Thermoplastic hoses

Thermoplastic hoses - medium and high pressure hoses made of thermoplastic polymers (most often of polyester, polyamide, polyurethane) with one or two textile or steel wire braids as reinforcement.

Features of thermoplastic hose:
- very low weight (even up to 60% lighter than rubber hoses),
- compact structure (small outside diameter in proportion to the internal one),
- small bending radius,
- good chemical resistance of the internal layer to hydraulic oil and chemicals,
- very smooth internal layer hardly affects flow rate,
- resistant to ageing, ozone and ultraviolet radiation.

The external layer is usually made of abrasion resistant polyurethane.
When the material of the internal layer is considered, general purpose thermoplastic hoses can be divided into the following:

material	main application	other application
polyester	hydraulic oil	air, gases, fuel, water-based fluids, chemicals
polyamide	solvent, paint	water-based fluids, isocyanate, polyol, air, gases, hydraulic oil

It is recommended to confirm the application of a hose for a particular medium with Technical Department of TUBES INTERNATIONAL®.

Standards:
Some types of thermoplastic hoses are standardized. Standards usually applied: SAE J517 (specifies SAE 100R7 and SAE 100R8 hoses), DIN 24951, ISO 3949 and EN 855. These standards define two types of hoses: with two textile braids (R7) and with two aramid fibre braids (R8).

Application:
- oil hydraulics,
- painting (airless paint sprayers),
- compressed air and gases,
- chemicals,
- water blasting.

Pinpricking of the external layer:
Over longer operation time gas particles start to penetrate the hose wall causing blisters or bubbles. Pinpricks - small holes in the external layer of the hose prevent this process. It is particularly recommended to pinprick the hoses for high pressure gas transfer and the area next to the fittings. Pinpricking is factory-made or when complete hose assemblies are made.

Static electricity:
If it is necessary for particular application to convey electrical charges away from the hose (hoses for paint, organic solvents, hoses with high flow rates), the choice of the hose with a metal braid or additional conductor (conductive fibre in a braid, etc.) is recommended. The fittings must be mounted in such a way so as to obtain electrical continuity of the assembly.

Twin and multiple hoses:
A twin version of thermoplastic hoses (two hoses with external layers welded together) is frequently used in fork-lift trucks, hydraulic installations of machine tools or process lines and in many other applications. A multiple hose version (three or four pieces, etc.) is available on request.

Assembly:
The thermoplastic hoses require Z type fittings for high pressure hoses (crimped with crimping machine).
In some cases reusable S type fittings can be used. Ultra high pressure hoses (about 700 bar) should be crimped with special kind of fittings (see HIGH PRESSURE chapter - UHP equipment section).

Table for initial thermoplastic hose selection

**for hydraulic oil installations, gases, air, fuels,
water - based fluids (internal layer - polyester)**

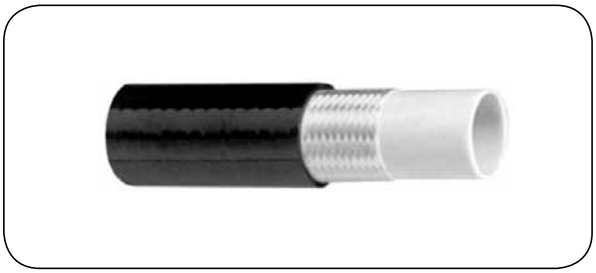
max. working pressure [bar]	nominal diameter DN [mm, inch]									
	3	4	5	6	8	10	13	16	19	26
	1/8”	5/32”	3/16”	1/4”	5/16”	3/8”	1/2”	5/8”	3/4”	1”
700÷800	see “HIGH PRESSURE chapter - UHP accessories” section									
450÷500			FK0100	FK0100						
400÷450					FK0100	FK0100 MTKH				
350÷400		F0220	F0220	F0220			MTKH			
300÷350	OL8		OL8 MTH1	OL8	F0220 OL8		FK0100			
250÷300			FM040	FM040 MTH1		F0220 OL8				
200÷250	OL7	OL7 F0200 OL5 R7	F0200 OL7 FP17010 R7 R18	OL7M F0200 R7 R18	OL7M MTH1 FM040 R18	OL7M MTH1 FM040 R18	F0220 OL8 OL7M R18	FK0100 R18	MTKH	
150÷200	OL5	OL5	OL5	OL7 FP17010	F0200 OL7 OL5M FP17010 R7	F0200 OL7 FP17010 R7	FM040 MTH1 F0200	F0220 OL8	FK0100 OL8 F0220	FK0100
100÷150			F0080	F0080 OL5	F0080 OL5	F0080 OL5	OL7 R7	MTH1 FM040 F0200 OL7 R7	MTH1 FM040 F0200	OL8 F0220 MTH1
50÷100							OL5		OL7 R7	FM040 F0200 OL7 R7

The maximum working pressure of a particular hose type (the one given in the catalogue) is in a pressure range in the table above. When selecting a hose for the particular diameter and maximum working pressure it is recommended to read out a suitable hose type, find the precise maximum working pressure in the hose description and consider all additional factors such as: medium, temperature, bending radius, vibrations and dynamic bending, electrical conductivity or antistatic properties, pinpricking of the external layer (for gases and air) and external working conditions of the hose.

AS FAST AS IT IS POSSIBLE !!!

We assemble and supply complete thermoplastic hose assemblies according to customer specifications.

Thermoplastic hoses - polyester

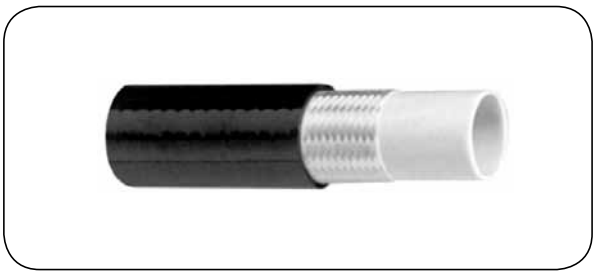


F 0080

Internal layer: Polyester
Reinforcement: Polyester braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels, water-based fluids.
Assembly: Use Z type fittings (IT-61).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-F0080B-05	5	8.3	130	520	30	4.20
MC-F0080C-06	6.6	11.4	130	520	40	8.30
MC-F0080D-08	8	13.4	120	480	50	11.00
MC-F0080E-10	9.7	15.5	120	480	60	13.50
MC-F0080F-13	13	19.2	110	440	90	19.00



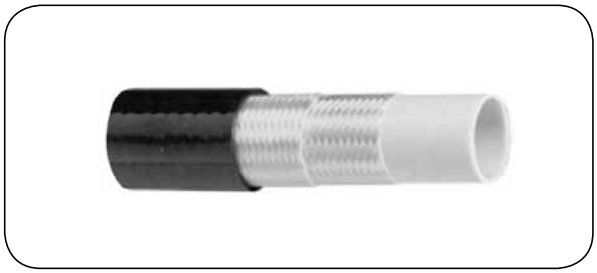
OL 5

Internal layer: Polyester
Reinforcement: Polyester braid
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels, water-based fluids. A pinpricked version is available on request (for gases and air).
Assembly: Use Z type fittings (IT-60).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-OL5-03	3.5	7.5	200	800	25	3.70
ZC-OL5-04	4	8	200	800	30	4.50
ZC-OL5-04X8,3	4	8.3	210	840	30	4.80
ZC-OL5-04X8,6	4	8.6	210	840	30	4.80
ZC-OL5-05	4.8	9.2	200	800	30	5.90
ZC-OL5-06	6.4	10.8	145	580	45	7.00
ZC-OL5-08	8	13	120	480	50	8.70
ZC-OL5M-08	8	13.7	180	540	45	11.30
ZC-OL5-10	9.7	14.8	115	460	55	11.40
ZC-OL5-13	13	18.7	80	320	90	16.90

Thermoplastic hoses - polyester



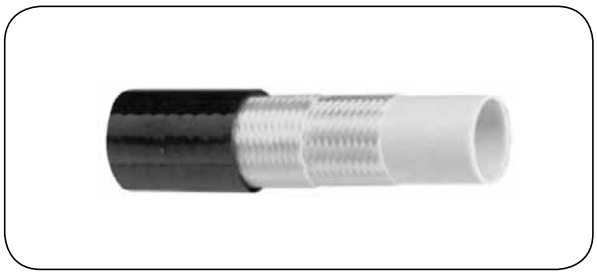
FP 17010 / FP 27010

Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels and water-based fluids.
Standards: SAE 100R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-62).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-FP17010B-05	5	9.3	207	830	30	5.70
MC-FP17010C-06*	6.6	11.8	190	760	40	9.00
MC-FP17010D-08*	8	14.2	172	690	50	12.90
MC-FP17010E-10*	9.7	16	155	620	70	15.00

* - a twin version available, code example: MC-FP27010C-06



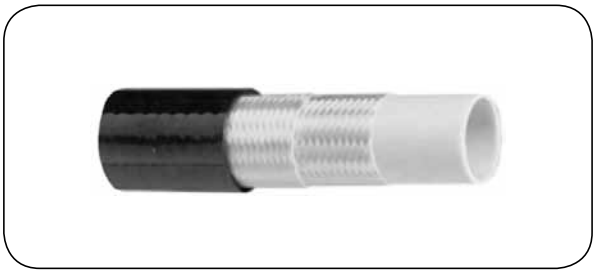
R7 ANTIABRASION

Internal layer: Polyester
Reinforcement: One or two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels and water-based fluids.
Standards: SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT 87).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-R7-04	4	8.3	210	840	25	4.50
TO-R7-05	5	9.6	210	840	25	6.00
TO-R7-06	6.5	12.2	210	840	35	10.00
TO-R7-08	8.1	14.3	190	760	45	13.00
TO-R7-10	9.7	16	160	640	55	14.50
TO-R7-13	13	20.3	140	560	75	22.00
TO-R7-16	16.3	23.7	105	420	110	28.00
TO-R7-19	19.5	27.1	90	360	140	33.50
TO-R7-25	25.9	34	70	280	190	45.50

Thermoplastic hoses - polyester



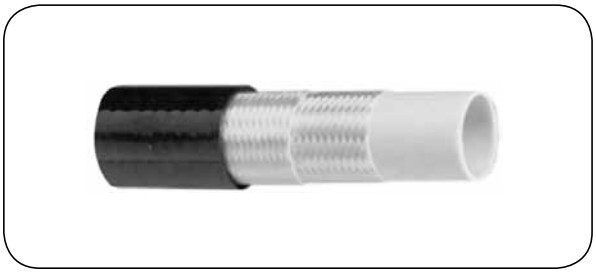
OL 7 / OLB 7

Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels, water-based fluids. A pinpricked version is available on request (for gases and air).
Standards: SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-59).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-OL7-03	3.5	8.5	230	920	25	5.70
ZC-OL7-04	4	8.9	250	1000	25	5.80
ZC-OL7-05*	4.8	10	210	840	30	7.30
ZC-OL7-06*	6.4	11.8	200	800	35	9.00
ZC-OL7M-06	6.4	12.7	250	1000	40	10.70
ZC-OL7-08*	8	14.3	190	760	45	12.80
ZC-OL7M-08	8	15	250	1000	50	15.00
ZC-OL7-10*	9.7	16	175	700	55	15.50
ZC-OL7M-10	9.5	18	250	1000	50	20.50
ZC-OL7-13*	13	20.3	140	560	75	21.90
ZC-OL7M-13	13	22.8	210	840	70	31.30
ZC-OL7-16	16	23.5	105	420	120	27.70
ZC-OL7-19	19.2	26.5	90	360	145	33.00
ZC-OL7-25	25.6	32.5	70	280	200	40.30

* - twin version available, code example: ZC-OLB7-05



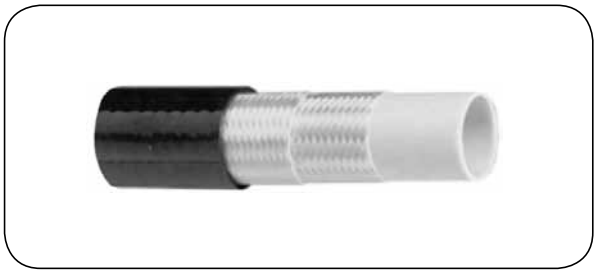
R18 CPLT

Internal layer: Polyester
Reinforcement: One or two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -55°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels, water-based fluids. Resistant to very low temperatures.
Standards: SAE 100R18, ISO 3949-R18.
Assembly: Use Z type fittings (IT-106).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-R18CPLT-05	5	9.6	210	840	25	6.00
TO-R18CPLT-06	6.5	12.2	210	840	35	9.50
TO-R18CPLT-08	8.1	14.3	210	840	45	13.00
TO-R18CPLT-10	9.7	16.6	210	840	45	16.50
TO-R18CPLT-13	13	22.5	210	840	70	29.50
TO-R18CPLT-16	16.3	26.1	210	840	100	37.00

Thermoplastic hoses - polyester



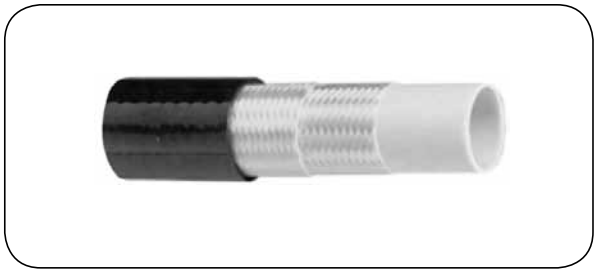
F 0200 / F 2200

Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels and water-based fluids.
Standards: DIN 24951, SAE 100R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-63).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-F0200A-04	4	8.3	235	950	20	4.90
MC-F0200B-05	5	9.3	220	880	26	6.30
MC-F0200C-06*	6.6	12.5	215	860	30	10.60
MC-F0200D-08*	8	14.3	195	780	40	13.00
MC-F0200E-10*	9.7	16.5	187	750	70	16.60
MC-F0200F-13*	13	20.5	157	630	90	23.00
MC-F0200G-16	16.4	24	130	520	130	27.60
MC-F0200H-19	19.5	27.5	105	420	150	34.20
MC-F0200I-26	26	34.2	77	310	180	43.30

* - twin version available, code example: MC-F2200C-06.



OL 8 / OLB 8

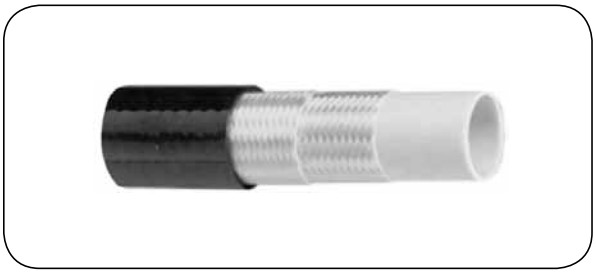
Internal layer: Polyester
Reinforcement: Two aramid fibre braids
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels and water-based fluids. A pinpricked version is available on request (for gases and air).
Standards: SAE 100R8, EN 855-R8, ISO 3949-R8.
Assembly: Use Z type fittings (IT-65).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-OL8-03	3.5	7.1	420	1680	30	3.70
ZC-OL8-05*	4.8	10	350	1400	35	7.20
ZC-OL8-06*	6.4	11.8	350	1400	50	8.50
ZC-OL8-08*	8	14.3	325	1300	60	12.60
ZC-OL8-10*	9.7	16	280	1120	70	14.60
ZC-OL8-13*	13	20.3	245	980	95	22.50
ZC-OL8-16	16	23.5	195	780	125	26.50
ZC-OL8-19	19.2	26.5	165	660	150	35.20
ZC-OL8-25	25.6	34.7	145	580	200	50.50

* - twin version available, code example: ZC-OLB8-06.

Thermoplastic hoses - polyester



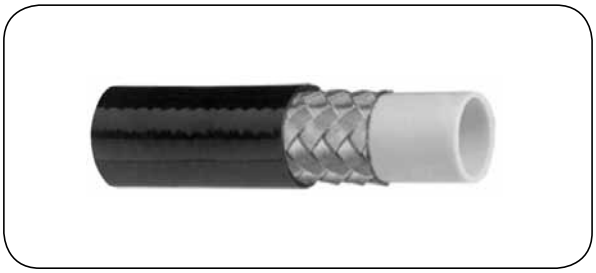
F 0220 / F 2220

Internal layer: Polyester
Reinforcement: One or two aramid fibre braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels and water-based fluids.
Standards: SAE 100R8, ISO 3949-R8.
Assembly: Use Z type fittings (IT-64).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-F0220A-04	4	8.3	362	1450	15	5.00
MC-F0220B-05	5	9.3	362	1450	22	6.30
MC-F0220C-06*	6.6	12.5	362	1450	30	10.50
MC-F0220D-08*	8	14.3	350	1400	40	12.60
MC-F0220E-10*	9.7	16.5	300	1200	70	14.80
MC-F0220F-13*	13	20.5	250	1000	90	22.70
MC-F0220G-16	16.4	24	200	800	130	27.70
MC-F0220H-19	19.5	27.5	162	650	150	34.00
MC-F0220I-26	26	34.2	140	560	190	42.50

* - twin version available, code example: MC-F2220C-06.



FM 040 / FM 240

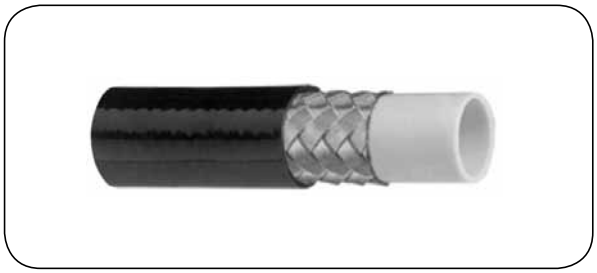
Internal layer: Polyester
Reinforcement: One steel wire braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels and water-based fluids.
Assembly: Use Z type fittings (IT-67).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-FM040B-05	5	9.3	330	1320	20	10.00
MC-FM040C-06*	6.6	12	300	1200	35	16.80
MC-FM040D-08*	8	13.5	215	860	40	19.00
MC-FM040E-10*	9.9	15.5	215	860	60	24.90
MC-FM040F-13*	13	19.5	180	720	70	31.40
MC-FM040G-16	16.4	23	145	580	110	40.10
MC-FM040H-19	19.5	26.5	120	480	150	48.50
MC-FM040I-26	26	34.2	97	390	170	68.90

* - twin version available, code example: MC-FM240C-06.

Thermoplastic hoses - polyester



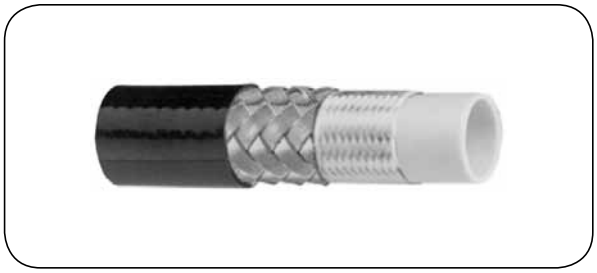
MTH 1 / MTBH 1

Internal layer: Polyester
Reinforcement: One steel wire braid
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels and water-based fluids. A pinpricked version is available on request (for gases and air).
Assembly: Use Z type fittings (IT-66).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-MTH1-05*	4.8	10	325	1300	30	13.30
ZC-MTH1-06*	6.4	11.9	300	1200	40	17.00
ZC-MTH1-08*	8	14	240	960	50	22.10
ZC-MTH1-10*	9.7	16	225	900	60	26.00
ZC-MTH1-13*	13	19.2	190	760	75	32.60
ZC-MTH1-16	16.3	23.3	150	600	110	41.20
ZC-MTH1-19	19.2	25.5	130	520	150	45.40
ZC-MTH1-25	25.6	32.5	105	420	185	59.00

* - twin version available, code example: ZC-MTBH1-06.



FK 0100 / FK 2100

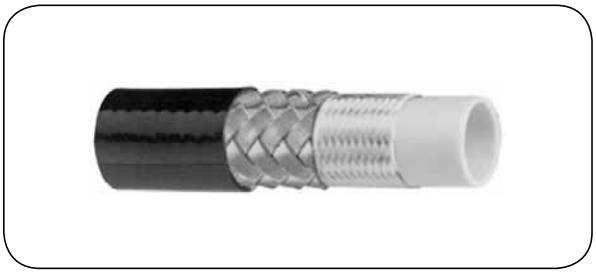
Internal layer: Polyester
Reinforcement: One aramid fibre braid + one steel wire braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels and water-based fluids.
Assembly: Use Z type fittings (IT-70).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-FK0100B-05	5	11.2	500	2000	30	14.50
MC-FK0100C-06*	6.6	13.2	500	2000	40	19.60
MC-FK0100D-08*	8	15.2	450	1800	50	23.20
MC-FK0100E-10*	9.8	18.5	425	1700	80	34.20
MC-FK0100F-13*	13	21.5	350	1400	90	42.40
MC-FK0100G-16*	16.4	24.5	225	900	100	45.30
MC-FK0100H-19*	19.5	28	200	800	130	51.20
MC-FK0100I-26*	26	35	175	700	150	68.50

* - twin version available, code example: MC-FK2100C-06.

Thermoplastic hoses - polyester



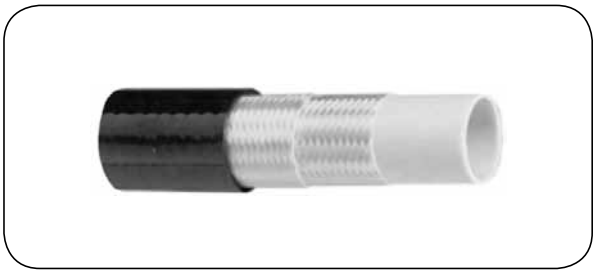
MTKH / MTKHB

Internal layer: Polyester
Reinforcement: One aramid fibre braid + one steel wire braid
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels, water-based fluids. A pinpricked version is available on request (for gases and air).
Assembly: Use Z type fittings (IT-69).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-MTKH-10*	9.5	18	425	1700	60	34.40
ZC-MTKH-13*	13	22	375	1500	75	46.00
ZC-MTKH-19	19.2	28.2	225	900	150	65.90

* - twin version available, code example: ZC-MTKHB-06.



OL 7 MARINE

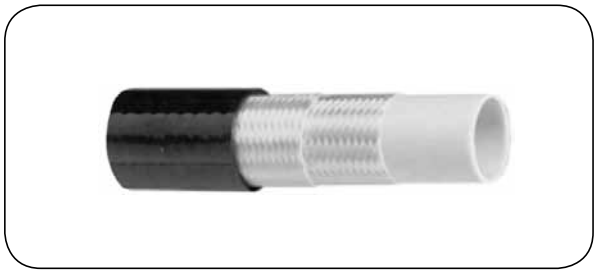
Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Polyurethane
Working temp.: From -54°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels, water-based fluids. A pinpricked version is available on request (for gases and air). Resistant to seawater. Flexible even at low temperatures.
Standards: SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-59).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-OL7MARINE-03	3.5	8.5	230	920	25	5.70
ZC-OL7MARINE-04	4	8.9	250	1000	25	5.80
ZC-OL7MARINE-05	4.8	10	210	840	30	7.30
ZC-OL7MARINE-06	6.4	11.8	200	800	35	9.00
ZC-OL7MARINE-08	8	14.3	190	760	45	12.80
ZC-OL7MARINE-10	9.7	16	175	700	55	15.50
ZC-OL7MARINE-13	13	20.3	140	560	75	21.90
ZC-OL7MARINE-16	16	23.5	105	420	120	27.70
ZC-OL7MARINE-19	19.2	26.5	90	360	145	33.00
ZC-OL7MARINE-25	25.6	32.5	70	280	200	40.30

Other standard hoses are available in MARINE version as well.

Thermoplastic hoses - polyester



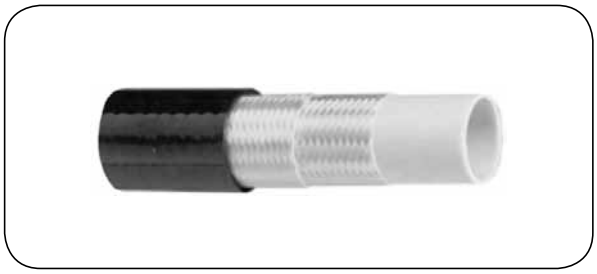
FP 17100 MARINE

Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuels, chemicals, water-based fluids. Resistant to seawater.
Standards: SAE 100R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-62).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-FP17100B-05	5	10	208	830	30	7.00
MC-FP17100C-06	6.6	11.8	190	760	40	8.50
MC-FP17100D-08	8	14.2	173	690	50	12.50
MC-FP17100E-10	9.7	16	155	620	70	14.40

Other standard hoses are available in a MARINE version as well.



OL 7 NON CONDUCTIVE

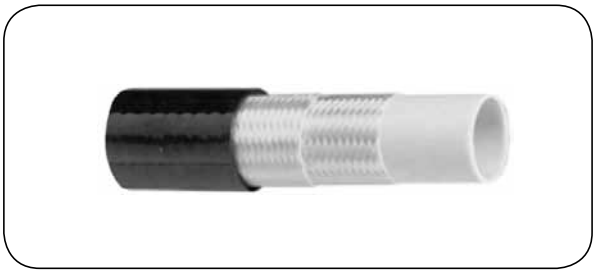
Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Orange polyurethane
Working temp.: From -40°C up to +100°C (for water up to +70°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels and water-based fluids. Used near electrical transformers, medium and high voltage installations. Non-conductive - a leakage current in test conditions according to the standard, lower than 50 µA at 246 kV/m voltage for 5 min.
Standards: ANSI 92.2, SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-59).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-OL7NC-03	3.5	8.5	230	920	25	5.70
ZC-OL7NC-04	4	8.9	250	1000	25	5.80
ZC-OL7NC-05	4.8	10	210	840	30	7.30
ZC-OL7NC-06	6.4	11.8	200	800	35	9.00
ZC-OL7NC-08	8	14.3	190	760	45	12.80
ZC-OL7NC-10	9.7	16	175	700	55	15.50
ZC-OL7NC-13	13	20.3	140	560	75	21.90
ZC-OL7NC-16	16	23.5	105	420	120	27.70
ZC-OL7NC-19	19.2	26.5	90	360	145	33.00
ZC-OL7NC-25	25.6	32.5	70	280	200	40.30

Other standard hoses are available in NON-CONDUCTIVE version as well.

Thermoplastic hoses - polyester

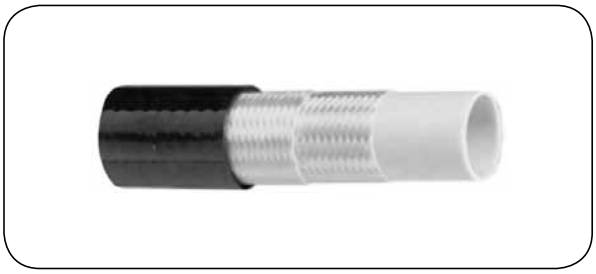


FP 17051 NON CONDUCTIVE

Internal layer: Polyester
Reinforcement: Two polyester braids
External layer: Orange polyurethane
Working temp.: From -40°C up to +93°C (for water up to +65°C)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels and water-based fluids. Used near electrical transformers, medium and high voltage installations. Non-conductive - a leakage current in test conditions according to the standard, lower than 50 µA at 246 kV/m voltage for 5 min.
Standards: DIN 24951, SAE 100R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-63).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-FP17051B-05	5	9.3	220	880	26	6.30
MC-FP17051C-06	6.6	12.5	215	860	30	10.60
MC-FP17051D-08	8	14.3	195	780	40	13.00
MC-FP17051E-10	9.7	16.5	187	750	70	16.60
MC-FP17051F-13	13	20.5	157	630	90	23.00



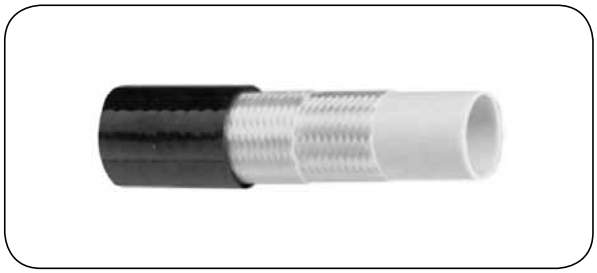
ATOXIC 7 MARINE

Internal layer: Non-toxic polyester
Reinforcement: Two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +82°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed to transfer fluids, gases and air. The non-toxic internal layer can come into contact with food and breathing air - compliant with the requirements of FDA 21 CRF standard. Suitable for application in high humidity environments. The external layer resistant to UV radiation and microorganisms. Once the fittings are assembled, the hose should be sterilized. Not suitable for medical, pharmaceutical application and food fluids with alcohol content.
Standards: SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-59).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-AT7MARINE-03	3.5	8.5	230	920	25	5.70
ZC-AT7MARINE-04	4	8.9	250	1000	25	5.80
ZC-AT7MARINE-05	4.8	10	210	840	30	7.30
ZC-AT7MARINE-06	6.4	11.8	200	800	35	9.00
ZC-AT7MARINE-08	8	14.3	190	760	45	12.80
ZC-AT7MARINE-10	9.7	16	175	700	55	15.50
ZC-AT7MARINE-13	13	20.3	140	560	75	21.90
ZC-AT7MARINE-16	16	23.5	105	420	120	27.70
ZC-AT7MARINE-19	19.2	26.5	90	360	145	33.00
ZC-AT7MARINE-25	25.6	32.5	70	280	200	40.30

Thermoplastic hoses - polyester

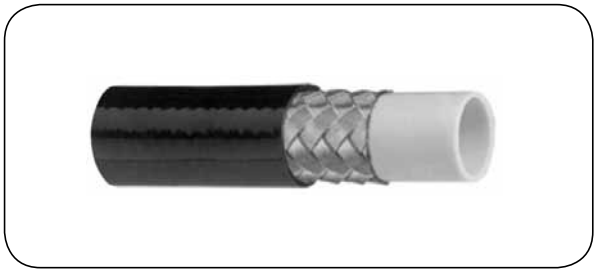


ATOXIC 8 MARINE

Internal layer: Non-toxic polyester
Reinforcement: Two aramid fibre braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +82°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed to transfer fluids, gases and air. The non-toxic internal layer can come into contact with food and breathing air - compliant with the requirements of FDA 21 CRF standard. Suitable for application in high humidity environments. The external layer resistant to UV radiation and microorganisms. Once the fittings are assembled, the hose should be sterilized. Not suitable for medical, pharmaceutical application and food fluids with alcohol content.
Standards: SAE 100R8, EN 855-R8, ISO 3949-R8.
Assembly: Use Z type fittings (IT-65).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-AT8MARINE-05	4.8	10	350	1400	35	7.20
ZC-AT8MARINE-06	6.4	11.8	350	1400	50	9.70
ZC-AT8MARINE-10	9.7	16	280	1120	70	14.90
ZC-AT8MARINE-13	13	20.3	245	980	95	22.50
ZC-AT8MARINE-19	19.2	26.5	165	660	150	35.20



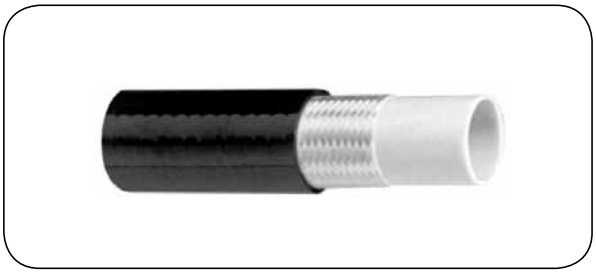
050 CO2

Internal layer: Polyester
Reinforcement: One steel wire braid
External layer: Pinpricked polyurethane
Working temp.: From -60°C up to +93°C

Characteristics: Hose designed for CO_2 installations in industrial and marine fire extinguishing systems.
Assembly: Use Z type fittings (IT-107).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-050CO2-05	5	9.7	300	1200	30	12.00
TO-050CO2-06	6.5	11.7	275	1100	40	15.50
TO-050CO2-08	8.1	13.2	212	850	55	19.50
TO-050CO2-10	9.8	15.5	212	850	65	23.00
TO-050CO2-13	13	18.8	175	700	85	30.00
TO-050CO2-16	16.3	22	140	560	115	32.00

Thermoplastic hoses - polyester

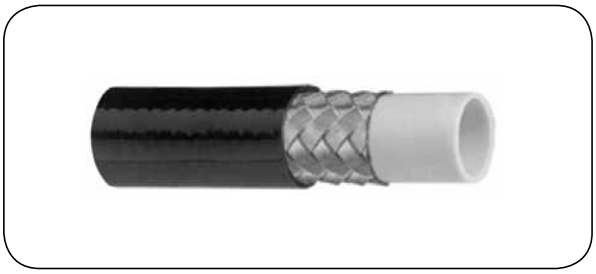


120 AIR CYLINDER FILLING

Internal layer: Polyester
Reinforcement: One aramid fibre braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +80°C

Characteristics: Hose designed for filling gas cylinders. The odourless internal layer meets the requirements of FDA and CGA G-7.1-2004 (for breathing air). Not suitable for explosive gases e.g. oxygen, hydrogen.
Assembly: Use Z type fittings.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-120ACF-05	5	9.6	420	1680	30	6.50
TO-120ACF-06	6.5	12.1	420	1680	50	9.50



140 BEVERAGE DISPENSING

Internal layer: Polyester
Reinforcement: 140A - two synthetic fibre braids
140B - steel wire braid
140C - aramid fibre braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +80°C

Characteristics: Hose designed for carbon dioxide, nitrogen, mixed gases. Primarily intended for beverage dispensers e.g. for beer, juice. The odourless internal layer meets the requirements of FDA 21 CRF.
Assembly: Use Z type fittings.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-140BD-A-06	6.5	12.2	210	840	35	10.00
TO-140BD-B-06	6.4	11.6	300	1200	40	15.50
TO-140BD-C-06	6.5	11.5	350	1400	50	9.00

Table for initial thermoplastic hose selection

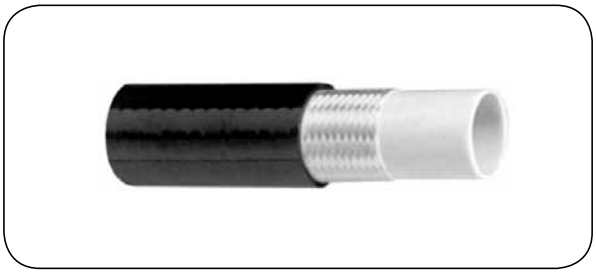
for paint, solvent, isocyanate, polyol, water-based fluids, hydraulic oil (internal layer - polyamide)

max. working pressure [bar]	nominal diameter DN [mm, inch]									
	3	4	5	6	8	10	13	16	19	26
	1/8”	5/32”	3/16”	1/4”	5/16”	3/8”	1/2”	5/8”	3/4”	1”
700÷800	see “HIGH PRESSURES chapter, section - UHP” accessories									
450÷500			SK0100* MTK	SK0100*	MTK*					
400÷450					SK0100*	SK0100* MTK*				
350÷400	VE8		S0230	MT2* S0230			MTK*			
300÷350	MT1*		VE8 AS8** MT1*	VE8 AS8**	S0230 VE8 AS8** MT2*		SK0100*			
250÷300			SM040	MT1* SM040		MT2* S0230 VE8 AS8**				
200÷250	VE7	S0190	AS7** S0190 VE7	VE7M AS7** S0190	MT1* SM040*	AS7** MT1* SM040*	MT2* S0230 VE8 AS8**	MTK* SK0100*	MTK*	
150÷200	VE5	VE5	VE5	VE7	S0190 VE7 AS7**	S0190 VE7	SM040* MT1* S0190	VE8 MT2*	SK0100* VE8 MT2*	MTK* SK0100*
100÷150			S0090	S0090 VE5	S0090 VE5	S0090 VE5	VE7 AS7**	MT1* SM040* S0190 VE7 AS7**	MT1* SM040* S0190	MT2* VE8 MT1*
50÷100							VE5		VE7 AS7**	SM040* S0190 VE7 AS7**

The maximum working pressure of a particular hose type (the one given in the catalogue) is in a pressure range in the table above. When selecting a hose for the particular diameter and maximum working pressure it is recommended to read out a suitable hose type, find the precise maximum working pressure in the hose description and consider all additional factors such as: medium, temperature, bending radius, vibrations and dynamic bending, electrical conductivity or antistatic properties, pinpricking of the external layer (for gases and air) and external working conditions of the hose.

Symbols:
* - hose with a metal braid
** - hose with conductive fibre in a braid

Thermoplastic hoses - polyamide

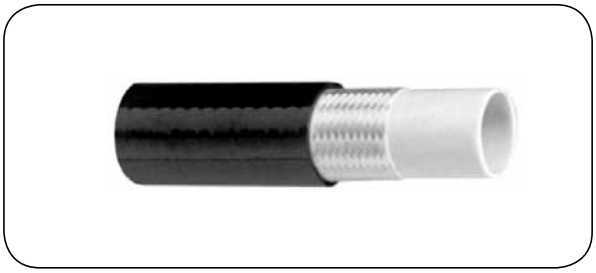


S 0090

Internal layer: Polyamide
Reinforcement: Polyester braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol, gases, air and water-based fluids.
Assembly: Use Z type fittings (IT-61).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-S0090B-05	5	8.3	130	520	30	3.90
MC-S0090C-06	6.6	11.4	130	520	40	7.50
MC-S0090D-08	8	13.4	120	480	50	10.00
MC-S0090E-10	9.7	15.5	120	480	60	12.40
MC-S0090F-13	13	19.2	110	440	90	20.00



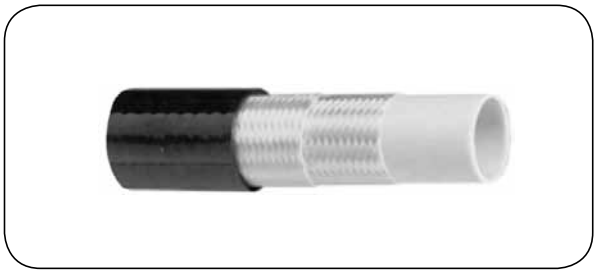
VE 5

Internal layer: Polyamide
Reinforcement: Polyester braid
External layer: Polyurethane
Working temp.: From -40°C up to +100°C
(for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Assembly: Use Z type fittings (IT-60).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-VE5-03	3.5	7.5	200	800	25	3.60
ZC-VE5-04	4	8	200	800	30	4.10
ZC-VE5-05	4.8	9.2	200	800	30	5.60
ZC-VE5-06	6.4	10.8	145	580	45	6.50
ZC-VE5-08	8	13	120	480	50	9.40
ZC-VE5-10	9.7	14.8	115	460	55	11.50
ZC-VE5-13	13	18.7	80	320	90	15.70

Thermoplastic hoses - polyamide

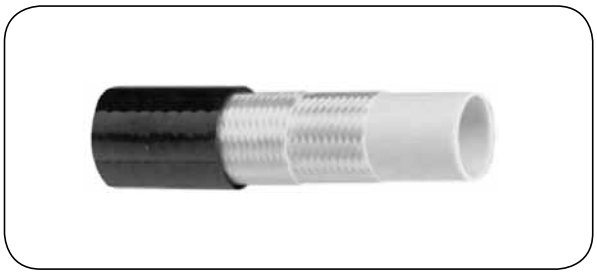


VE 7

Internal layer: Polyamide
Reinforcement: Two polyester braids
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Standards: SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-59).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-VE7-03	3.5	8.5	230	920	25	5.40
ZC-VE7-05	4.8	10	210	840	30	6.80
ZC-VE7-06	6.4	11.8	200	800	35	8.70
ZC-VE7M-06	6.4	12.7	250	1000	40	10.50
ZC-VE7-08	8	14.3	190	760	45	12.60
ZC-VE7-10	9.7	16	175	700	55	14.60
ZC-VE7-13	13	20.3	140	560	75	21.90
ZC-VE7-16	16	23.5	105	420	120	25.80
ZC-VE7-19	19.2	26.5	90	360	145	30.10
ZC-VE7-25	25.6	32.5	70	280	200	36.90



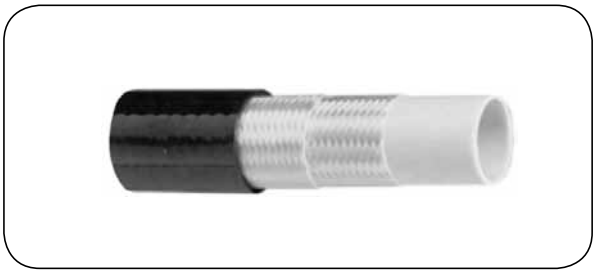
AS 7 CONDUCTIVE

Internal layer: Polyamide
Reinforcement: Two polyester braids with conductive fibre
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible, antistatic ($R < 3x10^4$ Ω/m) hose designed for solvents, paints, isocyanate, polyol and water-based fluids.A pinpricked version is available on request (for gases and air).
Standards: ISO 8031, SAE 100R7, EN 855-R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-71).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-AS7-05	4.8	10.5	250	1000	30	7.50
ZC-AS7-06	6.4	12.7	228	912	40	10.20
ZC-AS7-08	8	14.3	190	760	55	12.60
ZC-AS7-10	9.7	17.3	228	912	60	17.90
ZC-AS7-13	13	20.3	140	560	75	21.40
ZC-AS7-16	16	23.5	105	420	120	25.80
ZC-AS7-19	19.2	26.5	90	360	145	30.10
ZC-AS7-25	25.6	32.5	70	280	200	36.90

Thermoplastic hoses - polyamide



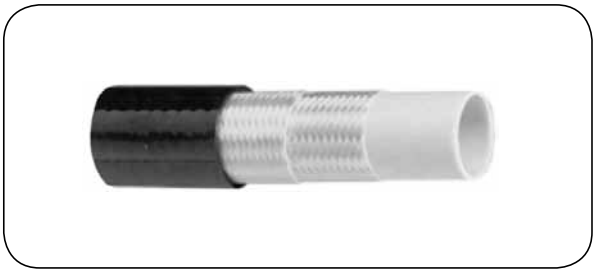
S 0190 / S 2190

Internal layer: Polyamide 11-12
Reinforcement: Two polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol, gases, air and water-based fluids.
Standards: DIN 24951, SAE 100R7, ISO 3949-R7.
Assembly: Use Z type fittings (IT-63).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-S0190A-04	4	8.3	235	950	20	4.80
MC-S0190B-05*	5	9.3	220	880	26	5.70
MC-S0190C-06*	6.6	12.5	215	860	30	10.10
MC-S0190D-08*	8	14.3	195	780	40	12.00
MC-S0190E-10*	9.7	16.5	187	750	70	15.00
MC-S0190F-13*	13	20.5	157	630	90	21.80
MC-S0190G-16	16.4	24	130	520	130	25.80
MC-S0190H-19	19.5	27.5	105	420	150	32.20
MC-S0190I-26	26	34.2	77	310	180	43.70

* - twin version available, code example: MC-S2190C-06.



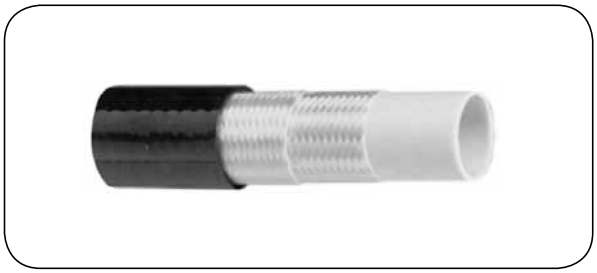
VE 8

Internal layer: Polyamide
Reinforcement: Two aramid fibre braids
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Standards: SAE 100R8, EN 855-R8, ISO 3949-R8.
Assembly: Use Z type fittings (IT-65).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-VE8-03	3.5	7.1	420	1680	30	3.10
ZC-VE8-05	4.8	10	350	1400	35	8.80
ZC-VE8-06	6.4	11.8	350	1400	50	8.30
ZC-VE8-08	8	14.3	325	1300	60	12.20
ZC-VE8-10	9.7	16	280	1120	70	14.00
ZC-VE8-13	13	20.3	245	980	95	21.80
ZC-VE8-16	16	23.5	195	780	125	28.50
ZC-VE8-19	19.2	26.5	165	660	150	34.10
ZC-VE8-25	25.6	34.7	145	580	200	47.50

Thermoplastic hoses - polyamide

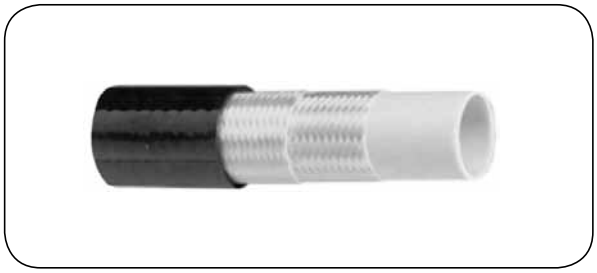


AS 8 CONDUCTIVE

Internal layer: Polyamide
Reinforcement: Two aramid fibre braids with conductive fibre
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible, antistatic (R < $3x10^4$ Ω/m) hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Standards: ISO 8031, SAE 100R8, EN 855-R8, ISO 3949-R8.
Assembly: Use Z type fittings (IT-65).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-AS8-05	4.8	10	350	1400	35	8.80
ZC-AS8-06	6.4	11.8	350	1400	50	10.20
ZC-AS8-08	8	14.3	325	1300	60	12.20
ZC-AS8-10	9.7	16	280	1120	70	16.80
ZC-AS8-13	13	20.3	245	980	95	21.80



S 0230 / S 2230

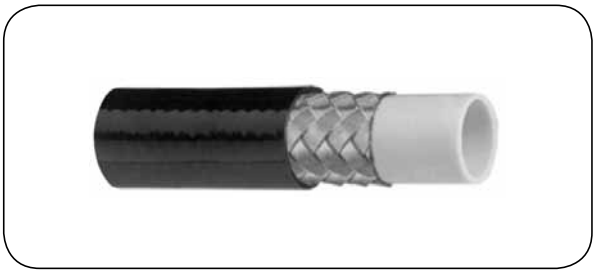
Internal layer: Polyamide
Reinforcement: Two aramid fibre braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol, gases, air and water-based fluids.
Standards: SAE 100R8, ISO 3949-R8.
Assembly: Use Z type fittings (IT-64).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-S0230B-05	5	9.3	362	1450	22	5.80
MC-S0230C-06*	6.6	12.5	362	1450	30	10.00
MC-S0230D-08*	8	14.3	350	1400	40	12.20
MC-S0230E-10*	9.7	16.5	300	1200	70	15.80
MC-S0230F-13*	13	20.5	250	1000	90	21.90

* - a twin version available, code example: MC-S2230C-06.

Thermoplastic hoses - polyamide



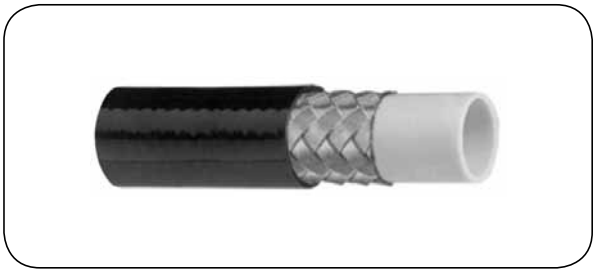
SM 040 / SM 240

Internal layer: Polyamide 11-12
Reinforcement: One steel wire braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C (for water and air up to +65°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol, gases, air and water-based fluids.
Assembly: Use Z type fittings (IT-67).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-SM040B-05	5	9.3	287	1150	20	10.70
MC-SM040C-06*	6.6	12	275	1100	35	16.80
MC-SM040D-08*	8	13.5	215	860	40	18.40
MC-SM040E-10*	9.9	15.5	215	860	60	24.90
MC-SM040F-13*	13	19.5	180	720	70	29.60
MC-SM040G-16	16.4	22	145	580	110	37.80
MC-SM040H-19	19.5	26.5	120	480	150	44.80
MC-SM040I-26	26	34.2	97	390	170	53.70

* - a twin version available, code example: MC-SM240C-06.



MT 1 / MTB 1

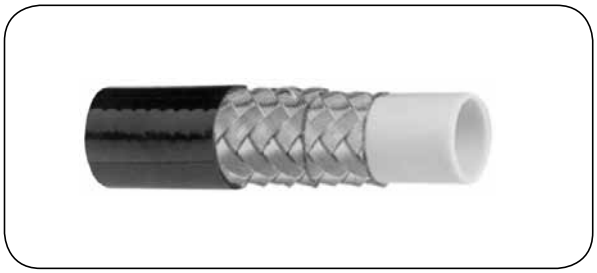
Internal layer: Polyamide
Reinforcement: One steel wire braid
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Assembly: Use Z type fittings (IT-66).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-MT1-03	3.5	7.5	375	1500	30	7.60
ZC-MT1-05*	4.8	10	350	1400	30	13.10
ZC-MT1-06*	6.4	11.9	300	1200	40	16.50
ZC-MT1-08*	8	14	240	960	50	20.50
ZC-MT1-10*	9.7	16	225	900	60	25.30
ZC-MT1-13*	13	19.2	190	760	75	31.40
ZC-MT1-16	16.3	23.3	150	600	110	40.60
ZC-MT1-19	19.2	25.5	130	520	150	44.70
ZC-MT1-25	25.6	32.5	105	420	185	59.00

* - a twin version available, code example: ZC-MTB1-06.

Thermoplastic hoses - polyamide



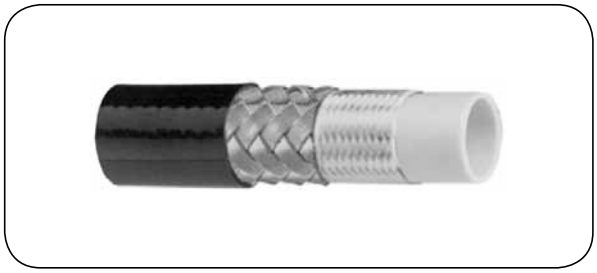
MT 2 / MTB 2

Internal layer: Polyamide
Reinforcement: Two steel wire braids
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Assembly: Use Z type fittings (IT-68).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-MT2-06*	6.4	13.5	400	1600	40	28.60
ZC-MT2-08*	8	15.1	350	1400	50	34.00
ZC-MT2-10*	9.7	17	330	1320	60	40.80
ZC-MT2-13*	13	22	275	1100	75	58.20
ZC-MT2-16	16.3	24.5	250	1000	110	63.90
ZC-MT2-19	19.2	27.5	215	860	150	76.50
ZC-MT2-25	25.6	35	165	660	185	102.60

* - a twin version available, code example: ZC-MTB2-06.



SK 0100 / SK 2100

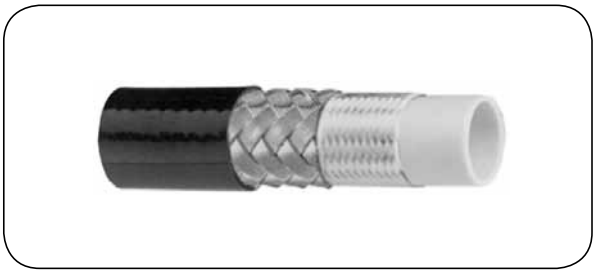
Internal layer: Polyamide 11-12
Reinforcement: One aramid fibre braid + one steel wire braid
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +93°C

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol, gases, air and water-based fluids.
Assembly: Use Z type fittings (IT-70).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
MC-SK0100B-05	5	11.2	500	2000	30	14.20
MC-SK0100C-06*	6.6	13.2	500	2000	40	19.20
MC-SK0100D-08*	8	15.2	450	1800	50	22.50
MC-SK0100E-10*	9.8	18.5	425	1700	80	34.50
MC-SK0100F-13*	13	21.5	350	1400	90	37.80
MC-SK0100G-16*	16.4	24.5	225	900	100	45.90
MC-SK0100H-19*	19.5	28	200	800	130	50.50
MC-SK0100I-26*	26	35	175	700	150	64.60

* - a twin version available, code example: ZC-MTKB-06.

Thermoplastic hoses - polyamide



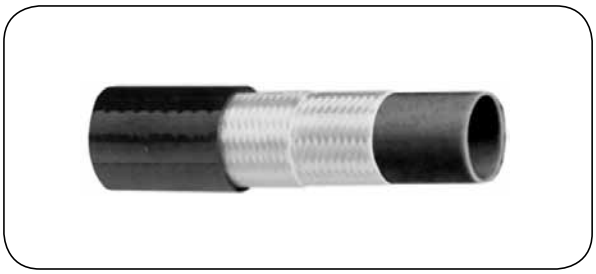
MTK / MTKB

Internal layer: Polyamide
Reinforcement: One aramid fibre braid + one steel wire braid
External layer: Polyurethane
Working temp.: From -40°C up to +100°C (for water and air up to +70°C)

Characteristics: Lightweight, flexible hose designed for solvents, paints, isocyanate, polyol and water-based fluids. A pinpricked version is available on request (for gas and air).
Assembly: Use Z type fittings (IT-69).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-MTK-05*	4.8	11.3	500	2000	30	16.70
ZC-MTK-08*	8	16	500	2000	50	29.20
ZC-MTK-10*	9.5	18	425	1700	60	34.00
ZC-MTK-13*	13	22	375	1500	75	44.80
ZC-MTK-16	16	25	250	1000	110	51.00
ZC-MTK-19	19.2	28.2	225	900	150	60.00
ZC-MTK-25	25.8	35.4	200	800	250	81.00

* - a twin version available, code example: ZC-MTKB-06.



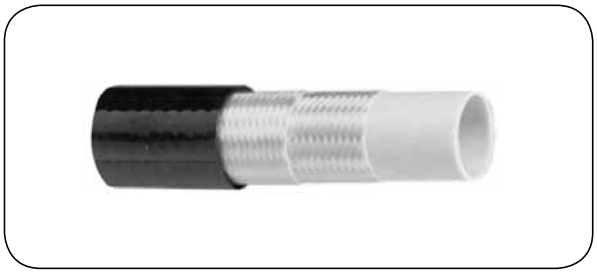
CNG

Internal layer: Black, conductive polyamide
Reinforcement: Two aramid fibre braids
External layer: Red pinpricked polyurethane
Working temp.: From -40°C up to +82°C

Characteristics: Lightweight, flexible, antistatic (R < $1.2x10^5$ Ω/m) hose designed to transfer natural gas (CNG - Compressed Natural Gas). Used for filling the tanks of CNG vehicles.
Standards: ISO 8031, ISO 15500-17, SAE 100R8.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
ZC-CNG-06	6.4	12.5	345	1380	45	10.50
ZC-CNG-08	8	15	345	1380	60	14.20
ZC-CNG-10	9.7	16.5	345	1380	75	15.50
ZC-CNG-13	13	22	345	1380	95	24.50
ZC-CNG-19	19.2	29	345	1380	185	36.00
ZC-CNG-25	25.6	38	345	1380	230	51.00

Thermoplastic hoses - polyamide



LPG

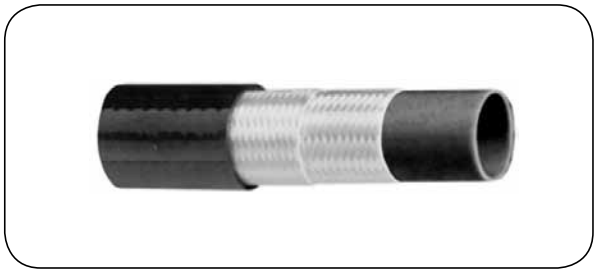
Internal layer: Polyamide
Reinforcement: Polyester braid
External layer: Pinpricked polyurethane
Working temp.: From -25°C up to +125°C

Characteristics: Lightweight, flexible hose designed for low pressure industrial installations. Recommended for autogas (LPG - Liquefied Petroleum Gas) in particular. When used in a car LPG system, connects LPG fuel tank with other parts of the system. In order to maintain LPG vehicle approval, special threaded fittings made of brass should be used.
Standards: ECE R67-01.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
LE-LPG-05L	4.8	8.8	30	200	25	5.00
LE-LPG-05F	5.0	9.6	30	200	25	5.90
LE-LPG-06L	6.5	11.4	30	200	35	8.50
LE-LPG-06F	6.5	12.2	30	200	35	9.50

LPG hose fittings

pipe O.D.	hose I.D. [inch]		
		pipe fitting (straight)	pipe fitting (90° elbow)
6	3/16”	LE-LPG-S-06	LE-LPG-S90-06
8	1/4"	LE-LPG-S-08	LE-LPG-S90-08



15R CNG

Internal layer: Conductive polyamide
Reinforcement: One or two aramid fibre braids + one synthetic fibre braid
External layer: Red pinpricked polyurethane
Working temp.: From -40°C up to +70°C

Characteristics: Lightweight, flexible hose intended for natural gas (CNG - Compressed Natural Gas). Used for filling the tanks of CNG vehicles. A twin version with a venting tube is available.
Assembly: Use P type fittings (IT-98).

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
TO-15RCNG-06	6.5	13.7	350	1400	50	12.00
TO-15RCNG-10	9.7	18.9	350	1400	70	22.00
TO-15RCNG-13	13	22.9	350	1400	90	29.00
TO-15RCNG-19	19.5	29.6	350	1400	180	40.00
TO-15RCNG-25	25.9	39	350	1400	200	71.50

Thermoplastic hoses EATON SYNFLEX®

EATON SYNFLEX® thermoplastic hoses are reliable and extremely durable for long service life. They are suitable for special and highly demanding applications. The hoses are lightweight and available in long continuous lengths, which is only a few among numerous other advantages of the hoses.

3130

Internal layer: Polyamide
Reinforcement: Polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +100°C
From -40°C up to +66°C (water-based fluids, non-flammable and fire resistant oils)

Characteristics: Lightweight, flexible hose designed for isocyanate, polyol, solvents and paints, gases and air, hydraulic installations.
Standards: SAE 100R7.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
SY-3130-03	3.2	8.5	172	689	13	4.00
SY-3130-05	4.8	10.8	207	827	19	7.00
SY-3130-06	6.4	13	207	759	32	9.00
SY-3130-08	7.9	15.1	172	689	44	12.00
SY-3130-10	9.5	17	155	620	51	12.00
SY-3130-13	12.7	20.7	138	620	76	16.00
SY-3130-19	19.1	27.1	86	345	127	27.00
SY-3130-25	25.4	34	69	276	203	46.00

37AL

Internal layer: Polyester
Reinforcement: Polyester braids
External layer: Non-stick orange polyurethane
Working temp.: From -54°C up to +100°C
From -40°C up to +60°C (water-based fluids, non-flammable and fire resistant oils)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels and water-based fluids. Can be used near electrical transformers, medium and high voltage installations. Non-conductive - a leakage current in test conditions according to the standard, less than 50 μA at 246 kV/m voltage for 5 min.
Standards: SAE 100R7, ANSI A92.2.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
SY-37AL-05	4.8	10.8	207	827	19	7.00
SY-37AL-06	6.4	12.3	190	759	32	9.00
SY-37AL-08	7.9	14.7	172	689	44	11.00
SY-37AL-10	9.5	16.1	155	620	51	14.00
SY-37AL-13	12.7	20.7	155	620	76	21.00

Thermoplastic hoses EATON SYNFLEX®

3R80

Internal layer: Polyamide
Reinforcement: Polyester braids
External layer: Pinpricked polyurethane
Working temp.: From -40°C up to +100°C
From -40°C up to +66°C (water-based fluids, non-flammable and fire resistant oils)

Characteristics: Lightweight, flexible hose designed for isocyanate, polyol, solvents and paints, gases and water, hydraulic installations.
Standards: SAE 100R8.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
SY-3R80-05	4.8	13.1	350	1400	38	11.00
SY-3R80-06	6.4	15.9	350	1400	51	18.00
SY-3R80-10	9.5	19.4	280	1120	64	22.00
SY-3R80-13	12.7	22.7	245	980	102	28.00
SY-3R80-19	19.1	28.9	157	628	165	38.00
SY-3R80-25	25.4	37.3	140	560	254	57.00

3E80

Internal layer: Polyester
Reinforcement: Polyester braids
External layer: Orange polyurethane
Working temp.: From -40°C up to +100°C
From -40°C up to +66°C (water-based fluids, non-flammable and fire resistant oils)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, fuels and water-based fluids. Can be used near electrical transformers, medium and high voltage installations. Non-conductive - a leakage current in test conditions according to the standard, less than 50 µA at 246 kV/m voltage for 5 min.
Standards: SAE 100R8.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
SY-3E80-05	4.8	13.1	350	1400	38	11.00
SY-3E80-06	6.4	15.9	350	1400	51	18.00
SY-3E80-10	9.5	19.4	280	1120	64	22.00
SY-3E80-13	12.7	22.7	245	980	102	28.00
SY-3E80-19	19.1	28.9	157	628	165	38.00
SY-3E80-25	25.4	37.3	140	560	254	57.00

Thermoplastic hoses EATON SYNFLEX®

30CT

Internal layer: Poliester
Reinforcement: Polyester braids
External layer: Non-stick pinpricked polyester
Working temp.: From -54°C up to +94°C
From -54°C up to +66°C (water-based fluids, non-flammable and fire resistant oils)

Characteristics: Lightweight, flexible hose designed for hydraulic oil installations, gases, air, fuel and water-based fluids. Resistant to very low temperatures.
Standards: SAE 100R18.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
SY-30CT-05	4.8	10.7	210	840	25.4	8.00
SY-30CT-06	6.4	12.1	210	840	31.8	9.00
SY-30CT-08	7.9	15.5	210	840	38.1	15.00
SY-30CT-10	9.5	16.8	210	840	50.8	18.00
SY-30CT-13	12.7	21.6	210	840	88.9	25.00
SY-30CT-16	16	27.0	210	840	101.6	41.00

3395

Internal layer: Polyamide 11
Reinforcement: Aramid braids
External layer: Polyurethane, highly resistant to UV radiation
Working temp.: From -40°C up to +72°C

Characteristics: Hose designed specifically for subsea operation. Intended for hydraulic oil installations, gases, air, fuel and water-based fluids. Resistant to hydrolysis. The hose must be used for hydraulic powered tools.
Standards: API 17E.
Assembly: Contact Technical Department of TUBES INTERNATIONAL®.

code	I.D. [mm]	O.D. [mm]	working pressure [bar]	bursting pressure [bar]	bending radius [mm]	weight [kg/100 m]
SY-3395-06	6.4	12.3	345	1380	102	11.70
SY-3395-10	9.5	16.8	345	1380	127	15.50
SY-3395-13	12.7	20.6	345	1380	178	19.50
SY-3395-16	15.9	25.5	345	1380	229	33.00
SY-3395-19	19.1	29.3	345	1380	254	40.60
SY-3395-25	25.4	37.8	345	1380	356	58.80
SY-3395-51	51	71	345	1035	635	200.00