PTFE Hoses

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).

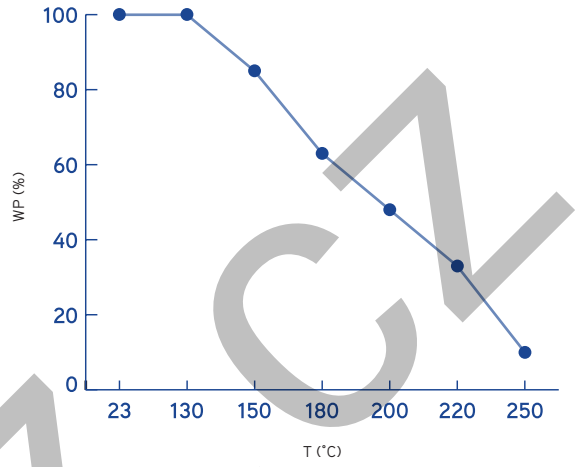
Selection, assembly and installation of thermoplastic hoses should follow **Balflex®** recommendations and **SAE J1273** and **DIN 20066** standards. **Balflon hose assemblies should always be inspected and hydraulically tested before installation.** All hydraulics systems should be tested against leakage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

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%

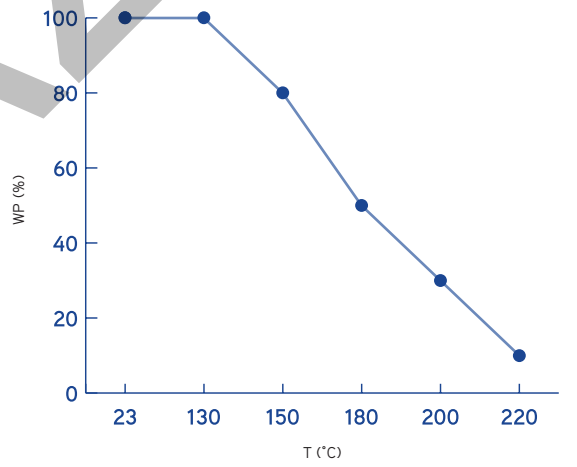


Table 1a: Rated working pressure at 20˚C (+68˚F) of Balflex® Balflon hoses (MPa / PSI)

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

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

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.

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.

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

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.

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	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.