**7,5**	1125	30	1.18	0,17
10.1211.06	1/4"	6,0	11,0	**2,5**	375	**7,5**	1125	30	1.18	0,22
10.1211.08	5/16"	8,0	13,0	**2,5**	375	**7,5**	1125	40	1.57	0,26
10.1211.10	3/8"	10,0	15,0	**2,5**	375	**7,5**	1125	50	1.97	0,33
10.1211.12	1/2"	13,0	19,0	**2,0**	300	**6,0**	900	65	2.56	0,50
10.1211.16	5/8"	16,0	22,0	**2,0**	300	**6,0**	900	80	3.15	0,56
10.1211.20	3/4"	20,0	25,0	**1,5**	225	**4,5**	675	95	3.74	0,62
10.1211.25	1"	25,0	33,0	**1,5**	225	**4,5**	675	125	4.92	0,71

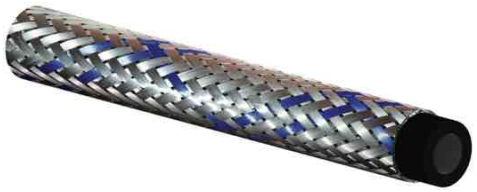
INNER TUBE: seamless nitrile rubber, resistant to oil

OUTER TUBE: 1 external galvanized steel braid AISI 1008

SAFETY FACTOR: 3:1
APPLICATION: automobile fuel lines, oil, gasoil and oil emulsion cooling water

TEMPERATURE RANGE: -20°C (-4°F) +90°C (+194°F)

WATERPUMP HOSE



10.1212

Low pressure, steel galvanized braid water hose

#	inch	ID mm	OD mm	MPa	PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.1212.10	3/8"	10,0	15,0	**2,5**	375	**7,5**	1125	100	3.94	0,22
10.1212.12	1/2"	13,0	19,0	**2,5**	375	**7,5**	1125	130	5.12	0,26
10.1212.16	5/8"	16,0	23,0	**2,0**	300	**6,0**	900	160	6.30	0,33
10.1212.20	3/4"	20,0	26,0	**2,0**	300	**6,0**	900	190	7.48	0,50
10.1212.25	1"	25,0	33,0	**1,5**	225	**4,5**	675	250	9.84	0,56
10.1212.32	1.1/4"	32,0	43.0	**1,0**	150	**3,0**	450	320	12.60	1.10
10.1212.40	1.1/2"	40.0	51.0	**1,0**	150	**3,0**	450	380	14.96	1.53
10.1212.50	2"	50,0	64.0	**1,0**	150	**3,0**	450	510	20.08	1.75

INNER TUBE: seamless nitrile rubber, resistant to water

OUTER TUBE: 1 external galvanized steel braid AISI 1008

SAFETY FACTOR: 3:1
APPLICATION: water pumps

TEMPERATURE RANGE: -30°C (-22°F) +100°C (+212°F)

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AUTOMOTIVE AIR CONDITIONING VENEER TYPE



According to SAE J 2064 and ISO 8066 — 10.1300

Air Conditioning hose R134a

#	inch	SAE Dash	ID mm	OD mm	MIN BEND RAD mm	KG kg/m
10.1300.06	5/16"	-6	8,0	19,0	76,2	0,30
10.1300.08	13/32"	-8	10,6	22,6	88,9	0,41
10.1300.10	1/2"	-10	12,7	25,4	101,6	0,47
10.1300.12	5/8"	-12	16,2	28,1	114,3	0,55

INNER TUBE: seamless resistant synthetic rubber with PA barrier
REINFORCEMENT: high resistance synthetic fiber braid

OUTER TUBE: pi-pricked black, weather and abrasion resistant synthetic rubber

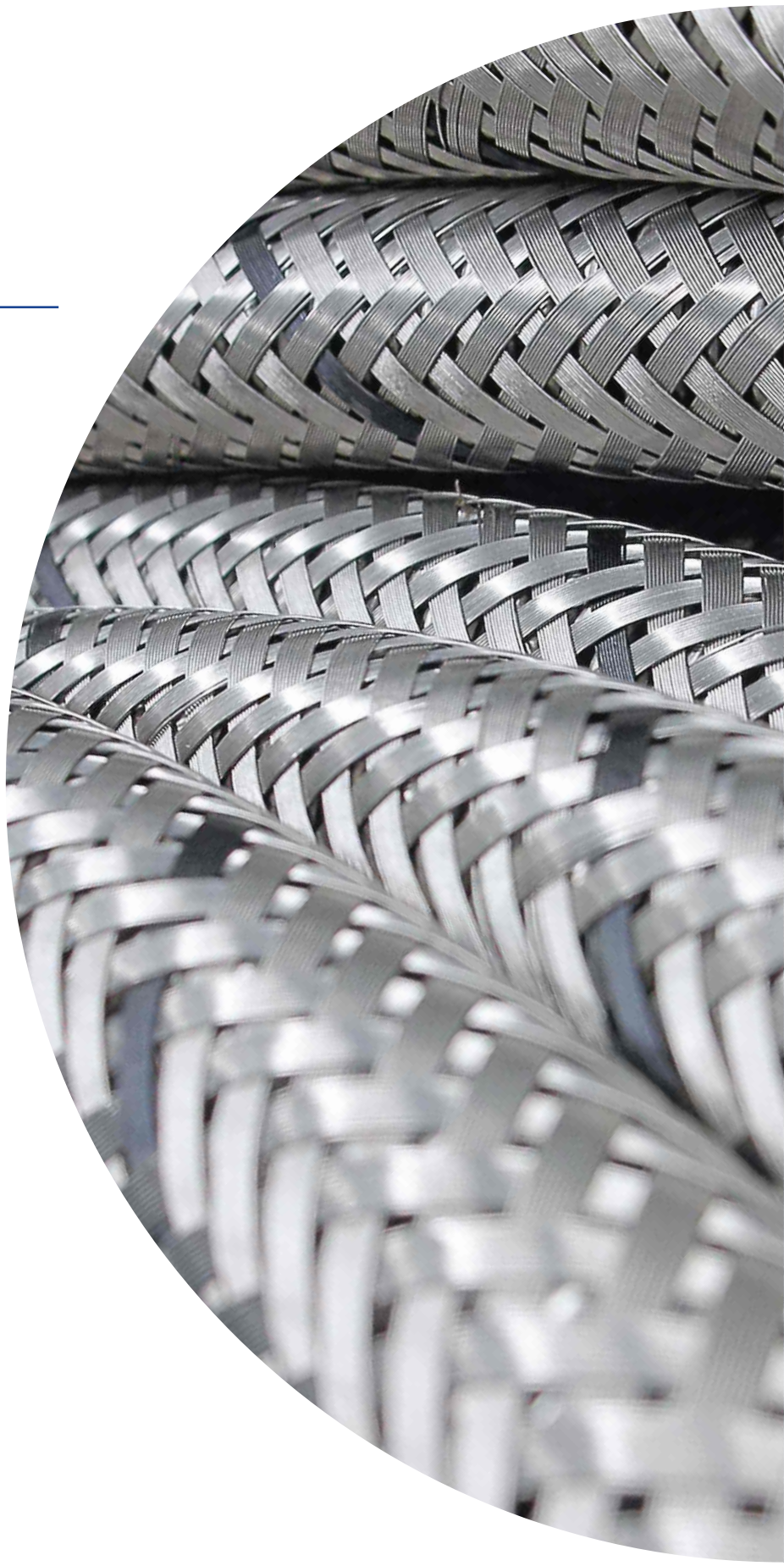
APPLICATION: air conditioning hose for mobile R12 and R134a systems; PAG, ester and mineral lubricants

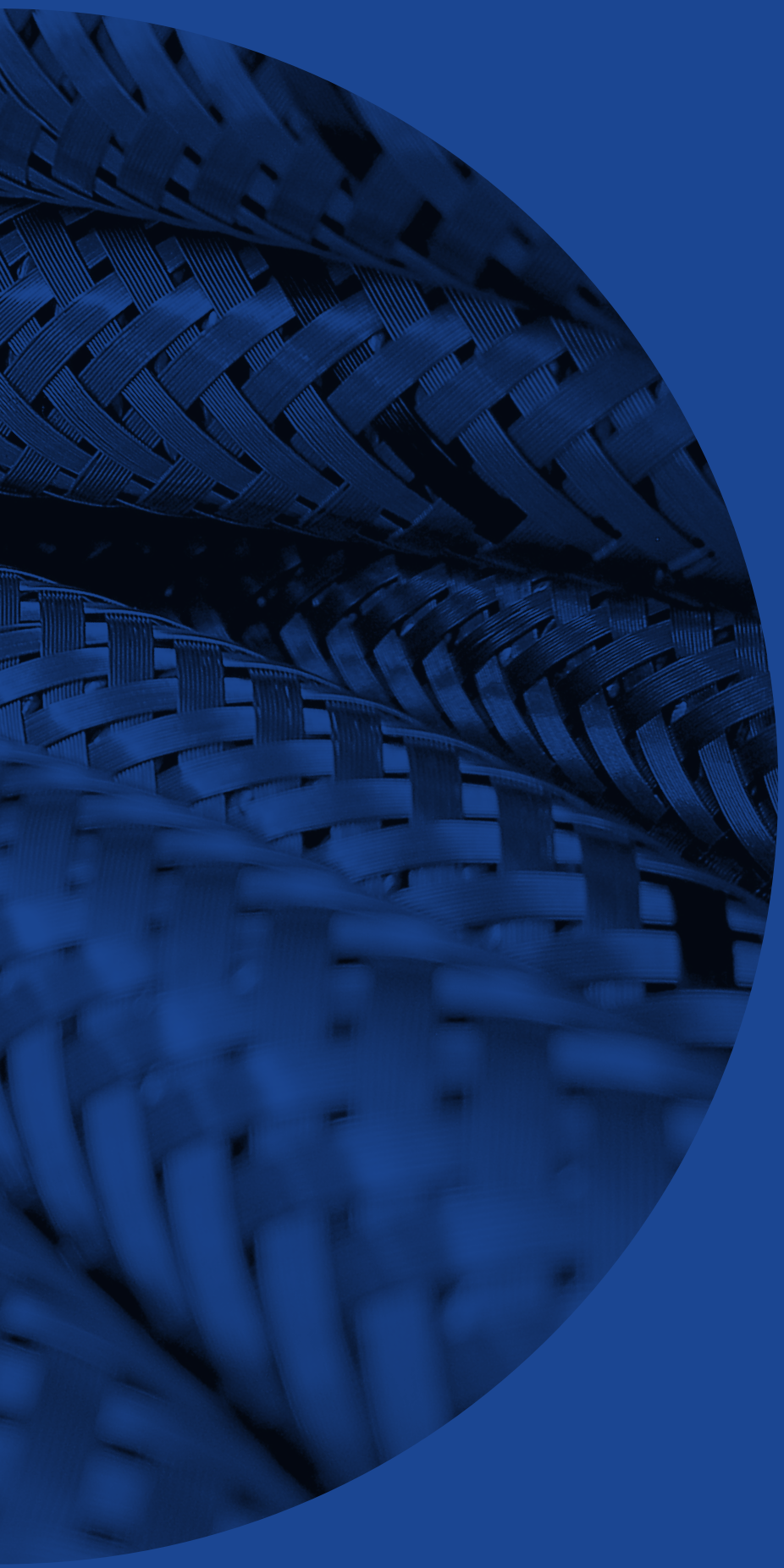
TEMPERATURE RANGE: -30°C (-22°F) +125°C (+257°F)

BALFLEX ECOCLIMA A/C HOSE - R134a - 5/16" - SAE J2064 - ISO 8066

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Inox Hoses





pag. 142 **BALINOX 321 UNBRAIDED**

pag. 143 **BALINOX 321+BRAID 304**

pag. 144 **BALINOX 321+DOUBLE BRAID 304**

pag. 145 **BALINOX 316 UNBRAIDED**

pag. 146 **BALINOX 316+BRAID 304**

pag. 147 **BALINOX 316+DOUBLE BRAID 304**

pag. 148 **BRAID 304**

pag. 149 **EXHAUST TUBE**

pag. 150 **WELDING RINGS**

Balinox

Balinox is the corrugated stainless steel hose range by Balflex®. Balinox stainless steel hoses are produced to Balflex® specifications and to ISO 10380 type 2 standards. It covers a wide variety of low to very high-pressure applications, in different grades of stainless steel, with different construction methods of the inner tube and of the reinforcement braid.

Stainless steel hoses facilitate relative movement of the parts to be connected, adapt to thermal expansion, resist to high pressure and offer good corrosion resistance to a wide range of fluids.

Balflex® optimized the production of these hoses in order to assure the highest performance and the most extensive range of applications. The Balinox range of stainless steel hoses offer a very wide variety of materials and construction solutions in order to suit the particular problems to be addressed.

The Balinox range of metal hoses in this catalogue includes:

- **Balinox 10.5211.** - Wide pitch annular corrugated stainless steel AISI 321 / EN 1.4541 hose with one braid AISI 304 / EN 1.4404
- **Balinox 10.5161.** - Wide pitch annular corrugated stainless steel AISI 316L / EN 1.4301 hose with one braid AISI 304 / EN 1.4404
- **Balinox 10.5104.** - Wide pitch annular corrugated stainless steel AISI 304 / EN 1.4404 hose with one braid AISI 304 / EN 1.4404

General Guidelines

Normally, the following aspects should be considered when choosing a stainless steel hose:

- the chemical reactivity of the product to be conveyed by the hose;
- the temperature of the product to be conveyed;
- the pressure of the product to be conveyed;
- the kind of flow of the product to be conveyed (pulsation or high velocity);
- the geometry of the parts to be connected and the degree of movement required, the bend radius and unsupported lengths;
- the environmental conditions.

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1. Suitability of corrugated metal hose assemblies

Corrugated metal hose assemblies are basically suitable for the transport of critical fluids under pressure and temperature. The required flexibility of the corrugated hose generally results in a wall thickness considerably smaller than that of all other parts of the system in which they are installed. Therefore, increasing the wall thickness of the hose to prevent damages caused by corrosion is not reasonable and it becomes essential to select a suitable material for the flexible element which is sufficiently resistant against all corrosive media that may occur during the entire lifetime. In many cases, the hose has to be manufactured out of a material with even higher corrosion resistance than those of the system parts it is connected to.

In addition, possible corrosive environmental effects must be considered. The material selection must take into account all possible kinds of corrosion, especially pitting corrosion, intergranular corrosion, crevice corrosion and stress corrosion cracking (SCC).

2. Selection of a suitable material

The material for the corrugated hose is to be selected according the specific aggressiveness of the operating fluid or of the surrounding atmosphere.

Recommendations for the selection of materials are given under *www.euroqualiflex.com*.

3. Prevention of corrosive effects during operation of the plant

Any uncertainties concerning the exact composition of the working fluid, differing operating states, and other peripheral service conditions may additionally increase the danger of corrosion and have to be taken into account.

4. Responsibility of the hose manufacture

The responsibility of the hose manufacturer covers the functional design of the hose assembly according to the given information, as pressures, temperatures, movements, kind of application and additional loadings, and also the material concerning its formability and weldability.

In addition,BALFLEX techn staff contribute their wide scope of experience when assisting the user in selecting a suitable material for the special application. But, with regard to the influences of the actual operating situation given (see point 3) only the user can take full responsibility for the selected material. The advice of the hose manufacturer can only be given without obligation, i.e. without any liability for the material to be properly selected.

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Selection of the hose

Chemical reactivity

Balinox Stainless Steel hose is supplied in the following grades:

- AISI 321 / EN 1.4541
- AISI 316 / EN 1.4401

The different grades have different chemical resistance to the fluids or gases to be conveyed. **AISI 321 / EN 1.4541** grade suits most applications; **AISI 316 / EN 1.4401** is used for more demanding applications. The Chemical Resistance Chart shows the suitability of the two grades in terms of corrosion resistance to the most common products to be conveyed.

The corrosion resistance of the end fittings should also be considered at this point. **AISI 321 / EN 1.4541** can be used with stainless steel, carbon steel and copper based alloys fittings, which offer a wide variety of corrosion and mechanical resistance. Carbon steel fittings should not be welded on **AISI 316 / EN 1.4401** hose; normally **AISI 316 / EN 1.4401** applications require also stainless steel fittings.

Pulsating and high velocity flows

Pulsating flows, such as exhaust of alternating machines or discharge controlled by fast operating valves, can force the assembly into vibration, which causes premature failure of the assembly. High velocity flows (5 m/s for liquids, 10 m/s for saturated vapor and 50 m/s for gases) can also force the corrugations into vibration.

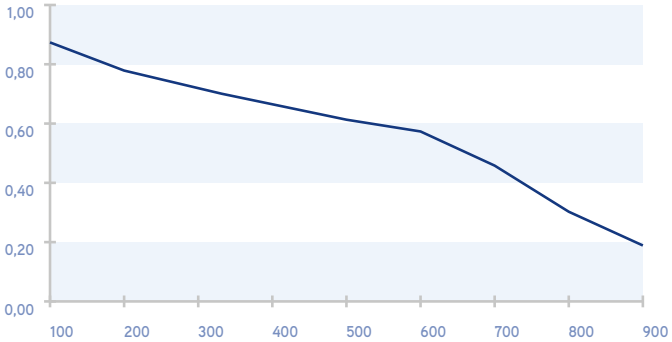
Vibrations can be avoided through the use of an adequate interlocked flexible internal liner, that smoothes the flow. Double-walled inner tube also reduces vibration hazard.

Temperature

The different grades allow different maximum working temperatures. The maximum working temperature is of 800°C (1472°F) for the **AISI 321 / EN 1.4541** and **AISI 316 / EN 1.4401** grades, and of 450°C for the **AISI 304 / EN 1.4404** grade. Brass fittings and galvanizing allow a maximum working temperature of 220°C (428°F).

High working temperatures and alternation of high and low temperatures accelerate corrosion and imply a decrease in life expectancy of the hose. Chart 1 recommends a de-rating factor for pressure rating and bend radius as a function of working temperature. Please consult for more information.

Chart 1: Temperature de-rating factor for working pressure:



NOTE: Enter the working temperature in °C (°F) in the horizontal axis and read the de-rating factor on the vertical axis. Apply this factor to the maximum working pressure of the hose rated for ambient temperature to obtain the actual working pressure at the project temperature. Likewise apply the inverse coefficient to the minimum bend radius.

Pressure

The construction type of the hose influences mainly it's mechanical resistance and flexibility. The corrugated inner tube allows for flexibility and tightness. The external braid or braids allow for increased pressure resistance. **Balinox®** hoses are supplied standard with none, one or two braids of **AISI 304 / EN 1.4404**. Other braids or external sleeves may be supplied and fit into the assemblies. Double-walled hoses allow higher working pressures while maintaining high flexibility.

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Installation geometry

The construction type of the hose influences mainly it's mechanical resistance and flexibility. Balinox® Stainless Steel hose is supplied in the following construction variations:

- annular or helical corrugated
- narrow or wide pitch
- single or double walled
- unbraided or braided
- unlined or lined

The flexibility of the hose is limited. The minimum bend radius of the hose is a very important parameter for hose selection. Installation should always take into consideration the need to respect the minimum bend radius of the hose. The static minimum bend radius is the minimum bend radius that can be achieved once, at installation, for connection of static parts. The dynamic minimum bend radius is the minimum flexure radius that shall be considered for a constant motion.

The determination of the length of the hose should allow for thermal expansion and for the minimum bend radius necessary for the motion and offset of the assembly. Flexing must be always limited to one plane.

The catalogue pages list the minimum bend radius of the standard **Balinox®** hoses. For other construction variations please consult. Table 2 gives equations for calculation of hose lengths for different common situations.

Care should be given to fluid and hose weight on unsupported lengths of hose and its effect on bending the hose beyond the minimum bend radius. Hose support should be used in order to restrain the hose at the inferior horizontal axis level.

Environmental conditions

Abrasion can damage the external braid and thus reduce sharply the pressure resistance of the hose. External abrasion, mechanical shock or external exposure to extreme temperatures and aggressive media should be considered when choosing external braid, sleeves or other protection elements. A larger diameter metal or rubber hose may be fit on the outside, as well as insulating braided sleeves.

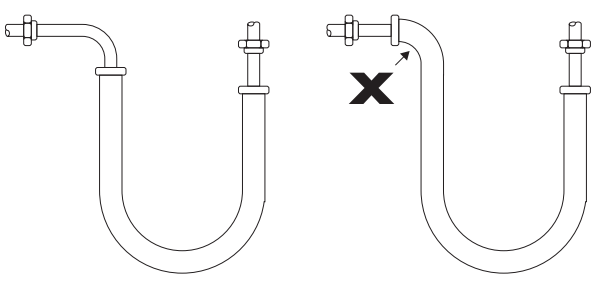
Assembly, Installation and Servicing

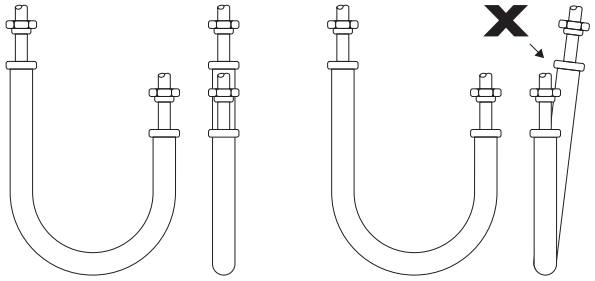
All hoses should be handled and installed without twisting or torsion (see examples below). The twisting of the hose causes shear stress and significantly reduces service life. To avoid the possibility of applying torsion when tightening fittings, free swiveling connections should be used at both ends.

Braid damage significantly reduces pressure resistance. Visual inspection of the outer braid should be made. Braids that show wire cuts should be proportionally pressure underrated.

Stainless steel hoses should be hydrostatically tested before installation at 150% of working pressure for 1 minute.

Some applications require special cleaning procedures like degreasing, washing and drying. Care should be taken to use non-aggressive solvents. The same applies when servicing the equipment to which the hose were assembled.

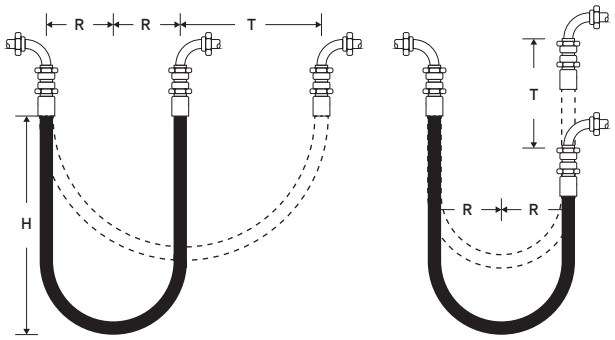




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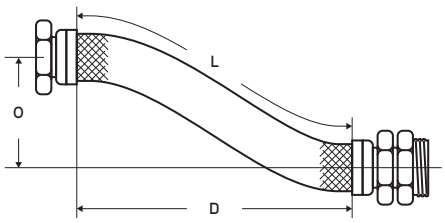
Equations for calculation of hose lengths

1 Equation for calculation of hose length in an installation with a 180° loop and travel length in the same plane:



L = X + π R + 1/2 T
H = 1/2 (L - π R) + R

2 Equation for calculation of hose length in an off-set static installation:



L = X + 2,86 Rs arccos (1 - O / 2Rs)
D = 2,86 Rs sin (L / 2,86 Rs)

3 Equation for calculation of hose length in an off-set dynamic installation:

L = X + 4,42 R arccos (1 - O / 2R)
D = 4,42 R sin (L/ 4,42 R)

in which
L = Developed length of the hose
X = constant (see table 2.4) for the straight length needed at the end of the hose
R = radius of the half loop (≥ dynamic minimum bend radius)
Rs = static minimum bend radius
T = travel distance of the moving end of the hose
O = Off-set of the two ends of the hose
D = Distance between hose ends

4 Table for determination of the straight length needed at the end of the hose:

DN	6	10	16	19	25	31	39	50
X (mm)	50	75	100	125	150	175	200	250

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Stainless Steel Chemical Resistance Chart

🟢 Recommended 🟡 Recommended with Restrictions 🔴 Not Recommended

Fluids	SS GRADE	
	AISI 316L	AISI 321
Acetic acid all concentrations, 20°C	🟢	🟢
Acetic acid all concentrations, boiling	🟡	🔴
Acetic anhydride	🟢	🟢
Acetone	🟢	🟢
Acetyl chloride	🟡	🟡
Acetylene	🟢	🟢
Air	🟢	🟢
Aluminium acetate	🟢	🟢
Aluminium chloride, 10%, quiescent	🔴	🔴
Aluminium chloride, 25%, quiescent	🟢	🟢
Aluminium hydroxide	🟢	🟢
Aluminium sulfate all concentrations, 20°C	🟢	🟢
Aluminium sulfate, boiling	🟢	🟡
Ammonia, anhydrous	🟢	🟢
Ammonia, anhydrous hot gas	🔴	🔴
Ammonia, liquor	🟢	🟢
Ammonium bromide	🟢	🟡
Ammonium carbonate, 1% - 5%	🟢	🟢
Ammonium chloride, 1% - 10%	🟢	🟢
Ammonium chloride, higher concentrations	🟢	🟡
Ammonium bicarbonate, hot	🟢	🟢
Ammonium hydroxide all concentrations	🟢	🟢
Ammonium monophosfate	🟢	🟢
Ammonium nitrate, boiling	🟢	🟢
Ammonium oxalate, 5%	🟢	🟢
Ammonium perchlorate 10%, boiling	🟢	🟢
Ammonium persulfate, 5%	🟢	🟢
Ammonium phosphate, 5%	🟢	🟢
Ammonium sulfate, 1% - 5%	🟢	🟡
Ammonium sulfate, 10%	🟢	🟢
Ammonium sulfite, 20°C, boiling	🟢	🟢
Amyl acetate, amyl chloride	🟢	🟢

Fluids	SS GRADE	
	AISI 316L	AISI 321
Aniline	🟢	🟢
Argon, liquid	🟢	🟢
Barium carbonate	🟢	🟢
Barium hydroxide	🟢	🟢
Barium nitrate	🟢	🟢
Barium sulfate	🟢	🟢
Barium sulfide	🟢	🟢
Benzene, 20°C or hot	🟢	🟢
Benzoic acid	🟢	🟢
Boric acid,	🟢	🟢
Borax, 5%	🟢	🟢
Butane	🟢	🟢
Butyl acetate	🟢	🟢
Butyric acid	🟢	🟢
Calcium carbonate	🟢	🟢
Calcium chlorate	🟢	🟢
Calcium chloride	🟢	🟢
Calcium hypochlorite, 2%	🟢	🟢
Calcium hydroxide, 10% - 20%	🟢	🟢
Calcium sulfate, saturated	🟢	🟢
Carbonated water	🟢	🟢
Carbonic acid, saturated solution	🟢	🟢
Carbon dioxide	🟢	🟢
Carbon disulfide	🟢	🟢
Carbon tetrachloride	🟢	🟢
Carbon tetrachloride, commercial + 1% water	🔴	🔴
Cellulose	🟢	🟢
Chloracetic acid	🔴	🔴
Chlorine gas	🔴	🔴
Chlorinated water, saturated	🟢	🟢
Chloroform	🟢	🟢
Chromium plating bath	🟢	🟢

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Fluids	SS GRADE	
	AISI 316L	AISI 321
Chloroethane	🟢	🟢
Citric acid, still	🟢	🟢
Citric acid, boiling	🟢	🟡
Copper acetate	🟢	🟢
Copper carbonate	🟢	🟢
Copper cyanide	🟢	🟢
Copper nitrate	🟢	🟢
Copper sulfate	🟢	🟢
Creosote	🟢	🟢
Cyanogen gas	🟢	🟢
Cichloroethane	🟢	🟢
Diethyl ether	🟢	🟢
Ethylene glycol	🟢	🟢
Ethanol, 20°C and boiling	🟢	🟢
Ethyl acetate concentrated solution	🟢	🟢
Ethylene chloride	🟢	🟢
Fluorine, gas, moist	🔴	🔴
Formaldehyde, 40%	🟢	🟢
Formic acid	🟢	🟡
Furfural	🟢	🟢
Gglue solution (acid)	🟢	🟡
Glycerine	🟢	🟢
Hydrochloric acid	🔴	🔴
Hydrocyanic acid	🟢	🟢
Hydrofluoric acid	🔴	🔴
Hydrogen peroxide	🟢	🟡
Hydrogen sulfide, dry	🟢	🟢
Hydrogen sulfide, wet	🟢	🟡
Iodoform	🟢	🟢
Iron 2 chloride	🟢	🔴
Iron 3 chloride, 1%, 20°C	🟢	🟡
Iron 3 chloride, 1%, boiling	🔴	🔴
Iron 3 hydroxide	🟢	🟢
Iron 3 nitrate	🟢	🟢
Iron 2 sulfate	🟢	🟢
Kerosene	🟢	🟢

Fluids	SS GRADE	
	AISI 316L	AISI 321
Lactic acid, 1%	🟢	🟢
Lactic acid, 5% and more, 20°C	🟢	🟢
Lactic acid, 5% and more, boiling	🟢	🟡
Lead diacetate, 5%	🟢	🟢
Linseed oil	🟢	🟢
Magnesium chloride quiescent, 20°C	🟢	🟢
Magnesium chloride quiescent, hot	🟡	🔴
Magnesium sulfate	🟢	🟢
Mercury	🟢	🟢
Methane, liquid	🟢	🟢
Methanol, boiling	🟡	🔴
Naphtha	🟢	🟢
Naphthalene sulphonic acid	🟢	🟢
Nickel chloride solution	🟢	🟢
Nickel sulfate	🟢	🟢
Nitre cake	🟢	🟡
nitric acid 5%, 50%, 70%, boiling	🟢	🟢
nitric acid, 65%, 20°C	🟢	🟢
nitric acid, 65%, boiling	🟡	🟡
nitric acid, concentrated, 20°C	🟢	🟢
Nitric acid, concentrated, boiling	🔴	🔴
Nitrogen, liquid	🟢	🟢
Oil, crude	🟢	🟢
Oil, vegetable, mineral	🟢	🟢
Oleic acid	🟢	🟢
Oxalic acid, 20°C	🟢	🟢
Oxalic acid, boiling	🔴	🔴
Oxygen, liquid	🟢	🟢
Paraffin, hot	🟢	🟢
Petrol	🟢	🟢
Petroleum ether	🟢	🟢
Phenol	🟢	🟢
Phosphoric acid, 1%, 5%	🟢	🟢
Phosphoric acid, 10%, quiescent	🟢	🔴
Phosphoric acid, 80%	🔴	🔴
Potassium bromide	🟢	🟡

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Fluids	SS GRADE	
	AISI 316L	AISI 321
Potassium carbonate	🟢	🟢
Potassium chlorate	🟢	🟢
Potassium chloride	🟢	🟢
Potassium chromium sulfate, 5%	🟢	🟢
Potassium cyanide	🟢	🟢
Potassium bichromate	🟢	🟢
Potassium ferricyanide	🟢	🟢
Potassium oxalate	🟢	🟢
Potassium hydroxide, 5%, 27%	🟢	🟢
Potassium hypochlorite	🟡	🟡
Potassium nitrate	🟢	🟢
Potassium permanganate, 5%	🟢	🟢
Potassium sulfate	🔴	🔴
Potassium sulphite	🟢	🟢
Propane	🟢	🟡
Sea water	🟡	🔴
Silver bromide	🟢	🟡
Silver nitrate	🟢	🟢
Sodium acetate	🟢	🟢
Sodium carbonate, 5%, 50%	🟢	🟢
Sodium chloride, saturated, 20°C	🟢	🟢
Sodium chloride saturated, boiling	🟢	🟡
Sodium cyanide	🟢	🟢
Sodium fluoride, 5%, solution	🟢	🟡
Sodium bicarbonate	🟢	🟢
Sodium bisulfate, solution	🟢	🟢
Sodium bisulfate saturated solution	🔴	🔴
Sodium hydroxide	🟢	🟢
Sodium hypochlorite	🔴	🔴
Sodium nitrate	🟢	🟢
Sodium perchlorate, 10%	🟢	🟢
Sodium phosphate	🟢	🟢
Sodium sulfate	🟢	🟢
Sodium sulfite	🟢	🟢
Sodium thiosulphate	🟢	🟢
Sodium thiosulphite	🟢	🟢

Fluids	SS GRADE	
	AISI 316L	AISI 321
Steam	🟢	🟢
Stearic acid	🟢	🟢
Sulfur, moist	🟢	🟡
Sulfur, molten	🟢	🟢
Sulfur chloride, dry	🔴	🔴
Sulfur dioxide gas, moist	🟢	🟡
Sulfur dioxide gas, dry	🟢	🟢
Sulfuric acid, 5%, 10%	🟡	🔴
Sulfuric acid, 50%	🔴	🔴
Sulfuric acid, concentrated, 20°C	🟢	🟢
Sulfuric acid concentrated, boiling	🔴	🔴
Sulphurous acid	🟡	🔴
Tannic acid	🟢	🟢
Tartaric acid, 20°C	🟢	🟢
Tartaric acid, boiling	🟢	🟡
Tin 2 chloride saturated	🟢	🔴
Tin 4 chloride solution	🔴	🔴
Trichloroacetic acid	🔴	🔴
Trichloroethylene, dry	🟢	🟢
Trichloroethylene, moist	🔴	🔴
Vinegar	🟢	🟢
Water, potable	🟢	🟢
Yeast	🟢	🟢
Zinc chloride, 5%, still	🟢	🟢
Zinc cyanide, moist	🟢	🟢
Zinc nitrate, solution	🟢	🟢
Zinc sulfate	🟢	🟢

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested.
Note: All data based on 20°C/70°F unless otherwise noted.

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BALINOX 321 UNBRAIDED



ISO 10380 TYPE 2 - 10.5210.

Stainless steel annular corrugated tube AISI 321 / EN 1.4541 Unbraided.

#	inch	ID mm	OD mm	MPa MPa	PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.5210.006	1/4"	6,0	9,6	**1,0**	145	**4,0**	580	25	85	0,08
10.5210.008	5/16"	8,0	12,1	**0,8**	116	**3,2**	464	32	125	0,09
10.5210.010	3/8"	10,0	14,3	**0,8**	116	**3,2**	464	38	140	0,11
10.5210.013	1/2"	12,0	16,7	**0,6**	87	**2,4**	348	45	140	0,12
10.5210.016	5/8"	16,0	21,6	**0,6**	87	**2,4**	348	58	160	0,19
10.5210.020	3/4"	20,0	26,8	**0,5**	73	**2,0**	290	70	170	0,25
10.5210.025	1"	25,0	32,2	**0,4**	58	**1,6**	232	85	190	0,35
10.5210.032	1.1/4	32,0	41,1	**0,4**	58	**1,6**	232	105	260	0,44
10.5210.040	1.1/2"	40,0	49,5	**0,3**	44	**1,2**	174	130	300	0,68
10.5210.050	2"	50,0	60,3	**0,3**	44	**1,2**	174	160	320	0,88
10.5210.065	2.1/2"	65,0	81,0	**0,15**	22	**0,6**	87	180	410	1,07
10.5210.075	3"	80,0	95,0	**0,15**	22	**0,6**	87	200	450	1,10
10.5210.100	4"	100,0	117,0	**0,10**	15	**0,4**	58	290	560	1,40
10.5210.125	5"	125,0	150,0	**0,10**	15	**0,4**	58	325	710	2,67
10.5210.150	6"	150,0	175,0	**0,10**	15	**0,4**	58	380	815	3,22
10.5210.200	8"	200,0	225,0	**0,10**	15	**0,4**	58	500	1015	4,85
10.5210.250	10"	250,0	278,0	**0,05**	7	**0,2**	29	620	1270	7,15

INNER TUBE: AISI 321 / EN 1.4541 annular corrugated stainless steel
OUTER COVER: none

SAFETY FACTOR: 4:1
APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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BALINOX 321 + BRAID 304



ISO 10380 TYPE 2 - 10.5211.

Stainless steel annular corrugated tube AISI 321 / EN 1.4541 with stainless steel braid AISI 304 / EN 1.4404

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.5211.006	1/4"	6,0	10,7	**12,0**	1740	**48,0**	6960	25	85	0,15
10.5211.008	5/16"	8,0	13,2	**10,0**	1450	**40,0**	5800	32	125	0,17
10.5211.010	3/8"	10,0	15,5	**9,0**	1305	**36,0**	5220	38	140	0,22
10.5211.013	1/2"	12,0	18,0	**8,0**	1160	**32,0**	4640	45	140	0,24
10.5211.016	5/8"	16,0	23,0	**7,0**	1015	**28,0**	4060	58	160	0,40
10.5211.020	3/4"	20,0	28,3	**6,4**	928	**25,6**	3712	70	170	0,50
10.5211.025	1"	25,0	33,5	**5,0**	725	**20,0**	2900	85	190	0,63
10.5211.032	1.1/4	32,0	42,8	**4,0**	580	**16,0**	2320	105	260	0,85
10.5211.040	1.1/2"	40,0	51,2	**3,5**	508	**14,0**	2030	130	300	1,17
10.5211.050	2"	50,0	62,5	**3,0**	435	**12,0**	1740	160	320	1,61
10.5211.065	2.1/2"	65,0	83,0	**2,4**	348	**9,6**	1392	180	410	1,99
10.5211.075	3"	80,0	97,0	**1,8**	261	**7,2**	1044	200	450	2,20
10.5211.100	4"	100,0	119,0	**1,6**	232	**6,4**	928	290	560	3,00
10.5211.125	5"	125,0	152,5	**1,4**	203	**5,6**	812	325	710	4,90
10.5211.150	6"	150,0	177,5	**1,0**	145	**4,0**	580	380	815	5,71
10.5211.200	8"	200,0	228,0	**0,8**	116	**3,2**	464	500	1015	9,15
10.5211.250	10"	250,0	281,0	**0,8**	109	**3,0**	435	620	1270	13,75

INNER TUBE: AISI 321 / EN 1.4541 annular corrugated stainless steel
OUTER COVER: one stainless steel AISI 304 / EN 1.4404 braid

SAFETY FACTOR: 4:1
APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: - 200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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BALINOX 321 + DOUBLE BRAID 304



ISO 10380 TYPE 2 - 10.5212.

Stainless steel annular corrugated tube AISI 321 / EN 1.4541 with double stainless steel braid AISI 304 / EN 1.4404

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.5212.006	1/4"	6,0	12,0	**19,2**	2784	**76,8**	11136	25	85	0,23
10.5212.008	5/16"	8,0	14,5	**16,0**	2320	**64,0**	9280	32	125	0,25
10.5212.010	3/8"	10,0	17,0	**14,4**	2088	**57,6**	8352	38	140	0,32
10.5212.013	1/2"	12,0	19,5	**12,8**	1856	**51,2**	7424	45	140	0,37
10.5212.016	5/8"	16,0	24,5	**11,2**	1624	**44,8**	6496	58	160	0,61
10.5212.020	3/4"	20,0	30,0	**10,2**	1479	**40,8**	5916	70	170	0,75
10.5212.025	1"	25,0	35,0	**8,0**	1160	**32,0**	4640	85	190	0,91
10.5212.032	1.1/4	32,0	44,5	**6,4**	928	**25,6**	3712	105	260	1,30
10.5212.040	1.1/2"	40,0	53,0	**5,6**	812	**22,4**	3248	130	300	1,66
10.5212.050	2"	50,0	64,5	**4,8**	696	**19,2**	2784	160	320	2,35
10.5212.065	2.1/2"	65,0	85,5	**3,8**	557	**15,4**	2227	180	410	2,92
10.5212.075	3"	80,0	100,0	**2,9**	418	**11,5**	1670	200	450	3,30
10.5212.100	4"	100,0	121,5	**2,6**	371	**10,2**	1485	290	560	4,75
10.5212.125	5"	125,0	155,0	**2,2**	325	**9,0**	1299	325	710	7,15
10.5212.150	6"	150,0	181,0	**1,6**	232	**6,4**	928	380	815	8,20
10.5212.200	8"	200,0	213,0	**1,3**	186	**5,1**	742	500	1015	13,50
10.5212.250	10"	250,0	285,0	**1,2**	174	**4,8**	696	620	1270	20,40

INNER TUBE: AISI 321 / EN 1.4541 annular corrugated stainless steel
OUTER COVER: two stainless steel AISI 304 / EN 1.4404 braids

SAFETY FACTOR: 4:1
APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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BALINOX 316 UNBRAIDED



ISO 10380 TYPE 2 - 10.5160.

Stainless steel annular corrugated tube AISI 316L / EN 1.4301 UNBRAIDED

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.5160.006	1/4"	6,0	9,6	**1,0**	145	**4,0**	580	25	85	0,08
10.5160.008	5/16"	8,0	12,1	**0,8**	116	**3,2**	464	32	125	0,09
10.5160.010	3/8"	10,0	14,3	**0,8**	116	**3,2**	464	38	140	0,11
10.5160.013	1/2"	12,0	16,7	**0,6**	87	**2,4**	348	45	140	0,12
10.5160.016	5/8"	16,0	21,6	**0,6**	87	**2,4**	348	58	160	0,19
10.5160.020	3/4"	20,0	26,8	**0,5**	73	**2,0**	290	70	170	0,25
10.5160.025	1"	25,0	32,2	**0,4**	58	**1,6**	232	85	190	0,35
10.5160.032	1.1/4	32,0	41,1	**0,4**	58	**1,6**	232	105	260	0,44
10.5160.040	1.1/2"	40,0	49,5	**0,3**	44	**1,2**	174	130	300	0,68
10.5160.050	2"	50,0	60,3	**0,3**	44	**1,2**	174	160	320	0,88
10.5160.065	2.1/2"	65,0	81,0	**0,15**	22	**0,6**	87	180	410	1,07
10.5160.075	3"	80,0	95,0	**0,15**	22	**0,6**	87	200	450	1,10
10.5160.100	4"	100,0	117,0	**0,10**	15	**0,4**	58	290	560	1,40
10.5160.125	5"	125,0	150,0	**0,10**	15	**0,4**	58	325	710	2,67
10.5160.150	6"	150,0	175,0	**0,10**	15	**0,4**	58	380	815	3,22
10.5160.200	8"	200,0	225,0	**0,10**	15	**0,4**	58	500	1015	4,85
10.5160.250	10"	250,0	278,0	**0,05**	7	**0,2**	29	620	1270	7,15

INNER TUBE: AISI 316L / EN 1.4301 annular corrugated stainless steel
OUTER COVER: none

SAFETY FACTOR: 4:1
APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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Balflex®

BALINOX 316 + BRAID 304



ISO 10380 TYPE 2 - 10.5161.

Stainless steel annular corrugated tube AISI 316L / EN 1.4301 with stainless steel braid AISI 304 / EN 1.4404

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.5161.006	1/4"	6,0	10,7	**12,0**	1740	**48,0**	6960	25	85	0,15
10.5161.008	5/16"	8,0	13,2	**10,0**	1450	**40,0**	5800	32	125	0,17
10.5161.010	3/8"	10,0	15,5	**9,0**	1305	**36,0**	5220	38	140	0,22
10.5161.013	1/2"	12,0	18,0	**8,0**	1160	**32,0**	4640	45	140	0,24
10.5161.016	5/8"	16,0	23,0	**7,0**	1015	**28,0**	4060	58	160	0,40
10.5161.020	3/4"	20,0	28,3	**6,4**	928	**25,6**	3712	70	170	0,50
10.5161.025	1"	25,0	33,5	**5,0**	725	**20,0**	2900	85	190	0,63
10.5161.032	1.1/4	32,0	42,8	**4,0**	580	**16,0**	2320	105	260	0,85
10.5161.040	1.1/2"	40,0	51,2	**3,5**	508	**14,0**	2030	130	300	1,17
10.5161.050	2"	50,0	62,5	**3,0**	435	**12,0**	1740	160	320	1,61
10.5161.065	2.1/2"	65,0	83,0	**2,4**	348	**9,6**	1392	180	410	1,99
10.5161.075	3"	80,0	97,0	**1,8**	261	**7,2**	1044	200	450	2,20
10.5161.100	4"	100,0	119,0	**1,6**	232	**6,4**	928	290	560	3,00
10.5161.125	5"	125,0	152,5	**1,4**	203	**5,6**	812	325	710	4,90
10.5161.150	6"	150,0	177,5	**1,0**	145	**4,0**	580	380	815	5,71
10.5161.200	8"	200,0	228,0	**0,8**	116	**3,2**	464	500	1015	9,15
10.5161.250	10"	250,0	281,0	**0,8**	109	**3,0**	435	620	1270	13,75

INNER TUBE: AISI 316L / EN 1.4301 annular corrugated stainless steel
OUTER COVER: one stainless steel AISI 304 / EN 1.4404 braid

SAFETY FACTOR: 4:1
APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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BALINOX 316 + DOUBLE BRAID 304



ISO 10380 TYPE 2 - 10.5162.

Stainless steel annular corrugated tube AISI 316L / EN 1.4301 with double stainless steel braid AISI 304 / EN 1.4404

#	inch	ID mm	OD mm	MPa MPa	MPa PSI	MPa	PSI	MIN BEND RAD STATIC mm	MIN BEND RAD FLEXING mm	KG kg/m
10.5162.006	1/4"	6,0	12,0	**19,2**	2784	**76,8**	11136	25	85	0,23
10.5162.008	5/16"	8,0	14,5	**16,0**	2320	**64,0**	9280	32	125	0,25
10.5162.010	3/8"	10,0	17,0	**14,4**	2088	**57,6**	8352	38	140	0,32
10.5162.013	1/2"	12,0	19,5	**12,8**	1856	**51,2**	7424	45	140	0,37
10.5162.016	5/8"	16,0	24,5	**11,2**	1624	**44,8**	6496	58	160	0,61
10.5162.020	3/4"	20,0	30,0	**10,2**	1479	**40,8**	5916	70	170	0,75
10.5162.025	1"	25,0	35,0	**8,0**	1160	**32,0**	4640	85	190	0,91
10.5162.032	1.1/4	32,0	44,5	**6,4**	928	**25,6**	3712	105	260	1,30
10.5162.040	1.1/2"	40,0	53,0	**5,6**	812	**22,4**	3248	130	300	1,66
10.5162.050	2"	50,0	64,5	**4,8**	696	**19,2**	2784	160	320	2,35
10.5162.065	2.1/2"	65,0	85,5	**3,8**	557	**15,4**	2227	180	410	2,92
10.5162.075	3"	80,0	100,0	**2,9**	418	**11,5**	1670	200	450	3,30
10.5162.100	4"	100,0	121,5	**2,6**	371	**10,2**	1485	290	560	4,75
10.5162.125	5"	125,0	155,0	**2,2**	325	**9,0**	1299	325	710	7,15
10.5162.150	6"	150,0	181,0	**1,6**	232	**6,4**	928	380	815	8,20
10.5162.200	8"	200,0	213,0	**1,3**	186	**5,1**	742	500	1015	13,50
10.5162.250	10"	250,0	285,0	**1,2**	174	**4,8**	696	620	1270	20,40

INNER TUBE: AISI 316L / EN 1.4301 annular corrugated stainless steel
OUTER COVER: two stainless steel AISI 304 / EN 1.4404 braid

SAFETY FACTOR: 4:1
APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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Balflex®

BRAID 304



10.5140.

Stainless steel braid AISI 304 / EN 1.4404

#	inch	ID mm	wire diameter mm	n°of wires	carriers	braid angle	braid coverage %	KG kg/m
10.5140.006	1/4"	6,0	0,25	6	24	90	97,5	0,07
10.5140.008	5/16"	8,0	0,25	7	24	90	95,1	0,08
10.5140.010	3/8"	10,0	0,25	8	24	90	94,0	0,10
10.5140.013	1/2"	12,0	0,25	10	24	90	96,3	0,12
10.5140.016	5/8"	16,0	0,30	11	24	90	95,5	0,21
10.5140.020	3/4"	20,0	0,30	9	36	90	96,6	0,25
10.5140.025	1"	25,0	0,30	10	36	90	94,6	0,27
10.5140.032	1.1/4	32,0	0,35	8	48	90	93,1	0,40
10.5140.040	1.1/2"	40,0	0,35	10	48	90	94,4	0,49
10.5140.050	2"	50,0	0,40	11	48	90	95,5	0,73
10.5140.065	2.1/2"	65,0	0,40	11	64	90	95,2	0,92
10.5140.075	3"	80,0	0,40	12	64	90	93,2	1,06
10.5140.100	4"	100,0	0,50	11	64	90	90,3	1,60
10.5140.125	5"	125,0	0,57	10	72	98	87,8	2,22
10.5140.150	6"	150,0	0,57	11	72	98	85	2,49
10.5140.200	8"	200,0	0,67	9	96	102	86,8	4,30
10.5140.250	10"	250,0	0,70	12	96	104	93,7	6,60

BRAID: 1 stainless steel wire braid

APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -200°C (-328°F) +600°C (+1112°F)

COUPLINGS: Balflex® Welding Rings serie 31

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EXHAUST TUBE



10.5001.

Polygonal stripwound galvanized steel exhaust tube, interlocked, medium pitch

#	inch	ID mm	OD mm	thickness of strip mm	width of strip mm	MIN BEND RAD mm	KG kg/m
10.5001.032	1.1/4"	32,0	35,0	0,30	16,0	135	0,07
10.5001.035	1.3/8"	35,0	38,0	0,30	16,0	145	0,08
10.5001.040	1.1/2"	40,0	43,5	0,30	16,0	165	0,10
10.5001.045	1.3/4"	45,0	48,0	0,30	16,0	168	0,12
10.5001.050	2"	50,0	54,5	0,30	16,0	170	0,21
10.5001.055	2.3/16"	55,0	59,5	0,30	16,0	215	0,25
10.5001.060	2.3/8"	60,0	64,5	0,30	16,0	235	0,27
10.5001.065	2.1/2"	65,0	69,5	0,30	16,0	245	0,40
10.5001.070	2.3/4"	70,0	74,5	0,30	16,0	255	0,49
10.5001.075	3"	75,0	78,5	0,30	16,0	265	0,73
10.5001.080	3.3/16"	80,0	83,5	0,30	16,0	280	0,92
10.5001.085	3.3/8"	85,0	89,5	0,30	16,0	315	1,06
10.5001.090	3.5/8"	90,0	94,5	0,30	16,0	350	1,60
10.5001.095	3.3/4"	95,0	100,0	0,40	24,0	550	2,22
10.5001.100	4"	100,0	105,0	0,40	24,0	555	2,49
10.5001.110	4.3/8"	110,0	115,0	0,40	24,0	565	4,30
10.5001.115	4.5/8"	115,0	120,0	0,40	24,0	570	6,60
10.5001.120	4.3/4"	120,0	125,0	0,40	24,0	575	2,22
10.5001.125	5"	125,0	130,0	0,40	24,0	590	2,49
10.5001.130	5.3/16"	130,0	135,0	0,40	24,0	625	4,30
10.5001.150	6"	150,0	155,0	0,40	24,0	655	6,60

INNER TUBE: galvanized steel medium pitch, polygonal cross-section

APPLICATION: steam, chemicals, oxygen, thermofluid, naphta, cryogening

TEMPERATURE RANGE: -50°C to +250°C

VERSIONS: Stainless steel on demand

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Balflex®

WELDING RINGS



31.00.S

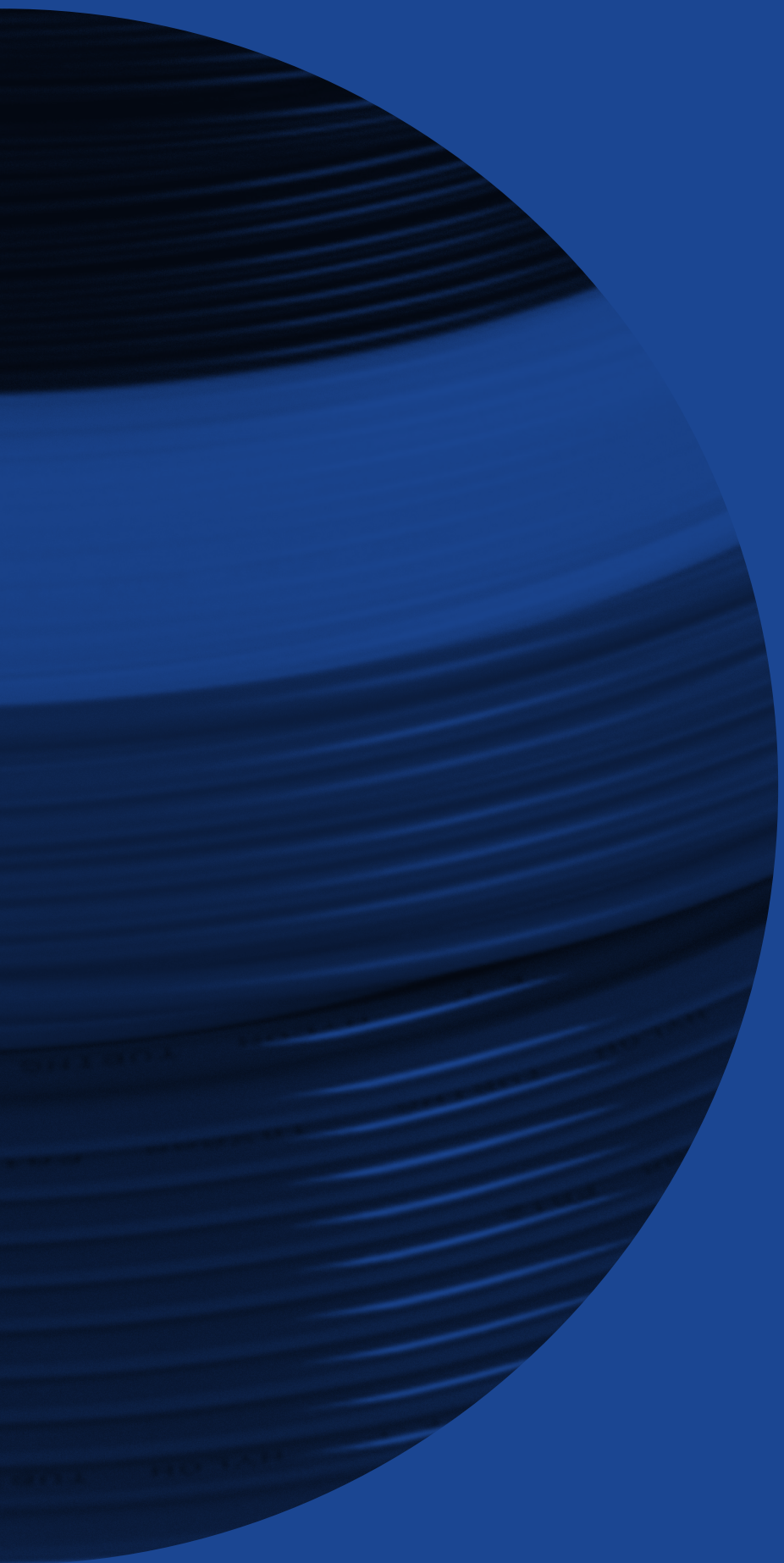
Stainless Steel AISI 304 / EN 1.4404 welding rings for single braind Stainless steel hose

#	inch	ID mm	OD mm	length mm
31.00.06S	1/4"	11,5	14,5	20,0
31.00.08S	5/16"	14,0	17,0	20,0
31.00.10S	3/8"	16,0	19,0	20,0
31.00.13S	1/2"	18,5	21,5	20,0
31.00.16S	5/8"	23,5	26,5	20,0
31.00.20S	3/4"	28,8	31,8	25,0
31.00.25S	1"	34,5	37,5	30,0
31.00.32S	1.1/4	43,5	46,5	30,0
31.00.40S	1.1/2"	52,0	55,0	35,0
31.00.50S	2"	63,0	66,0	35,0
31.00.65S	2.1/2"	84,0	87,0	40,0
31.00.75S	3"	97,5	100,5	50,0
31.00.100S	4"	120,0	123,0	50,0
31.00.125S	5"	154,0	157,0	50,0
31.00.150S	6"	179,0	182,0	50,0
31.00.200S	8"	229,0	232,0	50,0
31.00.250S	10"	282,0	285,0	50,0

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PU-PA Tubing





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pag. 156 **PA6 TUBING**

Balflex®

PU-PA Tubing

Balflex® Tubing are produced to Balflex® specifications and according to international standards, covering a wide variety of applications, with best chosen high quality grade polymers, for a extensive range of applications.

The Balflex® Tubing range in this catalogue includes:

- Balflex® PU Tubing (Blue Color) - I.D. mm – 12.2020.
- Balflex® PU Tubing (Blue Color) - I.D. inch – 12.2030.
- Balflex® PA6 Tubing (Black Color) - I.D. mm – 12.2000.
- Balflex® PA6 Tubing (Black Color) - I.D. inch – 12.2010.

General Guidelines

Balflex® PU Tubing or Polyurethane Tubing is suitable for pneumatic uses where low temperatures or tight bend radius rule out the more traditional nylon tubing. Blue polyurethane tubing is capable of withstanding higher pressure than the standard version and in addition it has increased shock absorbencies capacity and does not work harden.

Balflex® PA6 Tubing is suitable for automation, tooling, instrumentation, pneumatics, lubricating and low pressure hydraulic lines.

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PU TUBING



POLYURETHANE TUBING (98 Shore A) - 12.2020 / 2030

Blue Color, Pu Tubing for automation, robotics, tooling, pneumatics and low pressure hydraulic systems, working temperature: -35°C (-31°F) to +80°C (+176°F)

mm SIZE

#	OD		ID				MPa		Coil Length
	mm	inch	mm	inch	mm	inch	MPa	PSI	meter
12.2020.040	4,0	0.16	2,4	0.09	0,8	0.03	**1.2**	174	100
12.2020.044	4,4	0.17	2,8	0.11	0,8	0.03	**1.2**	174	100
12.2020.050	5,0	0.20	3,0	0.12	1,0	0.04	**1.2**	174	100
12.2020.060	6,0	0.24	4,4	0.17	0,8	0.03	**0.6**	87	100
12.2020.061	6,0	0.24	4,0	0.16	1,0	0.04	**1.0**	145	100
12.2020.080	8,0	0.32	6,0	0.24	1,0	0.04	**0.6**	87	100
12.2020.081	8,0	0.32	5,5	0.22	1,25	0.05	**1.0**	145	100
12.2020.082	8,0	0.32	5,0	0.20	1,5	0.06	**1.2**	174	100
12.2020.083	8,3	0.33	5,7	0.22	1,3	0.05	**1.0**	145	100
12.2020.100	10,0	0.39	7,5	0.30	1,25	0.05	**0.6**	87	100
12.2020.101	10,0	0.39	7,0	0.28	1,5	0.06	**1.0**	145	100
12.2020.120	12,0	0.47	9,0	0.35	1,5	0.06	**0.6**	87	50
12.2020.121	12,0	0.47	8,0	0.31	2,0	0.08	**1.0**	145	50
12.2020.140	14,0	0.55	11,0	0.43	1,5	0.06	**0.5**	73	50
12.2020.141	14,0	0.55	10,0	0.39	2,0	0.08	**0.8**	116	50
12.2020.160	16,0	0.63	12,0	0.47	2,0	0.08	**0.8**	116	50
12.2020.180	18,0	0.71	13,0	0.51	2,5	0.10	**0.8**	116	50

BALFLEX - PU - Ø4 X 0.8 mm - WP 1.2 MPa

inch SIZE

#	OD		ID				MPa		Coil Length
	inch	mm	inch	mm	inch	mm	MPa	PSI	meter
12.2030.02	1/8"	3,20	0.063	1,60	0.031	0,8	**1.2**	174	100
12.2030.03	3/16"	4,75	0.124	3,15	0.031	0,8	**1.0**	145	100
12.2030.04	1/4"	6,35	0.171	4,35	0.039	1,0	**1.0**	145	100
12.2030.06	3/8"	9,52	0.257	6,52	0.059	1,5	**1.0**	145	100
12.2030.08	1/2"	12,70	0.382	9,70	0.059	1,5	**1.0**	145	50

BALFLEX - PU - Ø1/8" X 0.031in - WP 174 Psi

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Balflex®

PA6 Tubing



According to DIN 73378 - 12.2000 / 2010

Black Color, PA6 Tubing for automation, tooling, instrumentation, pneumatics, lubricating and low pressure hydraulic lines, working temperature: -40°C (-40°F) a +125°C (+257°F)

mm SIZE

#	OD mm	OD inch	ID mm	ID inch	mm	inch	MPa	PSI	Coil Length meter
12.2000.040	4,0	0.16	2,4	0.09	0,8	0.03	**3.1**	450	100
12.2000.060	6,0	0.24	4,0	0.16	1,0	0.04	**2.7**	392	100
12.2000.080	8,0	0.31	6,0	0.24	1,0	0.04	**1.9**	276	100
12.2000.100	10,0	0.39	7,0	0.28	1,5	0.06	**2.3**	334	100
12.2000.110	11,0	0.43	8,0	0.31	1,5	0.06	**2.1**	305	100
12.2000.120	12,0	0.47	9,0	0.35	1,5	0.06	**1.9**	276	100
12.2000.140	14,0	0.55	10,4	0.41	1,8	0.07	**1.8**	261	50
12.2000.150	15,0	0.59	11,4	0.45	1,8	0.07	**1.7**	247	50
12.2000.160	16,0	0.63	12,4	0.49	1,8	0.07	**1.6**	232	50

BALFLEX - PA6 - Ø8 X 1 mm - WP 1.9 MPa -

inch SIZE

#	OD inch	OD mm	ID inch	ID mm	inch	mm	MPa	PSI	Coil Length meter
12.2010.02	1/8"	3,20	0.063	1,60	0.031	0,8	**5.0**	725	100
12.2010.03	3/16"	4,75	0.124	3,15	0.031	0,8	**2.7**	392	100
12.2010.04	1/4"	6,35	0.171	4,35	0.039	1,0	**2.4**	348	100
12.2010.06	3/8"	9,52	0.257	6,52	0.059	1,5	**2.4**	348	100
12.2010.08	1/2"	12,70	0.382	9,70	0.059	1,5	**1.7**	247	100

BALFLEX - PA6 - Ø 1/8" X 0.031 in - WP 725 Psi -

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PVC Hoses





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pag. 164 **BALCRISTAL AIR & WATER**

pag. 165 **BALSTEEL SUCTION & DELIVERY NON-TOXIC**

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pag. 167 **BALFLAT 0.6MPA**

pag. 168 **FLATDRILL 10 AIR & WATER**

pag. 169 **FLATDRILL 20 AIR & WATER**

pag. 170 **AIRPRESSOR AIR & WATER**

pag. 170 **AUTOWASH CAR WASH**

Balflex®

PVC Hoses

*The range of **Balflex®** PVC Hoses, manufactured according to **Balflex®** specifications compreends a wide variety of braid and spiral hoses (PVC rigid spiral wound and steel spiral wound to meet different applications).*

Balflex® optimized the production of these hoses and their compatibility with a wide range of fluids so as to assure a more extensive and complete offer. All the Balflex® PVC hoses are made from the best quality compound with virgin raw material so as to assure the best performance.

The program of Balflex® PVC hoses includes :

- Braided PVC Hoses
- Spiral PVC Hoses

Generalities about PVC hoses

Fluid compatibility: It is necessary to verify the fluid compatibility with the hose. A fluid that chemically attacks the hose can lead to contamination and obstruction of the equipment elements and to an early failure of the hose. The presence of gases requires special attention. The table of chemical resistance indicates the PVC compatibility with some fluids. Refer to Balflex® for the compatibility of other fluids. In case of doubt it is recommended a previous test.

Temperature: Excessive temperature is one of the PVC considerable restrictions, which provokes its accelerated aging. The fluid temperature, either functioning or not, it must not exceed the maximum functioning temperature indicated for the PVC of + 55°C (+ 131°F). It is also necessary to pay attention to the room temperature, mainly the one that results from heat sources in the proximity of the flexible.

Generalities about PVC

The letters PVC are the initials of PolyVinylChloride or Polyvinyl Chloride, PVC has as the main raw material the sodium chloride (kitchen salt), which is present in underground mines (mineral salt) and in unlimited amounts in the sea. It corresponds to 57% of its composition. The remaining 43% come from oil derived or alternatively from other sources such as calcium carbide and sugar cane.

The chlorine is obtained from sea-salt (sodium chloride) through electrolysis process. The electrolysis is a process that separates the chemical elements of a compound through the use of electricity. In a summarized way, first the decomposition is proceeded (ionization or disassociation) of the ions compound and, after that, with the passage of a continuous current through these ions, chemical elements are obtained. In many cases, depending on the substance to be electrolyzed and the means where it occurs, besides forming elements the formation of new compounds also occurs. The electrolysis process is a reaction to oxidoreduction opposite to the one that occurs in an electrolytic cell, being, thus, a non-spontaneous physic-chemical phenomenon.

To turn PVC resin into hose, it is necessary the mixture of several additives that will give each hose the appropriate characteristics to each application. The most used additives in PVC compounds for the hose manufacturing are the plastifiers, the thermal stabilizer, the pigments, the impact modifiers, the charges and the processing auxiliaries.

PVC, which is inactive, is one of the materials that present better resistance to the sterilization methods (vaporization, oxide of ethylene or gamma rays). PVC can be manufactured in every color by the addition of pigments, which make easier the identification of the hoses according to the use they are intended for. PVC is a product that can be considered ecological because it is 100% recyclable.

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PVC Chemical Resistance Chart

Recommended | Recommended with Restrictions | Not Recommended | Non Toxic | OQ

Chemical	Concentration	TEMPERATURE 20o C	55o C
Acetate Solvents		Not Recommended	Not Recommended
Acetic Acid	10%	Recommended	Recommended with Restrictions
Acetic Acid	glacial	Recommended with Restrictions	Not Recommended
Acetone		Not Recommended	Not Recommended
Acrlylonitrile		Recommended	Recommended with Restrictions
Adipic Acid		Recommended	Recommended with Restrictions
Alcohol Butyl		Recommended	Recommended with Restrictions
Alcohol Ethyl		Recommended	Recommended with Restrictions
Alcohol Isorpopyl		Recommended	Recommended with Restrictions
Alcohol Methyl		Recommended	Recommended with Restrictions
Alcohol Acetate		Recommended	
Aluminium Choloride		Recommended	Recommended
Aluminium Hydroxide		Recommended	
Aluminium Sulfate		Recommended	Recommended
Allyl Chloride			
Ammonia	0.88 S.G. (Aqueous)	Recommended	Recommended
Ammonia	dry gas	Recommended	
Ammonia	liquid	Not Recommended	Not Recommended
Ammonium Chloride		Recommended	Recommended
Ammonium Hydroxide		Recommended	
Animal Oils			
Amyl Acetae		Not Recommended	Not Recommended
Aniline Oils			
Aromatic Hydrocarbons		Not Recommended	Not Recommended
Asphalt		Not Recommended	Not Recommended
ASTM Fuel A		Recommended	Recommended
ASTM Fuel B		Not Recommended	Not Recommended
ASTM # 1 Oil			
ASTM # 3 Oil			
Barium Chloride		Recommended	Recommended
Barium Hydroxide		Recommended	Recommended
Barium Sulfide		Recommended	Recommended

Chemical	Concentration	TEMPERATURE 20o C	55o C
Benzene		Not Recommended	Not Recommended
Benzine		Recommended with Restrictions	Recommended with Restrictions
Bordeaux Mixture		Recommended	Recommended
Borax		Recommended	Recommended
Boric Acid		Recommended	Recommended
Brine		Recommended	Recommended
Bromine Traces		Not Recommended	Not Recommended
Butyl Acetate		Not Recommended	Not Recommended
Calcium Hydroxide		Recommended	Recommended
Calcium Hypochloride		Recommended	Recommended
Carbonic Acid		Recommended with Restrictions	Not Recommended
Carbon Dioxide		Recommended	Recommended
Carbon Disulphite		Not Recommended	Not Recommended
Carbon Monoxide		Recommended	Recommended
Carbon Tetrachloride		Not Recommended	Not Recommended
Casein		Recommended	Recommended with Restrictions
Chlorine	dry gas	Recommended	Recommended
Chlorine	wet gas	Recommended with Restrictions	Not Recommended
Chlorine	water	Not Recommended	Not Recommended
Chlorobenzene		Not Recommended	Not Recommended
Chlorinated Hydrocarbons		Not Recommended	Not Recommended
Chloroform		Not Recommended	Not Recommended
Chromic Acid	10%	Recommended	Recommended with Restrictions
Citric Acid		Recommended	Recommended
Coal Tar		Not Recommended	Not Recommended
Copper Chloride		Recommended	Recommended
Copper Nitrate		Recommended	Recommended
Copper Sulphate		Recommended	Recommended
Cottonseed Oil			
Creosote		Not Recommended	Not Recommended
Cresol		Recommended	Recommended with Restrictions
Cresylic Acid		Not Recommended	Not Recommended

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Chemical	Concentration	TEMPERATURE 20o C	55o C
Cyclohexane		🟢	🟡
Cyclohexanone		🔴	🔴
DDT Weed Killer		🟢	🟡
Detergent Synthetic		🟢	🟢
Developers Photographic		🟢	🟢
Dextrin		🟢	🟢
Dextrose		🟢	🟢
Dibutyl Phthalate		🔴	🔴
Dichlorobenzene		🔴	🔴
Diesel Oil		⚪	⚪
Diethylene Glycol		🟢	🟢
Diethyl Ether		🔴	🔴
Di-isodecyl Phthalate		🔴	🔴
Dicotyl Phthalate		🔴	🔴
Emulsifiers		🟢	🟢
Emulsions Photographic		🟢	🟢
Ethyl Acetate		🔴	🔴
Ethylene Dichloride		🔴	🔴
Ethylene Glycol		🟢	🟢
Fatty Acid		🟢	🟢
Ferric Chloride		🟢	🟢
Ferric Sulphate		🟢	🟢
Ferrous Chloride		🟢	🟢
Ferrous Sulphate		🟢	🟢
Fixing Solution Photografic		🟢	🟢
Fluorine		🟢	🟢
Formaldehyde	40%	🔴	🔴
Formic Acid	40%	🟢	🟢
Formic Acid	50%	🟡	🔴
Formic Acid	100%	🔴	🔴
Fuel Oil		⚪	⚪
Glacial Acetic Acid		🟡	🔴
Glucose		🟢	🟢
Glycerine		🟢	🟢
Grape Sugar		🔵	🔵
Grease			

Chemical	Concentration	TEMPERATURE 20o C	55o C
Heptane		🟡	🔴
Hexane		🔴	🔴
Hydrobromic Acid		🟢	🟢
Hydrochloric Acid	10%	🟢	🟢
Hydrochloric Acid	40%	🟢	🔴
Hydrofluoric Acid	10%	🟢	🟡
Hydrofluoric Acid	40%	🟢	🔴
Hydrofluoric Acid		🟢	🟢
Hydrofluosilicic Acid		🟢	🟢
HydrogenPeroxide		🟢	
Hydrogen Sulphide		🟢	
Iso-octan		🟢	🟡
Isopropyl Acetate		🔴	🔴
Kerosene		🟡	🟡
Ketones		🔴	🔴
Lactic Acid	10%	🟢	
Lactic Acid	100%	🔴	🔴
Lacquer Solvents		🟡	🔴
Linseed Oils			
Magnesium Chloride		🟢	🟢
Magnesium Hydroxide		🟢	🟢
Magnesium Sulphate		🟢	🟢
Malic Acid		🟢	🟢
Methyl Acetate		🔴	🔴
Methyl Bromide		🔴	🔴
Methyl Ethyl Ketone		🔴	🔴
Methylene Chloride		🔴	🔴
Mineral Oils			
Monochlorobenzene		🔴	🔴
Naphtha		🔴	🔴
Naphthalene		🟡	🔴
Nitric Acid	70%	🟢	🟢
Nitric Acid	40%	🟢	🟡
Nitric Acid	70%	🔴	🔴
Nitrobenzene		🔴	🔴
Nitrogen Fertilizers		🟢	

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Chemical	Concentration	TEMPERATURE 20o C	55o C
Oleic Acid		🟢	🟡
Oxalic Acid		🟢	🟢
Palmitic Acid		🟢	🟢
Paraffin		🟢	🟢
Pentane		🟡	🔴
Perchloroethylene		🔴	🔴
Phenol		🟡	🔴
Phosphoric Acid		🟢	🟢
Pitch		🟢	🟡
Potassium Hydroxide		🟢	🟢
Propane		🟢	🟢
Sea Water		🟢	🟢
Sodium Hydroxide (caustic soda)	10%	🟢	🟢
Sodium Hydroxide (caustic soda)	50%	🟢	🟡
Sodium Cyanide		🟢	🟢
Soybean Oil			
Stearic Acid		🟢	🟢
Styrene		🔴	🔴
Sulphur Dioxide	dry	🟢	🟢
Sulphur Dioxide	moist	🟡	🔴
Sulphur Dioxide	liquid	🔴	🔴
Sulphuric Acid	45%	🟢	🟢
Sulphuric Acid	60%	🟡	🟡
Sulphuric Acid	98%	🔴	🔴
Sulphurous Acid	30%	🟢	
Tannic Acid		🟢	🟢
Tartaric Acid		🟢	🟢
Tetrahydrofuran		🔴	🔴
Toluene		🔴	🔴
Trichlorethylene		🔴	🔴
Triethanolamine		🟢	🟢
Tricresyl Phosphate		🔴	🔴
Turpentine		🟡	🔴
Urea		🟢	🟢
Vinegar		🟢	🟢
Vinyl Acetate		🔴	🔴
Vinyl Chloride		🔴	🔴
Water		🟢	🟢
Wine		🔵	🔵
Xylene		🔴	🔴
Zinc Chloride		🟢	🟢
Zinc Sulphate		🟢	🟢

The following data is based on tests and believed to be reliable; however the tabulation should be used as a guide ONLY, since it does not take into consideration all variables, such as elevated temperatures, fluid contamination, concentration, etc. that may be encountered in actual use. All critical applications should be tested.
Note: All data based on 20˚C/70˚F unless otherwise noted.

🔵 Recommended the use of Balflex® Food Quality Hoses as Balsteel (12.1227) and QA (12.9050)

⚪ Recommended Balflex® OQ (12.9010)

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BALCRISTAL FOOD QUALITY



12.1010.

Low pressure, textile braid reinforced, non-toxic, odor and tasteless, food-quality PVC water hose

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	KG kg/m
12.1010.06	1/4"	-4	6,4	11,0	**10,0**	150	**30,0**	450	0,04
12.1010.08	5/16"	-5	7,9	13,0	**10,0**	150	**30,0**	450	0,10
12.1010.10	3/8"	-6	9,5	15,0	**8,0**	120	**24,0**	360	0,13
12.1010.12	1/2"	-8	12,7	17,0	**7,0**	110	**20,9**	330	0,15
12.1010.16	5/8"	-10	15,8	21,0	**7,0**	110	**20,9**	330	0,20
12.1010.19	3/4"	-12	19,1	25,0	**6,0**	90	**18,0**	270	0,26
12.1010.25	1"	-16	25,4	32,0	**5,0**	80	**15,1**	240	0,41
12.1010.32	1.1/4"	-20	32,0	42,0	**4,0**	60	**12,0**	180	0,70
12.1010.38	1.1/2"	-24	38,0	48,0	**4,0**	60	**12,0**	180	0,85

INNER TUBE: transparent PVC, highly flexible, resistant to abrasion, non-toxic, food quality

INTERNAL SURFACE: smooth, passage facilitator
REINFORCEMENT: 1 braid of high tensile synthetic yarn

OUTER TUBE: transparent PVC, highly flexible, resistant to ozone, UV rays and to abrasion
COLOR: transparent crystal

SAFETY FACTOR: 3:1
APPLICATION: food industry
TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)

BALFLEX BALCRISTAL NON TOXIC - 6 X 11 mm - WP 10 Bar / 145 PSI

BALCRISTAL AIR & WATER



12.1030.

PVC Flexible Hose for Air & Water

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	KG kg/m
12.1030.04	1/4"	-4	6,4	10,8	**15,5**	230	**46,6**	690	0,08
12.1030.05	5/16"	-5	7,9	12,8	**15,5**	230	**46,6**	690	0,10
12.1030.06	3/8"	-6	9,5	15,0	**15,5**	230	**46,6**	690	0,14
12.1030.08	1/2"	-8	12,7	18,0	**15,5**	230	**46,6**	690	0,16
12.1030.10	5/8"	-10	15,8	21,3	**10,3**	150	**31,0**	450	0,20
12.1030.12	3/4"	-12	19,1	25,0	**10,3**	150	**31,0**	450	0,26
12.1030.16	1"	-16	25,4	32,6	**10,3**	150	**31,0**	450	0,42
12.1030.20	1.1/4"	-20	32,0	45,0	**10,3**	150	**31,0**	450	0,70
12.1030.24	1.1/2"	-24	38,0	51,0	**10,3**	150	**31,0**	450	0,85
12.1030.32	2"	-32	51,0	65,0	**10,3**	150	**31,0**	450	1,00

INNER TUBE: transparent PVC, highly flexible, resistant to abrasion
INTERNAL SURFACE: smooth, passage facilitator

REINFORCEMENT: 1 braid of high tensile synthetic yarn
OUTER TUBE: transparent PVC, highly flexible, resistant to ozone, UV rays and to abrasion

COLOR: transparent crystal
COIL LENGTH: 50 / 100 meters
SAFETY FACTOR: 3:1
TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)

APPLICATION: industrial services of air and water, in compressors, pneumatic facilities, washing services and water or air conduction where it is important the visual follow-up of the operations

BALFLEX BALCRISTAL AIR & WATER - 16 X 21 mm - WP 15 Bar / 220 PSI

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BALSTEEL SUCTION & DELIVERY NON-TOXIC



12.1227.

Flexible Hose of PVC Reinforced with Steel Spiral

#	inch	ID mm	OD mm	bar	PSI	KG kg/m
12.1227.012	1/2"	12,0	18,0	**7,0**	102	0,22
12.1227.014	9/16"	14,0	20,0	**6,0**	87	0,25
12.1227.016	5/8"	16,0	23,0	**6,0**	87	0,30
12.1227.018	11/16"	18,0	25,0	**6,0**	87	0,30
12.1227.020	3/4"	20,0	27,0	**5,0**	73	0,39
12.1227.022	7/8"	22,0	28,0	**5,0**	73	0,39
12.1227.025	1"	25,0	32,0	**5,0**	73	0,50
12.1227.030	1.3/16"	30,0	38,0	**4,0**	58	0,65
12.1227.032	1.1/4"	32,0	41,0	**4,0**	58	0,80
12.1227.035	1.3/8"	35,0	44,0	**4,0**	58	0,89
12.1227.038	1.1/2"	38,0	47,0	**4,0**	58	0,90
12.1227.040	1.9/16"	40,0	49,0	**3,0**	44	0,98
12.1227.045	1.3/4"	45,0	54,0	**3,0**	44	1,20
12.1227.050	2"	50,0	59,0	**3,0**	44	1,30
12.1227.060	2.3/8"	60,0	70,0	**2,0**	29	1,65
12.1227.065	2.1/2"	65,0	75,0	**2,0**	29	2,00
12.1227.070	2.3/4"	70,0	81,0	**2,0**	29	2,20
12.1227.075	3"	75,0	87,0	**2,0**	29	2,60
12.1227.080	3.1/4"	80,0	91,0	**2,0**	29	2,60
12.1227.090	3.1/2"	90,0	101,0	**2,0**	29	3,00
12.1227.100	4"	100,0	113,0	**2,0**	29	3,90
12.1227.125	5"	127,0	142,0	**2,0**	29	5,50
12.1227.150	6"	152,0	167,0	**2,0**	29	6,50

INNER TUBE: PVC, highly flexible, resistant to abrasion, weather and UV rays
INTERNAL SURFACE: smooth, passage facilitator

REINFORCEMENT: 1 wire helix of galvanized steel of high resistance
COLOR: transparent crystal

SAFETY FACTOR: 3:1
TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)

APPLICATION: food industry, water pumps, agriculture, fiber impulsion

BALFLEX BALSTEEL - FOOD QUALITY - S & D - 12 X 18 mm - WP 7 Bar / 100 PSI

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Balflex®

BALFLAT 0.4 MPa



12.1040.

Flat PVC Hose for Water and Pesticides

#	inch	ID mm	OD mm	BAR BAR	BAR PSI	BAR BAR	BAR PSI	KG kg/m
12.1040.025	1"	25,0	28,0	**4,0**	60	**12,0**	175	0,15
12.1040.032	1.1/4"	32,0	35,0	**4,0**	60	**12,0**	175	0,17
12.1040.040	1.1/2"	38,0	41,0	**4,0**	60	**12,0**	175	0,20
12.1040.050	2"	51,0	54,0	**4,0**	60	**12,0**	175	0,22
12.1040.060	2.1/2"	63,0	67,5	**4,0**	60	**12,0**	175	0,30
12.1040.075	3"	76,0	80,0	**4,0**	60	**12,0**	175	0,36
12.1040.100	4"	102,0	106,0	**4,0**	60	**12,0**	175	0,56
12.1040.125	5"	127,0	132,0	**4,0**	60	**12,0**	175	0,75
12.1040.150	6"	152,0	157,0	**4,0**	60	**12,0**	175	0,90
12.1040.200	8"	204,0	209,0	**4,0**	60	**12,0**	175	1,60

INNER TUBE: PVC compound resistant to pesticides
INTERNAL SURFACE: smooth, passage facilitator

REINFORCEMENT: braid of reinforced polyester
OUTER TUBE: PVC compound, resistant to ozone, UV rays and to abrasion

COLOR: black inner tube / blue outer tube
COIL LENGTH: 100 meters
APPLICATION: construction and irrigation in the agriculture. Excellent resistance to pesticides

TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)

BALFLEX BALFLAT - DN25 - 1" - WP 4 Bar / 60 PSI

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BALFLAT 0.6 MPa



12.1041.

Flat PVC Hose for Water and Pesticides

#	inch	ID mm	OD mm	BAR BAR	BAR PSI	BAR BAR	BAR PSI	KG kg/m
12.1041.025	1"	0,17	270	**6,0**	90	**18,0**	265	0,17
12.1041.032	1.1/4"	0,20	270	**6,0**	90	**18,0**	265	0,20
12.1041.040	1.1/2"	0,25	270	**6,0**	90	**18,0**	265	0,25
12.1041.050	2"	0,28	270	**6,0**	90	**18,0**	265	0,28
12.1041.060	2.1/2"	0,38	270	**6,0**	90	**18,0**	265	0,38
12.1041.075	3"	0,46	270	**6,0**	90	**18,0**	265	0,46
12.1041.100	4"	0,80	260	**6,0**	90	**18,0**	265	0,80
12.1041.125	5"	1,00	260	**6,0**	90	**18,0**	265	1,00
12.1041.150	6"	1,30	250	**6,0**	90	**18,0**	265	1,30
12.1041.200	8"	1,80	240	**6,0**	90	**18,0**	265	1,80

INNER TUBE: PVC compound resistant to pesticides
INTERNAL SURFACE: smooth, passage facilitator

REINFORCEMENT: braid of reinforced polyester
OUTER TUBE: PVC compound, resistant to ozone, UV rays and to abrasion

COLOR: black inner tube / blue outer tube
COIL LENGTH: 100 meters
TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)

APPLICATION: construction and irrigation in the agriculture. Excellent resistance to pesticides

BALFLEX BALFLAT - DN25 - 1" - WP 6 Bar / 90 PSI

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Balflex®

FLATDRILL 10 AIR & WATER



10.3030.

Very light weight – very easy to handle. FLAT Air & Water

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	KG kg/m
10.3030.12	3/4"	-12	19,0	23,0	**2,5**	350	**7,5**	1050	0,24
10.3030.16	1"	-16	25,0	29,0	**2,5**	350	**7,5**	1050	0,29
10.3030.20	1.1/4"	-20	32,0	36,2	**2,5**	350	**7,5**	1050	0,30
10.3030.24	1.1/2"	-24	40,0	44,0	**2,2**	280	**6,0**	840	0,30
10.3030.32	2"	-32	50,8	54,8	**1,6**	224	**5,0**	700	0,43
10.3030.40	2.1/2"	-40	65,0	69,0	**1,6**	224	**5,0**	700	0,59
10.3030.48	3"	-48	76,2	82,2	**1,5**	210	**4,5**	630	0,68
10.3030.64	4"	-64	101,6	107,6	**1,3**	182	**4,0**	560	0,93
10.3030.80	5"	-80	127,0	133,0	**1,0**	140	**3,0**	420	1,40
10.3030.96	6"	-96	152,4	160,4	**1,0**	140	**3,0**	420	1,59

INNER TUBE: yellow or black PVC / nitrile rubber compound
REINFORCEMENT: high tenacity polyester jacket

OUTER TUBE: black or yellow PVC / nitrile rubber compound
SAFETY FACTOR: 3:1

TEMPERATURE RANGE: -25°C (-13°F) +80°C (+176°F)

APPLICATION: air and water in mining and construction. Contractors for sludge / slurry injection. Resistant to hydrocarbon

BALFLEX FLATDRILL 10 - AIR & WATER - DN19 - 3/4" - WP 2.5 MPa / 350 PSI - BS 6391

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FLATDRILL 20 AIR & WATER



10.3050.

Very light weight – very easy to handle. Higher level of NBR in the compound.

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	KG kg/m
10.3050.12	3/4"	-12	19,0	24,0	**2,0**	300	**6,0**	900	0,17
10.3050.16	1"	-16	25,0	32,0	**2,0**	300	**6,0**	900	0,21
10.3050.20	1.1/4"	-20	32,0	36,6	**2,0**	300	**6,0**	900	0,30
10.3050.24	1.1/2"	-24	40,0	45,1	**2,0**	300	**6,0**	900	0,44
10.3050.32	2"	-32	50,8	57,8	**2,0**	300	**6,0**	900	0,65
10.3050.40	2.1/2"	-40	65,0	72,0	**2,0**	300	**6,0**	900	0,73
10.3050.48	3"	-48	76,2	83,2	**2,0**	300	**6,0**	900	0,93
10.3050.64	4"	-64	101,6	109,6	**2,0**	300	**6,0**	900	1,14
10.3050.80	5"	-80	127,0	135,0	**2,0**	300	**6,0**	900	1,57
10.3050.96	6"	-96	152,4	160,4	**2,0**	300	**6,0**	900	2,00
10.3050.128	8"	-128	208,0	216,0	**2,0**	300	**6,0**	900	2,36

INNER TUBE: yellow or black nitrile rubber compound
REINFORCEMENT: high tenacity polyester jacket

OUTER TUBE: yellow or black nitrile rubber compound
SAFETY FACTOR: 3:1

APPLICATION: air and water in mining and construction. Contractors for sludge / slurry injection. Resistant to hydrocarbon

TEMPERATURE RANGE: -25°C (-13°F) +80°C (+176°F)

BALFLEX FLATDRILL 20 - AIR & WATER - DN19 - 3/4" - WP 2 MPa / 300 PSI - BS 6391

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AIRPRESSOR AIR & WATER



10.1234.

Flexible hose of PVC compound for Air & Water 300 PSI

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	KG kg/m
10.1234.04	1/4"	-4	6,4	12,2	**2,0**	300	**6,0**	900	0,11
10.1234.05	5/16"	-5	7,9	14,0	**2,0**	300	**6,0**	900	0,13
10.1234.06	3/8"	-6	9,5	15,7	**2,0**	300	**6,0**	900	0,16
10.1234.08	1/2"	-8	12,7	18,5	**2,0**	300	**6,0**	900	0,18
10.1234.10	5/8"	-10	15,8	22,5	**2,0**	300	**6,0**	900	0,30
10.1234.12	3/4"	-12	19,1	26,0	**2,0**	300	**6,0**	900	0,29
10.1234.16	1"	-16	25,4	33	**2,0**	300	**6,0**	900	0,47

INNER TUBE: black PVC compound, highly flexible, resistant to abrasion
INTERNAL SURFACE: smooth, passage facilitator

REINFORCEMENT: 1 braid of high tensile synthetic yarn
OUTER TUBE: black PVC compound, resistant to ozone, UV rays and to abrasion

COIL LENGTH: 50 / 100 meters
SAFETY FACTOR: 3:1
TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)

APPLICATION: industrial services of air and water, in compressors, pneumatic facilities, washing services and for water and air conduction

BALFLEX AIRPRESSOR AIR & WATER - 1/4" - 6 X 12 mm - WP 2 MPa / 300 PSI

AUTOWASH CAR WASH



10.1223.

Flexible Hose of PVC compound with 2 braids Car Wash 1160PSI

#	inch	SAE Dash	ID mm	OD mm	MPa	PSI	MPa	PSI	KG kg/m
10.1223.08	1/2"	- 8	12,7	24,0	**8.0**	1160	**24.0**	3480	0,5

INNER TUBE: PVC compound, highly flexible, resistant to abrasion
INTERNAL SURFACE: smooth, passage facilitator

REINFORCEMENT: 2 braids of high tensile synthetic yarn
OUTER TUBE: PVC compound, highly flexible, resistant to ozone, UV rays and to abrasion

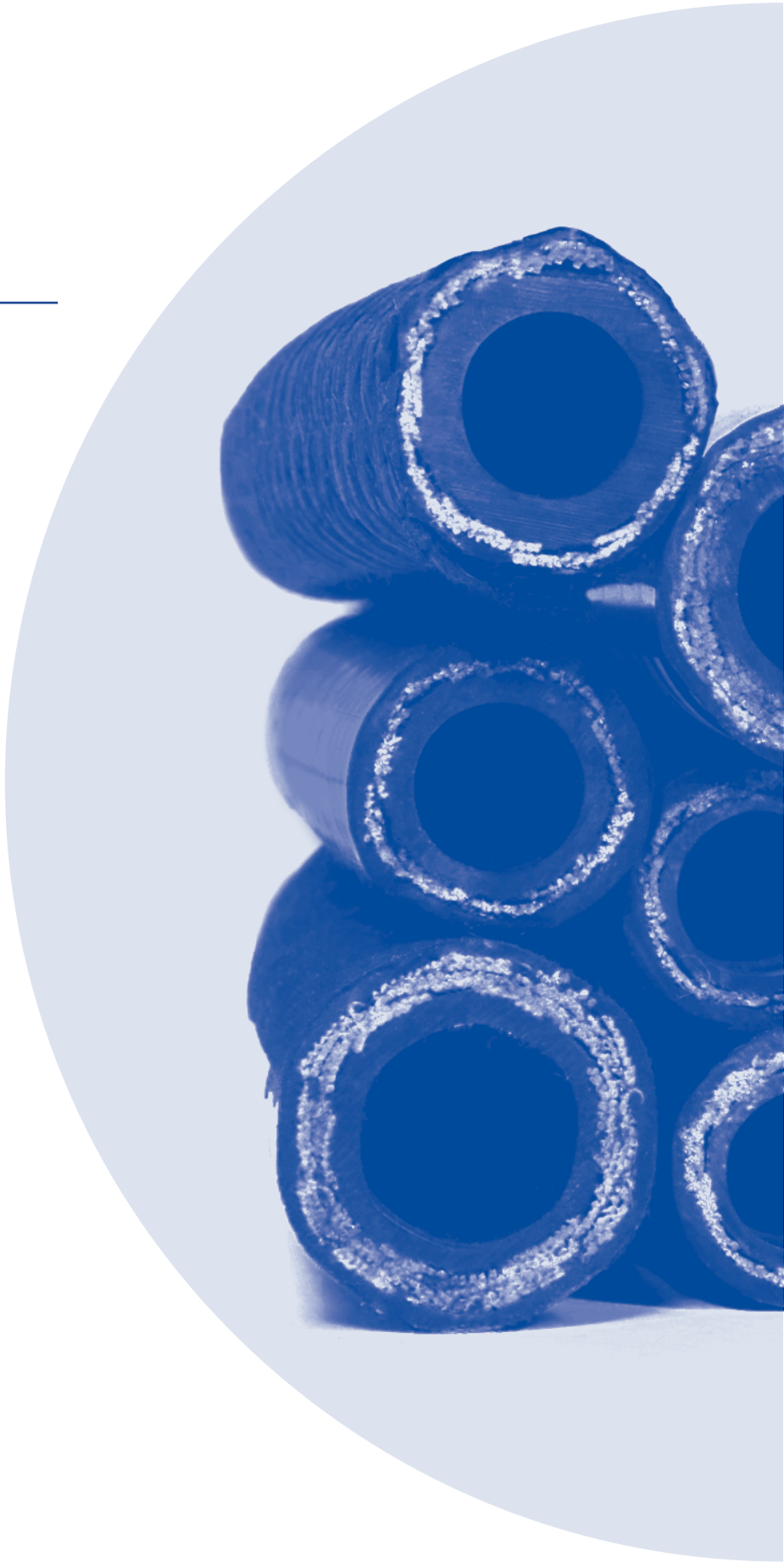
COLOR: black inner tube / blue outer tube
COIL LENGTH: 50 / 100 meters
SAFETY FACTOR: 3:1

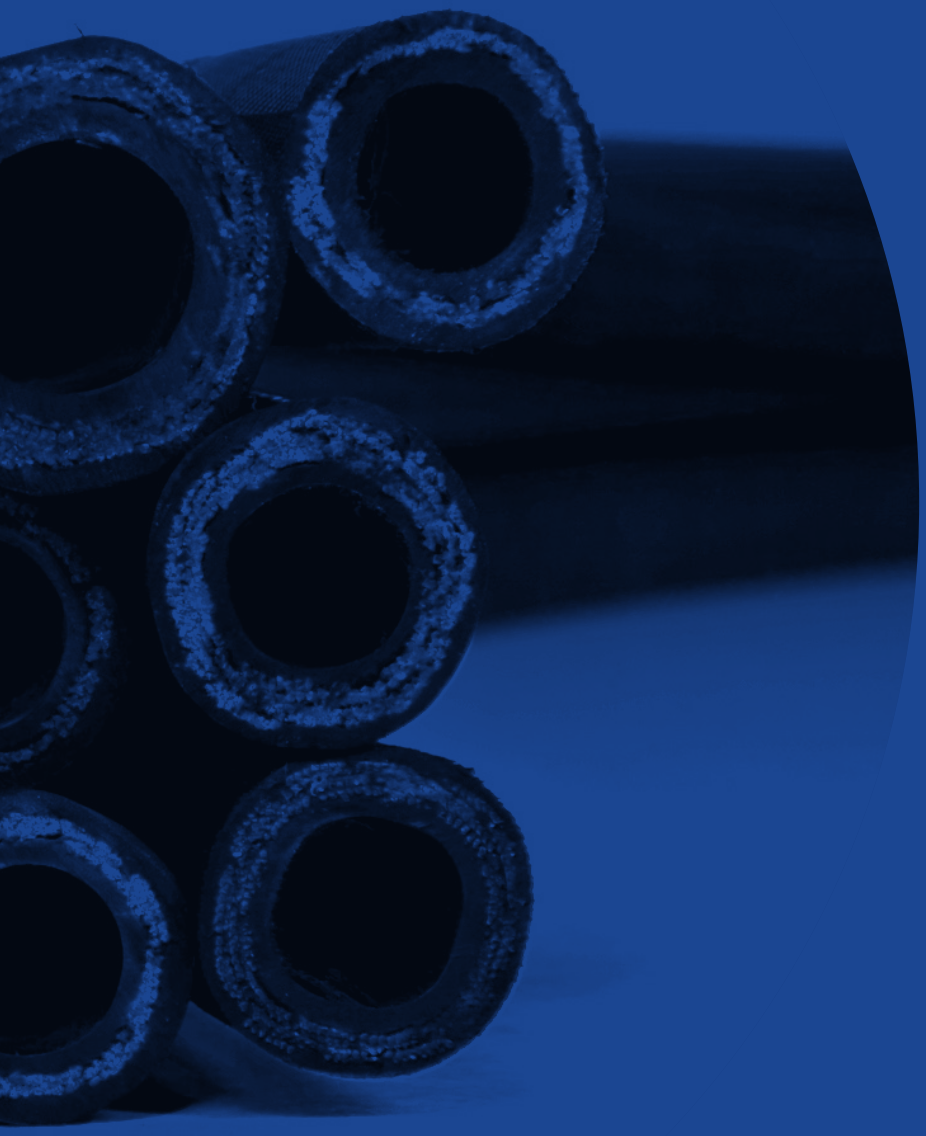
TEMPERATURE RANGE: -10°C (+14°F) +55°C (+131°F)
APPLICATION: car washing services or industrial pressure washing

BALFLEX AUTOWASH - DN12 - 1/2" - WP 8 MPa / 1160 PSI

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Appendix





Selection of hydraulic hoses

Working pressure

When selecting a hose it should be considered that it's working pressure should be higher than the maximum operating pressure of the system. For determination of the maximum operating pressure the system engineer should always consider possible pressure peaks during start up and inversion. Pressure peaks may be so short that they are only measurable with electronic devices. In suction applications, the capacity of the hose to withstand negative pressure is a decisive factor. Working pressures are given for working temperature of +20°C (+68°F). For increased temperatures a de-rating factor should be considered. The rated working pressures of Balflex® hydraulic hoses are summarized in table 1.

NOTE: Only an accurate knowledge of the pressure history of the service cycles of the equipment should lead to a sub-dimensioning of the hose by the engineer, bearing in mind the recommendations of SAE J 1927 standards.

Temperature

Excessive temperature is one of the main limitations of rubber and induces accelerated aging. Fluid temperature, either in motion or with the equipment stopped, should not exceed the maximum working temperature recommended for each hose. Likewise, surrounding temperature should be considered, specially when resulting from heat sources in the proximity of the hose assembly.

Air and Gaseous applications

Hose assemblies that are to be used in air and other gaseous applications shoud be pin-pricked, through the cover, prior to use.

These micro perforations allow gas that has permeated the inner tube of the hose to escape into the atmosphere. This prevents gases from accumulating and blistering the hose cover.

Fluid compatibility

Fluid compatibility with the hose and the coupling should be verified. Fluids that chemically attack the hose can lead to the contamination and obstruction of the hydraulic system and to premature failure of the hose. Handling gases requires special attention. As an orientation, the **Balflex®** Hydraulic Hose Fluid Compatibility Chart gives a classification of compatibility with some fluids. Consult **Balflex®** for compatibility of other fluids and rubber compounds. Whenever in doubt test before application.

Assembly geometry

Installation should guarantee that the minimum bend radius of the hose is respected and that bending occurs only in one plane. Hose length may suffer a variation between –4% and +2%, when submitted to pressure. The assembly length should provide enough margin for this change in length. Torsion and traction of the assembly must be avoided and protection and restrain of the assembly should be considered if there are obstacles to avoid. Mechanical loads acting on the assembly, including vibration, should be kept at a minimum. Free swivelling connectors should be used whenever torsion is present. Whenever hose failure may result in whipping (for example in gas applications) restraint through a steel cable to the connecting parts should be considered. When connecting a moving part, the free movement of the assembly without touching any surface should be assured. Positioning of the assembly should consider that risks of bodily injure and equipment damage through spillage or fluid ejection are minimized. Table 4 shows some correct and incorrect installation situations.

Permeability

All hoses present a certain degree of permeability, especially with gases and highly volatile liquids. The designer should consider the possibility that this permeability results in system or environment contamination.

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Environmental compatibility

The hose and couplings compatibility with the working environment factors, as temperature, fire hazard, UV light, ozone, chemicals and electrical charges should be considered. External protection sleeves require an adequate assembly.

Dimensioning

Dimensioning of all components should guarantee that pressure loss is kept at a minimum, in order not to reduce power transmission and to avoid overheating or turbulence of the fluid that might lead to deterioration of the lining.

Electrical conductivity

To minimize the risk of Explosion or Eletrocution from electrical discharge through the assembly due to static electricity build up or non-conductivity. Whenever the hose is not unequivocally branded either non-conductive or anti-static, its electrical characteristics should always be considered as not controlled.

Abrasion

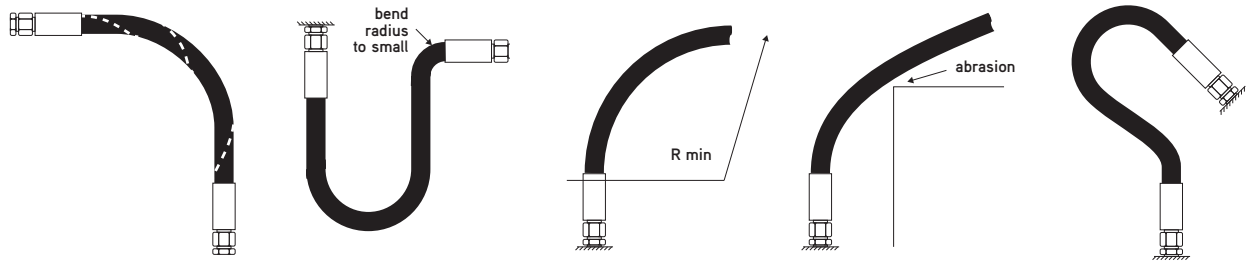
Accelerated external abrasion, through contact in motion or exposure to projected particles reduces drastically hose life and leads to premature failure through exposure of the reinforcement. For special applications Balflex® recommends hoses with special abrasion resistant rubber compounds or protection through adequate sleeves.

Couplings selection

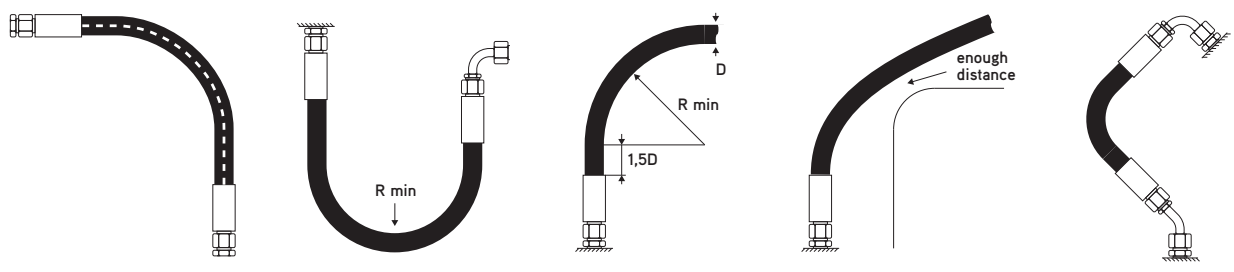
Couplings are a fundamental part of the geometry of hose assemblies. The compatibility of sealing and securement of the couplings to the system ports should be verified. The recommended coupling series for each hose should be used and the assembly instructions carefully followed. Inadequate couplings may damage the hose and lead to a premature failure.

Table 4: Examples of installation of hoses assemblies

Incorrect



Correct

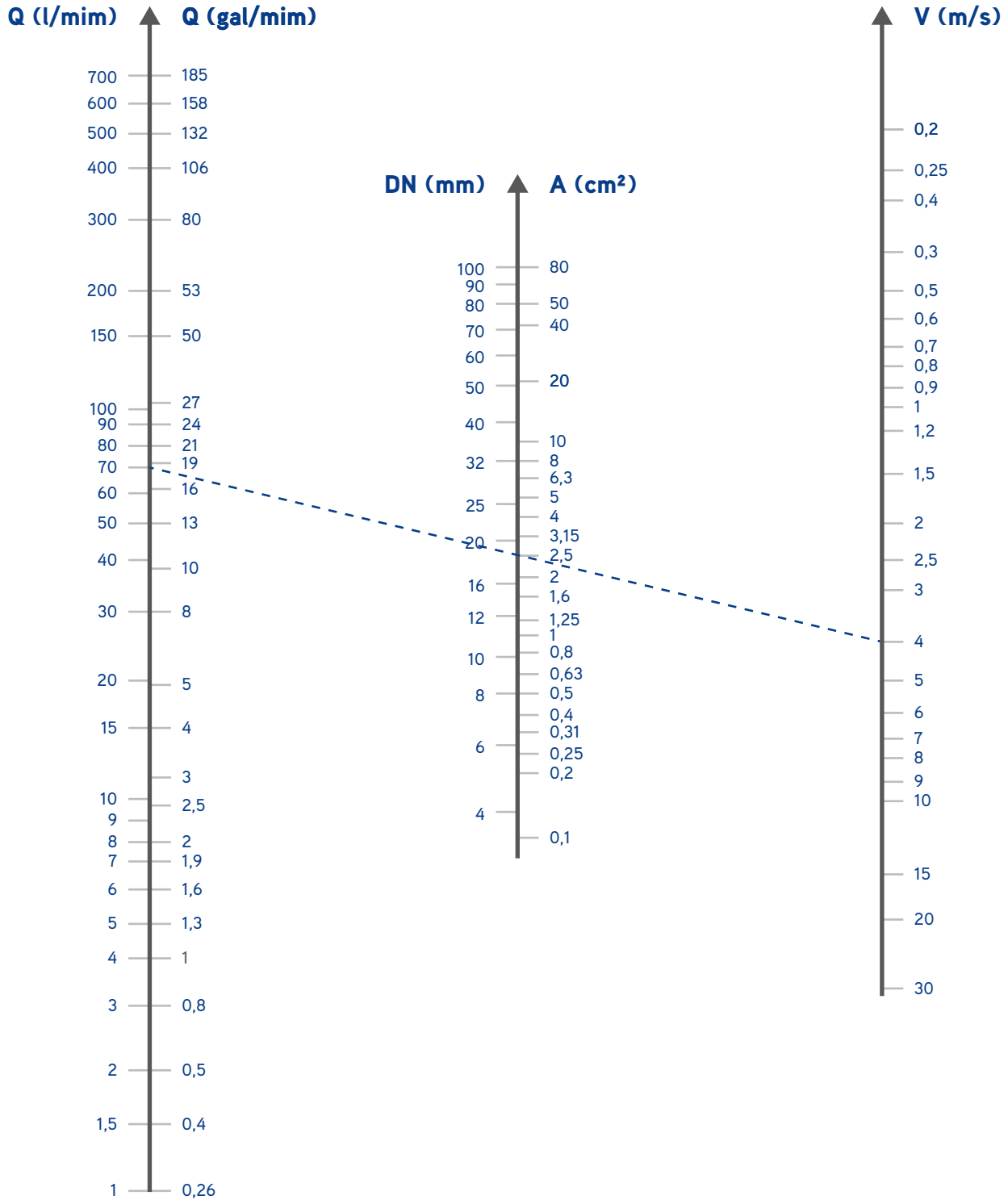


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Balflex®

Hose Selection Chart

This graphic helps finding the Nominal Hose Diameter-DN (mm) or the Dash Size. Firstly, one must know the Flow Rate and Fluid Velocity values that are being used. These two pieces of information must be found in the outer graphic lines. Then by linking these two values with a straight line, one should obtain the Nominal Hose Diameter-DN (mm) or the Gauge Diameter-A (cm²). The example below shows that for a fluid velocity of 4 meters per second and a flow rate of 70 liters per minute or 19 gallons per minute, one should choose a hose with DN of 19mm it means 3/4" hose or a dash hose -12.



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Storage

Recommendation for correct storage

Rubber is subject, by nature, to change in physical and chemical properties. These changes, which normally occur over the course of time, according to the kind of rubber used, can be accelerated by one particular factor or by a combination of these. Reinforcement materials are also adversely affected by unsuitable conditions of storage. The following recommendations give some precautions to be taken to ensure the minimum deterioration to stored articles.

Storage life

Storage time should be reduced to the minimum through programmed warehousing rotation. When it is not possible to avoid long term storage, it is necessary that the user, as indicated in ISO 8331, carries out a complete check of the hose before its use, according to the following criteria:

- maximum two years storage for assembly;
- maximum four years storage for hoses.

Temperature and humidity

The best temperature for the storage of rubber hoses varies from 10 to 25 degrees centigrade. Hoses should not be stored at temperature above 40°C or below 0°C. When the temperature is below -15°C it is necessary to take precautions when handling. Hoses should not be stored near sources of heat nor in conditions of high or low humidity. A humidity level of a maximum of 65% is recommended.

Light

Hoses must be stored in dark places, avoiding direct sun light or strong artificial light. Should store rooms have windows or glass openings, these must be screened with suitable filters.

Oxygen and ozone

Hoses should be protected from circulating air by suitable packing or by storing in air-tight containers. Ozone has a particularly aggressive action on all rubber products, the storage area must not contain any ozone producing devices such as high voltage electrical tension wires, electric motors or other devices which can provoke sparks or electric arcs.

Contact with other materials

Hoses should not come into contact with solvents, fuels, oils, greases, volatile chemical mixtures, acids, disinfectants or other organic liquids in general. Furthermore, direct contact with some metals (for example manganese, iron, copper and its alloys) and relative mixture exercise harmful effects on some types of rubber. Contact with PVC and creosote impregnated timber or fabrics should also be avoided.

Heat sources

The temperature limits given in point dedicated to temperature and humidity must be respected. When this is impossible, it is necessary to use a thermic shield at a distance not less than one meter.

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Electric or magnetic field

Variation in electric or magnetic fields must be eliminated in storage facilities as these could provoke currents in metal coupling, heating them. Similar fields could be caused by high-tension cables or high frequency generators.

Storage conditions

Hoses must be stored in a relaxed condition free from tension, compression or other deformation and not in contact with any objects that could potentially pierce or cut the hose. It is preferable to store hoses on special shelves or on dry surfaces. Coiled hoses must be stored horizontally avoiding piling. When this is not possible the height of the piles must be such to avoid permanent deformation of hoses stored underneath. The inside diameter of the coil, during the storage, must be such as to not compromise the performances of the product. In particular, this diameter must not have a value less than those indicated by the manufacturer. It is advisable to avoid storing coiled hoses on poles or hooks. Furthermore it is advisable to store hoses to be delivered straight, horizontally, without bending.

Rodents and insects

Hoses must be protected from rodents and insects. When such a risk is probable adequate precautions must be taken.

Marking or packaged items

It is advisable that hoses are always easy to identify even if packed.

Exit from storage

Prior to delivery, hoses must be checked for integrity and must correspond to the required use. After long storage if couplings are not clipped, swaged or built-in, it is necessary to check that locking collars are tight.

Return to storage

Hoses that have been used must be free from all substances prior to storage. Particular attention must be paid when abrasive or similar substances have been conveyed. After cleaning, the hose must be checked for integrity.

Handling

Hoses must be moved with care avoiding knocks, dragging over abrasive surfaces and compression. Hoses must not be pulled violently when twisted or knotted. Heavy hoses, normally delivered in a straight line, must be laid on special supports for transport. Should wood supports be used these must not be treated with creosote or painted with substances which could damage the rubber.

Bending radius

Installation underneath the minimum bending radius reduces the life of the hose considerably. Moreover it is necessary to avoid bending at fitting ends.

Torsion

Hoses are not manufactured to work in torsion, except for specific purposes.

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Test Recommendations for Hydraulic Hose and Hose Assemblies

Age	Recommendations
Up to 3 years	Use without further testing.
3 to 5 years	A pressure test at 1.5x the working pressure needs to be performed on all hoses.
5 to 8 years	Selected samples should be subjected to burst tests, cold bend tests, electrical tests and impulse tests. All hoses should be tested to 1.5x working pressure.
Over 8 years	These should be destroyed.

Test Recommendations for Thermoplastic Hose and Hose Assemblies

Age	Recommendations
Up to 3 years	Use without further testing.
5 to 8 years	A pressure test at 1.5x the working pressure needs to be performed on all hoses and selected samples should be burst tested.
8 to 12 years	Selected samples should be subjected to burst tests, cold bend tests, electrical tests and impulse tests
Over 12 years	These should be destroyed.

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Troubleshooting

Problem	Possible Causes	Solutions
End connector blow-off from the end of the hose	- Hose and/or fitting may be unsuitable for the application or wrong match - Hose maybe too short, twisted or that the radius of the bend is lower than the minimum bending radius	- Replace fittings and/or hose with more suitable alternatives - Increase the hose length and make sure no twisting occurs during operation
	- The hose maybe crimped to the wrong swaging dimension	- Check the assembly is being performed correctly. Make sure the crimping diameter is correct
	- Hose maybe incorrectly assembled or crimped incorrectly	- Check assembly is being performed correctly
	- Skiving of the hose maybe required or the skiving may have been performed incorrectly	- Check the specifications of the hose fittings/hose and whether skiving is required. Also find a skiving diameter and length from the manufacturer
Hose bursts on the outer surface of a bend	- It is highly likely that the hose exceeded the minimum bend radius and therefore the reinforced inner braid or spiral layer has opened, causing a weak point in the hose structure	- Increase the length of the hose assembly, use 90° or 45° fittings to remove the tight bends or alternatively use a more compact hose with a lower minimum bending radiusor spiral layer has opened, causing a weak point in the hose structure
	- The pressure increased past the minimum burst pressure of the hose	- Replace the hose with one more suitable for the application or reduce the pressure within the system

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Problem	Possible Causes	Solutions
Hose Liner deteriorates or swells, throughput is reduced, or leaks occur	- Hose liner is incompatible with the medium inside the hose	- Change the type of the hose to one more suitable for the medium within the hose
	- Temperature maybe outside the tolerance of the hose. This maybe the medium running through the hose or an environmental factor	- Change the type of hose to one more suitable for the temperature of the medium. If it is caused by the temperature of the surrounding environment, then a hose with a more temperature resistant cover maybe used
Hose has burst, and the wire reinforcement is rusted at the burst point	- Hose cover has been broken by trauma or abrasion	- Remove any routing issues that may cause trauma or abrasion. Possibly use a hose with a more resilient cover. Use some spiral wrap or other hose protection
	- Hose cover has been broken by extreme temperatures or chemical attack	- Choose a hose more suitable for the temperature and/or volatility of the medium
	- Hose cover has been broken by improper skiving of the hose	- Check that skiving is being performed correctly and to the right dimensions
	- Hose cover has been broken by gases trapped between the layers	- If gas is building up inside the cover, the hose may need to be perforated (pin-pricked). This lets the gas escape and prevents a pressure build up under the cover, which will eventually cause it to burst

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Problem	Possible Causes	Solutions
Leaking occurs at the threaded connector	- Sealing surface or thread maybe affected by contamination	- Clean the connectors, and make sure no damage has occurred to the threads or the sealing cones
	- The connector may be loose, or conversely the connector may be over tightened	- Tighten the connectors or replace them as necessary
	- The O-ring or soft seal may have deteriorated	- Replace the seals if necessary
	- It may also be worthwhile to check that the sealing surfaces match. It could be possible that the threads match, but a sealing cone may not be present	- Change the adapters to a matching connection

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Hydraulic Hose – General Safety Guidelines

Maintenance technicians, fabricators, end-users and installers need to be aware of the potential safety hazards when handling or even when in proximity to hydraulic hose assemblies. The following conditions can lead to personal injury and property damage:

1. ...—Always use hose in well-ventilated areas; some fluids may permeate the hose cover and create fume and/or fire hazards.

2. Hydraulic systems typically operate at very high pressures. Any leak of pressurized fluid can penetrate the skin, causing severe tissue damage and burns. One good approach is to use guards or shields around the hose assembly to reduce the risk of injury.

3. Whipping – under high operating pressures, the hose and/or fitting can come loose or blow, causing the end of the hose to whip with great force. Again, the hose assembly should be shielded, guarded and, whenever possible, secured to avoid injury or damage from whipping.

4. Hydraulic fluids are flammable and can explode with a source of ignition. To avoid possible injury or property damage, care should be taken to eliminate ignition sources and to properly route the hose assembly to minimize the chance of combustion.

5. Most hose is conductive. Some applications require use of non-conductive hose to avoid electrocution.

6. When hydraulic hose assemblies fail, the equipment it powers will fail, too, sometimes abruptly and without warning. Never work directly beneath hydraulically powered booms, shovels or other large, heavy pieces of equipment.

7. When air or gaseous materials are being conveyed, the correct hose should be used. A pin-perforated cover may be required. Perforations in the cover will prevent permeated gases from accumulating and blistering the cover. Check with your supplier for the correct hose specification.

8. Extreme care should be used when operating hand-held hydraulic tools where the operator is in proximity to the hydraulic hose assembly. The following steps should be taken to avoid injury:

   a. Use strain relievers on each end of the hose to prevent kinking, excessive bending or stress on the hose at the coupling.

   b. Never use the hose assembly to pull or carry the tool.

   c. Exposed hose near the operator should be guarded in case hose assembly fails to prevent injury from high pressure or high temperature fluid.

   d. Operators should be protected with the required safety clothing for the job and fluids being used.

   e. The hose should be protected against any external damage.

9. Hose assemblies should be properly routed to avoid strain and the possibility of the hose bursting. Proper routing will also protect the assembly against flex fatigue, excessive heat or abrasion.

10. When selecting a hose style and assembly, check for hose compliance to all relevant government, industry, and safety standards or regulations.

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High-Pressure Injection Hazards

High-pressure injection injuries (also known as grease gun injuries), are caused by the accidental injection of a foreign material, such as grease, oil, or solvent under pressure, through the skin and into the underlying tissue. This is analogous to medical techniques used to administer immunization shots without a needle.

A grease gun injury can cause serious delayed soft tissue damage and should be treated as a surgical emergency. Any person sustaining an injury of this sort should seek immediate medical attention, regardless of the appearance of the wound or its size.

Accidents involving injection injuries can occur when using any type of pressurized equipment. Two common cases in which petroleum products may be involved are accidents with pressurized grease guns or with hydraulic systems.

Pressurized grease guns are commonly used in service stations, garages and industrial plants. Typically, most service stations have grease guns operating at 500-1.000 kPa (90-150 psi) air pressure. Most modern industrial hydraulic systems operate in the range of 13 to 35 MPa (2,000 to 5,000 psi). A stream of oil ejected from a nozzle or leak under pressure of this magnitude has a velocity comparable to the muzzle velocity of a rifle bullet.

The most common sites of injury are the fingers or hand. However, any part of the body can be involved. With grease guns, especially, accidents usually occur when the injured person wipes the tip of the nozzle with his finger or the nozzle slips off the grease fitting while being held in place.

Grease may also be injected into the body from a leak in the grease line. In **hydraulic system accidents**, a leak in a hydraulic line can emit a high-velocity stream of oil and cause injury if it strikes a person. Workers are commonly injured when they try to stop the leak by covering it with their hand or finger.

Chemical irritation is not a major problem with most petroleum products because hydraulic oils and greases are generally non-irritating and low toxicity to skin. However, the resulting bacterial infection can be a problem because of the damaged tissue and circulation in the wound, even though it has been surgically opened and the foreign material removed. One of the dangers from this type of injury is that it is not recognized quickly by the injured person as being serious. Often the initial wound may be very small and essentially painless. The injured person may even continue working. However, in every case in which a person receives this type of injury, he or she should stop work and get immediate medical treatment.

The following are some basic rules that must be observed:

DON'T

- × Play around with or use a grease gun for practical jokes;
- × Touch the end of a grease gun;
- × Use any part of the body to test a grease gun for grease flow;
- × Use any part of the body to stop a leak in a hydraulic line.

DO

- Routinely check all hoses for wear and possible weak spots;
- Handle a grease gun with respect for its power;
- Take special care when starting up a new hydraulic system to be sure that every part of the system can withstand the operating pressure.

IN CASE OF A GREASE GUN ACCIDENT, SEEK IMMEDIATE MEDICAL TREATMENT. Identify the grease or oil involved in the accident. Contact the supplier or the manufacturer to obtain the product's Material Safety Data Sheet (MSDS) about possible toxicity if a physician or hospital needs more information.

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Hydraulic Hose and Electrocution

Although it is a mercifully infrequent occurrence, workers have been burned or electrocuted when using metal-reinforced hoses on aerial bucket trucks near energized power lines. Hydraulic hose, fluid and power lines are a deadly combination. Electrical contact between two power line phases through a metal-reinforced hydraulic hose can generate sufficient heat to rupture the hose and cause a fire. In addition, an electrocution hazard can be created if a metal-reinforced hose on the boom of a truck contacts an energized power line and allows current to flow through the truck chassis. Either scenario can quickly result in serious injury or death.

OSHA standards require that all hydraulic tools used on or near energized power lines or equipment be supplied with non-conducting hoses with sufficient strength for normal operating pressures. NIOSH recommends that the following precautions be taken to control the hazards associated with hydraulic hoses used on aerial bucket trucks:

- Employers should not install metal-reinforced hydraulic hoses on any part of the boom, aerial bucket or hydraulic attachments of aerial bucket trucks used near energized power lines;
- Employers should remove any metal-reinforced hoses currently installed on any part of the boom, aerial bucket or hydraulic attachments of aerial bucket trucks used to work near energized power lines. Before work begins, employers should require a competent person to conduct an initial and daily job site survey and inspect all equipment to identify hazards and implement appropriate controls;
- Employers should stress the importance of adherence to established safe work procedures. These include covering energized power lines in the immediate work area with insulating hoses or blankets, or de-energizing and grounding the lines before work begins. Workers should test de-energized power lines to verify that they have actually been de-energized;
- Employers should provide all workers with task-specific training that shows how each step controls the identified hazard;
- Employers should install all hydraulic hoses used in aerial buckets so that the flow of hydraulic fluid can be stopped immediately by the worker in the bucket. This objective can be achieved by incorporating a control valve into the hydraulic system in the aerial bucket. Manufacturers should continue research into the development of hydraulic fluids that are non-flammable and non-conducting.
- Employers should encourage equipment and tool manufacturers to design an independent coupling system to prevent the use of unsuitable hydraulic hoses on booms, aerial buckets or aerial bucket attachments. Labelling or colour coding hoses may also help workers who service this equipment.

These Guidelines reflect common practice procedures to be held for a Safe use of Hydraulic Fluid Power.

In no event shall Balflex® have any liability whatsoever to any person for any special, punitive, incidental or consequential damages been caused by mishandling of Hydraulic Fluid Power systems.

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PRODUCTS LIMITED WARRANTY

The products sold by Balflex® are warranted to our customers to be free from defects in material and workmanship when shipment at Balflex® warehouses takes place.

All warranty claims shall be made present in writing to Balflex®. Balflex® liability hereunder is limited to the purchase price of the merchandise proving to be defective or, at balflex sole discretion, to the replacement of such merchandise upon its authorized return to Balflex®.

This warranty is in lieu of and excludes all other warranties, or conditions expressed, implied, statutory or otherwise created under applicable law including, but not limited to the warranty of merchantability and the warranty of fitness for a particular purpose.

In addition, this warranty shall not apply and will be null and void to any products or portions thereof that have been subject to abuse, misuse, improper installation, maintenance or operation, electrical failure or abnormal conditions and to products that have been tampered with, altered, modified, repaired, reworked by anyone not approved by balflex or used in any other manner inconsistent with any Balflex® instructions or specifications. Balflex® disclaims any liability for any hose assemblies which have not been produced with in conformance with Balflex® assembly recommendations and parts.

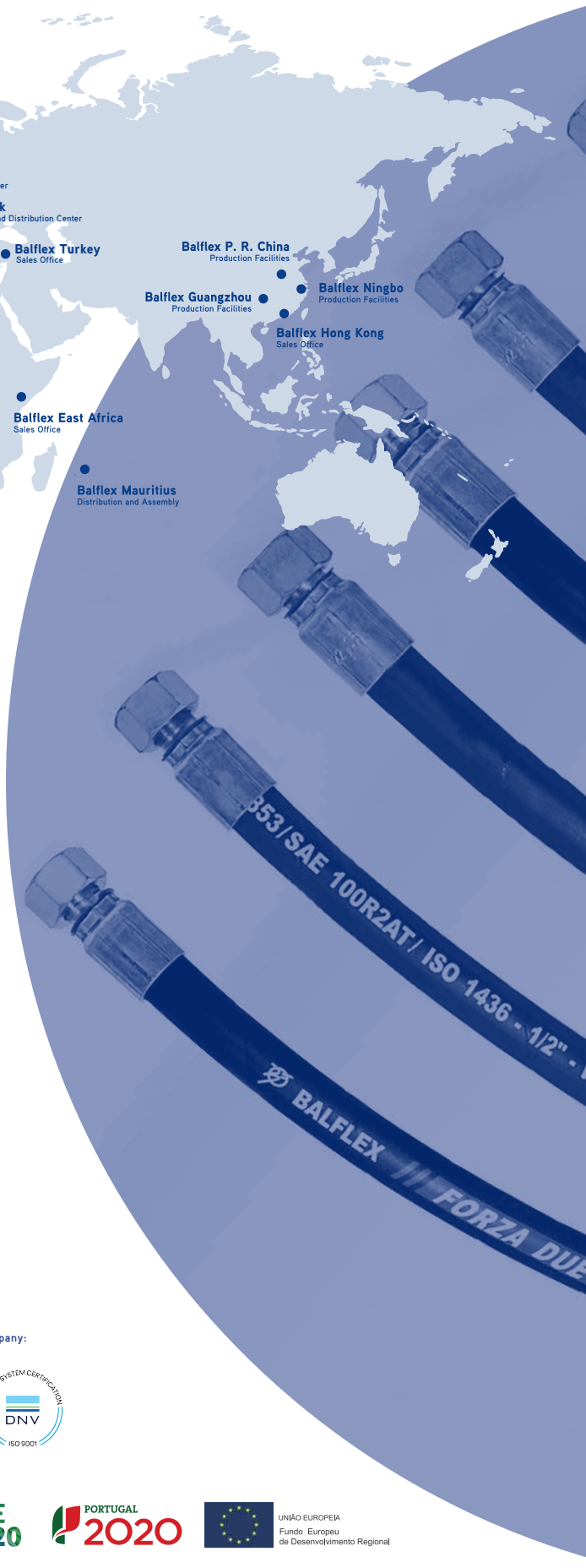
In no event shall balflex have any liability whatsoever to any person, including without limitation, any immediate buyer, purchaser or other third party, for any special, punitive, incidental or consequential damages, including without limitation, profit loss or customer loss, loss or damage to physical property of customer or any other person and loss of anticipated revenue, profits, goodwill, savings or other economic loss of customer or any other person.

Specification subject to change without prior notice. Errors and omission excluded.

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U.S.A. and Canada

6000 South Loop East Freeway
Houston, Tx 77033
United States of America
Tel: (1) 713-928-6064
Email: *sales@balflex.com*
www.balflexusa.com

Europe Headquarters

R. Bouça dos Estilhadouros, 226/254
4445-044 Alfena, Portugal
Tel: (351) 229 698 160
Email: *balflex@balflex.com*
www.balflex.com

Germany

Franckensteinstraße 8
77749 Hohberg
Tel: (49) 07808 4318857
Email: *info@2bhydraulik.de*
www.balflex.com

South America

R. Padre Cesari Lelli, 1014
Rodovia BR-116
CEP 83420-000 Quatro Barras/PR
Brasil
Tel: (55) 41 3671 3450
Email: *comercial@balflex.com.br*
www.balflex.com

www.balflex.com

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