

# **ContiTech Oil & Marine** High Performance Flexible Hoses





## Introduction High Performance Flexible Hoses

ContiTech Oil & Marine, part of Continental AG, is a global leader in the design, manufacture and supply of flexible hoses. With products in operation at installations throughout the world, we pride ourselves on Salamander being experts in specialist hoses and fluid transfer systems for the oil and gas exploration and production industries.

We aim to provide you with a total solution Compressed Air for your flexible hose requirements, and can assist with all elements of your project Saturated Steam - from the feasibility stage, through to design, engineering and manufacture, as well as project management, installation, training and after-care too. So whatever your project requirements, we will provide you with a completely bespoke service.





### Thermoplastic Hydraulic Single Wire Braid Double Wire Braid Four Spiral Wire Hydraulic Four or Six Spiral Wire Hydraulic Hydraulic Slim Line Rotary Hydraulic

Fireshield

Fuel & Oil Suction & Delivery Blow out Preventor Control Fire Resistant Firewater Deluge

**Contents** 

Hose & Couplings

Concrete Pumping

Bulk Material

Fuel and Oil

Liquid Mud Potable Water

Potable Water

Multipurpose

Nitrogen

Water

Summary Fuel and Oil Dock Loading Chemical Suction

Liguid Mud

Bulk Material

## Couplings

Summary Hose Couplings

<mark>4</mark> 5 6	High Pressure Hoses Summary Mud and Cement Hoses	<mark>40</mark> 41 42
8 9	Rotary & Vibrator with built-in couplings with swaged couplings	43 44
10	Cementing	45
11	Underbalanced Drilling	46
13	Choke & Kill Selection Guide	47 48
14	rough bore Production	49
15	Extreme gas & liquid service	50
16	Rough Bore gas & liquid service	51
17	Flexible Lines Customised Solutions	52 53
18	Well-test Flexible Riser Tensioner Lines	54 55
20	Preformed Bonded Flexible Hoses	56
21	High Pressure Couplings	58
21	Basic Coupling Selection	58
22	Technical	60
23	Hose Management Hose Handling	61 62
24	Solvent Information Chemical Resistance	65 66
24	Conversion Charts	68
24 25	Quality	70

26 27 28

## **Low Pressure Hoses** Summary

Pressure Range		Size Range			
WP (psi)	WP (bar)	ID (in)	ID (mm)	Model	Application
150	10	2-12	51-305	DO10*	Oil/Fuel
300	20	3∕8-12	10-305	DO20*	
217	15	3-12	75-300	DL15*	
232	16	1-4	25-102	UP16	
1,232	85	2-5	51-127	CP85	Bulk Materials
600	40	3-5	76-127	LM40*	
150	10	4-10	102-254	BM10*	
300	20	4-5	102-127	BM20*	
300	20	4-5	102-127	BM20HFL	Floating Hose
300	20	4-5	102-127	DO20HFL	
600	40	4	102	LM40HFL	
300	20	3-5	76-127	PW20HFL	
300	20	3/8-2	10-51	AT20	Air/Water
600	40	11/2-4	38-102	AW40	
300	20	1/2-8	13-203	PW20*	
255	17	1/2-2	13-51	HW17S	
300	20	1/2-2	13-51	NG20	Utility
300	20	1/2-2	13-51	MP20	
300	20	1/2-2	13-51	UW20	
5,000-2,000	345-138	<sup>3</sup> / <sub>16</sub> -1	5-25	BT9	Thermoplastic
10,000-6,000	689-414	3/16-1/2	5-13	BT10	
5,000-2,000	345-140	³∕16−1	5-25	BT13	
3,000-1,000	207-70	1/8-1	3-25	BT20	
3,600-580	250-40	3/16-2	4.8-51	1SN	Hydraulic
6,000-1,150	415-80	<sup>3</sup> /16-2	4.8-51	2SN	
6,450-2,360	445-165	3/8-2	10-51	4SP	
6,090-3,625	420-250	3/4-2	19-51	4SH	
11,250-5,000	776-345	1/4-2	6.4-51	R13	
5,000	345	3/4-2	19-51	BX20	
3,000	207	21/2-3	63-76	Slim Line Rotary	
232	16	1-8	25-203	DO16HFR	Fire Rated
5,000	350	1/4-2	6.3-51	FS5000	_
300	21	2-8	51-203	FW300	

# Hose & Couplings Low Pressure Hoses

ContiTech Oil & Marine manufactures an extensive range of industrial and hydraulic hose assemblies for applications within the oil and gas exploration and production industries. Our comprehensive range comprises hoses in rubber, thermoplastic and flexible metallic construction, as well as offering custom designed hoses built to individual requirements.

Our industrial range includes hoses for water, nitrogen, diesel, steam and chemicals, and our hydraulic range comes in sizes from  $\frac{1}{8}$ " to 3" ID with all hoses manufactured to the latest SAE, DIN and EN specifications.

As well as our comprehensive range of hoses, we also manufacture hoses for more specialist applications, including the Salamander floating industrial hoses and Fireshield fire rated hoses for use in the safety critical BOP application.

\*available in both Softwall (Delivery) and Hardwall (Suction and Delivery) construction; overall range shown, sizes may vary for each construction type

## **Fuel and Oil Delivery Hose** DO20S

## Construction

Tube	Black NBR
Reinforcement	High tensile textile cords plus antistatic wire
Cover	Black CR/BR blend; abrasion, ozone and hydro
Temperature Range	-25 °C to +100 °C

## Typical Application

Fuel oil delivery, with up to 50% aromatic content, suitable for seawater, mud and general offshore applications

## Technical Data

Insi	ide Diameter	Outsi	Outside Diameter		ing Pressure	Min Bu	Irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
10	3/8	19	0.7	20	300	80	1,200	78	3.1	0.35	0.23
13	1/2	23	0.9	20	300	80	1,200	78	3.1	0.36	0.24
19	3/4	30	1.2	20	300	80	1,200	114	4.5	0.56	0.38
25	1	37	1.5	20	300	80	1,200	150	5.9	0.74	0.50
38	11/2	54	2.1	20	300	80	1,200	228	9.0	1.52	1.02
51	2	68	2.7	20	300	80	1,200	306	12.0	2.18	1.46
76	3	96	3.8	20	300	80	1,200	456	18.0	3.61	2.42
102	4	124	4.9	20	300	80	1,200	612	24.1	5.10	3.42
127	5	151	5.9	20	300	80	1,200	762	30.0	6.67	4.47
152	6	178	7.0	20	300	80	1,200	912	35.9	8.50	5.70

## **Fuel and Oil Suction and Delivery Hose** DO20H

### Construction

Tube	Black NBR
Reinforcement	High tensile textile cords with embedded stee antistatic wire
Cover	Black CR/BR blend; abrasion, ozone and hydr
Temperature Range	-25 °C to +100 °C

### Typical Application

Fuel oil suction and delivery, with up to 50% aromatic content, suitable for seawater, mud and general offshore applications

### Technical Data

Weight		d Radius	Min Bend Radiu		Min Burst Pressure		Working I	Diameter	Outside D	Inside Diameter Outs	
lb/ft	kg/m	in	mm	psi	bar	psi	bar	in	mm	in	mm
1.84	2.75	12.0	305	1,200	80	300	20	2.8	70	2	51
3.02	4.50	15.0	380	1,200	80	300	20	3.9	99	3	76
4.44	6.63	20.1	510	1,200	80	300	20	5.0	127	4	102
5.76	8.60	25.0	635	1,200	80	300	20	6.1	155	5	127
7.60	11.34	29.9	760	1,200	80	300	20	7.2	182	6	152
12.46	18.60	40.0	1,015	1,200	80	300	20	9.4	240	8	203
17.49	26.10	50.0	1,270	1,200	80	300	20	11.5	293	10	254
25.46	38.00	66.9	1,700	900	60	225	15	13.7	347	12	305

## **Fuel and Oil Delivery Hose** DO105

### Construction

Tube	Black NBR
Reinforcement	High tensile textile cords plus antistatic wire
Cover	Black CR/BR blend; abrasion, ozone and hydrocarbon resistant
Temperature Range	-25 °C to +100 °C

## Typical Application

Fuel oil delivery, with up to 50% aromatic content, suitable for seawater, mud and general offshore applications

## Technical Data

Insi	ide Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	urst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
51	2	67	2.64	10	150	40	600	306	12.0	1.80	1.21
76	3	92	3.62	10	150	40	600	456	18.0	2.60	1.74
102	4	119	4.69	10	150	40	600	612	24.1	4.11	2.75
127	5	145	5.71	10	150	40	600	762	30.0	5.17	3.46
152	6	172	6.77	10	150	40	600	912	35.9	6.77	4.54
203	8	225	8.86	10	150	40	600	1,260	49.6	10.00	6.70

## **Fuel and Oil Suction and Delivery Hose** DO10H

### Construction

Tube	Black NBR
Reinforcement	High tensile textile cords with embedded steel helix wire and antistatic wire
Cover	Black CR/BR blend; abrasion, ozone and hydrocarbon resistant

**Temperature Range** -25 °C to +100 °C

## Typical Application

Fuel oil suction and delivery, with up to 50% aromatic content, suitable for seawater, mud and general offshore applications, long lasting in heavy duty applications

### Technical Data

Insi	de Diameter	Outsi	Outside Diameter		ing Pressure	Min Bu	rst Pressure	Min	Min Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
51	2	66	2.6	10	150	40	600	255	10.0	2.02	1.35
76	3	92	3.6	10	150	40	600	380	15.0	3.26	2.18
102	4	120	4.7	10	150	40	600	510	20.1	4.57	3.06
127	5	150	5.9	10	150	40	600	635	25.0	7.12	4.77
152	6	175	6.9	10	150	40	600	760	29.9	9.20	6.16
202	8	234	9.2	10	150	40	600	1,010	39.8	15.29	10.24
254	10	288	11.3	10	150	40	600	1,260	49.6	19.30	12.93
305	12	343	13.5	10	150	40	600	1,525	60.0	26.36	17.66





ocarbon resistant



el helix wire and

rocarbon resistant

## **Dock Loading, Ship to Shore Hose to BS EN 1765:2004 L15** DL15S

### Construction

Construction	
Tube	Black Nitrile (NBR) Rubber
Reinforcement	Multiple Layers of High tensile textile cords
Cover	Black Chloroprene (CR); abrasion and ozone resistant
Fittings	Supplied with built in steel nipples and flanges
Hose Assemblies	Electrically Continuous or discontinuous as required. Manufactured in accordance with USCG 154.500 Equipment Requirements
Tomporaturo Dango	25 °C to 192°C

**Temperature Range** -25 °C to +82 °C

### Typical Application

Dock Loading and Ship to Shore Applications handling Petroleum or Crude Oil to a maximum 50% aromatic content

### Technical Data

Ins	ide Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
75	3	93	3.7	15	217	60	870	450	17.7	2.80	1.88
100	4	120	4.7	15	217	60	870	600	23.6	4.00	2.68
125	5	147	5.8	15	217	60	870	700	27.6	6.40	4.29
150	6	174	6.9	15	217	60	870	900	35.4	7.00	4.69
200	8	187	7.4	15	217	60	870	1,000	39.4	12.00	8.04
250	10	280	11.0	15	217	60	870	1,500	59.1	15.10	10.12
300	12	350	13.8	15	217	60	870	1,900	74.8	39.00	26.13

## **Dock Loading, Ship to Shore Hose to BS EN 1765:2004 S15** DL15H

### Construction

Tube	Black Nitrile (NBR) Rubber	Onthe					
Reinforcement	Multiple Layers of High tensile textile cords with fully embedded steel wire helix						
Cover	Black Chloroprene (CR); abrasion and ozone resistant						
Fittings	Supplied with built in steel nipples and flanges						
Hose Assemblies	Electrically Continuous or discontinuous as required. Manufactured in accordance with USCG 154.500 Equipment Requirements						

**Temperature Range** -25 °C to +82 °C

### Typical Application

Dock Loading and Ship to Shore Applications handling Petroleum or Crude Oil to a maximum 50% aromatic content

### Technical Data

Insi	de Diameter	Outside Diameter Workin		ing Pressure	ng Pressure Min Burst Pressure			Bend Radius	Weight		
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
75	3	103	4.1	15	217	60	870	450	17.7	5.10	3.42
100	4	129	5.1	15	217	60	870	600	23.6	6.80	4.56
125	5	156	6.1	15	217	60	870	700	27.6	9.10	6.10
150	6	182	7.2	15	217	60	870	850	33.5	11.90	7.97
200	8	235	9.3	15	217	60	870	1,100	43.3	16.90	11.32
250	10	291	11.5	15	217	60	870	1,350	53.1	27.80	18.63
300	12	346	13.6	15	217	60	870	1,600	63.0	34.00	22.78

## **Chemical Suction and Delivery Hose** UP16H

### Construction

Tube	Transparent UHMWPE (Ultra High Molecule V Polyethylene)
Reinforcement	High tensile textile cords with embedded heli
Cover	Blue EPDM; abrasion and ozone resistant
Temperature Range	-40 °C to +80 °C

### Typical Application

Acid and chemical suction and delivery suitable for 98% of existing chemicals

## Technical Data

Ins	ide Diameter	Outs	ide Diameter	Work	king Pressure	Min B	urst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
25	1	37	1.5	16	232	64	928	150	5.9	0.76	0.51
38	11/2	51	2.0	16	232	64	928	225	8.9	1.35	0.90
51	2	65	2.6	16	232	64	928	275	10.8	1.91	1.28
76	3	92	3.6	16	232	64	928	380	15.0	3.19	2.14
102	4	124	4.9	16	232	64	928	510	20.1	5.78	3.87

## **Concrete Pumping** CP85S

### Construction

Tube	Black conductive NR, abrasion resistant				
Reinforcement	High tensile steel cords				
Cover	Black conductive SBR/NR blend; abrasion an				
Temperature Range -35 °C to +85 °C					

### Typical Application

High pressure concrete placement

### Technical Data

Insid	le Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	ırst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
51	2	68	2.7	85	1,232	200	2,900	508	20.0	3.41	2.28
76	3	101	4.0	85	1,232	200	2,900	762	30.0	6.58	4.41
102	4	129	5.1	85	1,232	200	2,900	1,016	40.0	9.37	6.28
127	5	156	6.1	85	1,232	200	2,900	1,290	50.8	10.95	7.34
	Insid mm 51 76 102 127	Inside Diameter           mm         in           51         2           76         3           102         4           127         5	Inside Diameter         Outsi           mm         in         mm           51         2         68           76         3         101           102         4         129           127         5         156	Inside Diameter         Outside Diameter           mm         in         mm         in           51         2         68         2.7           76         3         101         4.0           102         4         129         5.1           127         5         156         6.1	Inside Diameter         Outside Diameter         Work           mm         in         mm         in         bar           51         2         68         2.7         85           76         3         101         4.0         85           102         4         129         5.1         85           127         5         156         6.1         85	Inside Diameter         Outside Diameter         Working Pressure           mm         in         mm         in         bar         psi           51         2         68         2.7         85         1.232           76         3         101         4.0         85         1.232           102         4         129         5.1         85         1.232           127         5         156         6.1         85         1.232	Inside Diameter         Outside Diameter         Working Pressure         Min Bu           mm         in         mm         in         bar         psi         bar           51         2         68         2.7         85         1.232         200           76         3         101         4.0         85         1.232         200           102         4         129         5.1         85         1.232         200           127         5         156         6.1         85         1.232         200	Inside Diameter         Outside Diameter         Working Pressure         Min Burst Pressure           mm         in         mm         in         bar         psi         bar         psi           51         2         68         2.7         85         1.232         200         2.900           76         3         101         4.0         85         1.232         200         2.900           102         4         129         5.1         85         1.232         200         2.900           127         5         156         6.1         85         1.232         200         2.900	Inside Diameter         Outside Diameter         Working Pressure         Min Burst Pressure         Min           mm         in         mm         in         bar         psi         bar         psi         mm           51         2         68         2.7         85         1.232         200         2.900         508           76         3         101         4.0         85         1.232         200         2.900         762           102         4         129         5.1         85         1.232         200         2.900         1.016           127         5         156         6.1         85         1.232         200         2.900         1.290	Inside Diameter         Outside Diameter         Working Pressure         Min Burst Pressure         Min Bend Radius           mm         in         mm         in         bar         psi         bar         psi         mm         in           51         2         68         2.7         85         1.232         200         2.900         508         20.0           76         3         101         4.0         85         1.232         200         2.900         762         30.0           102         4         129         5.1         85         1.232         200         2.900         1.016         40.0           127         5         156         6.1         85         1.232         200         2.900         1.290         50.8	Inside Diameter         Outside Diameter         Working Pressure         Min Burst Pressure         Min Bend Radius           mm         in         mm         in         bar         psi         bar         psi         mm         in         kg/m           51         2         68         2.7         85         1.232         200         2.900         508         20.0         3.41           76         3         101         4.0         85         1.232         200         2.900         762         30.0         6.58           102         4         129         5.1         85         1.232         200         2.900         1.016         40.0         9.37           127         5         156         6.1         85         1.232         200         2.900         1.205         50.8         10.95

8

Neight

ix wire





nd ozone resistant

LM40S

Tube

Cover

Construction

Reinforcement

**Liquid Mud Delivery Hose** 

Black NBR

Temperature Range -25 °C to +100 °C

Typical Application

Inside Diameter

in

50% aromatic content

mm

102

High tensile textile cords, plus antistatic wire

Black CR/BR blend; abrasion, ozone and hydrocarbon resistant

Liquid mud containing crude oil and grit delivery in offshore applications; also suitable for fuel delivery with up to

**Working Pressure** 

psi

600

600

bar

40

40

**Min Burst Pressure** 

psi

2,400

2,400

bar

160

160

Weight

lb/ft

2.91

3.87

kg/m

4.34

5.78

## Bulk Material Delivery Hose BM10S

## Construction

Tube	Black SBR/NR blend; abrasion resistant
Reinforcement	High tensile textile cords
Cover	Black IR/BR blend; abrasion and ozone resista
Temperature Range	-35 °C to +85 °C

## Typical Application

Bulk material delivery; specially designed for heavy duty barite and cement delivery to offshore platforms

## Technical Data

 Insid	le Diameter	Outsi	de Diameter	Worki	ing Pressure	Min Bu	ırst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
 102	4	124	4.9	10	150	40	600	612	24.1	4.70	3.15
127	5	149	5.9	10	150	40	600	762	30.0	6.21	4.16

# Liquid Mud Suction and Delivery Hose

**Outside Diameter** 

mm

102

128

LM40H

## Construction

TubeBlack NBRReinforcementHigh tensile textile cords with embedded steel helix wire and<br/>antistatic wireCoverBlack CR/BR blend; abrasion, ozone and hydrocarbon resistantTemperature Range-25 °C to +100 °C



**Min Bend Radius** 

in

18.0

24.1

mm

456

612

## Typical Application

Liquid mud containing crude oil and grit delivery in offshore applications; also suitable for fuel delivery with up to 50% aromatic content

## Technical Data

e Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	ırst Pressure	Min	Bend Radius		Weight
in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
3	102	4.0	40	600	160	2,400	456	18.0	5.54	3.71
4	129	5.1	40	600	160	2,400	612	24.1	7.46	5.00
5	169	6.7	40	600	160	2,400	762	30.0	13.80	9.25
e	Diameter in 3 4 5	Diameter         Outsi           in         mm           3         102           4         129           5         169	Diameter         Outside Diameter           in         mm         in           3         102         4.0           4         129         5.1           5         169         6.7	Diameter         Outside Diameter         Work           in         mm         in         bar           3         102         4.0         40           4         129         5.1         40           5         169         6.7         40	Diameter         Outside Diameter         Working Pressure           in         mm         in         bar         psi           3         102         4.0         40         600           4         129         5.1         40         600           5         169         6.7         40         600	Diameter         Outside Diameter         Working Pressure         Min Bu           in         mm         in         bar         psi         bar           3         102         4.0         40         600         160           4         129         5.1         40         600         160           5         169         6.7         40         600         160	Diameter         Outside Diameter         Working Pressure         Min Burst Pressure           in         mm         in         bar         psi         bar         psi           3         102         4.0         40         600         160         2,400           4         129         5.1         40         600         160         2,400           5         169         6.7         40         600         160         2,400	Diameter         Outside Diameter         Working Pressure         Min Burst Pressure         Min           in         mm         in         bar         psi         bar         psi         mm           3         102         4.0         40         600         160         2.400         456           4         129         5.1         40         600         160         2.400         612           5         169         6.7         40         600         160         2.400         762	Diameter         Outside Diameter         Working Pressure         Min Burst Pressure         Min Bend Radius           in         mm         in         bar         psi         psi         mm         in           3         102         4.0         40         600         160         2.400         456         18.0           4         129         5.1         40         600         160         2.400         612         24.1           5         169         6.7         40         600         160         2.400         762         30.0	Diameter         Outside Diameter         Working Pressure         Min Burst Pressure         Min Bend Radius           in         mm         in         bar         psi         psi         mm         in         kg/m           3         102         4.0         40         600         160         2,400         456         18.0         5.54           4         129         5.1         40         600         160         2,400         612         24.1         7.46           5         169         6.7         40         600         160         2,400         762         30.0         13.80

## **Bulk Material Suction and Delivery Hose** BM10H

### Construction

ſube	Black SBR/NR blend; abrasion resistant
Reinforcement	High tensile textile cords with embedded ste
Cover	Black IR/BR blend; abrasion and ozone resist
Temperature Range	-35 °C to +85 °C

### Typical Application

Bulk material delivery; specially designed for heavy duty barite and cement delivery to offshore platforms

## Technical Data

Insi	de Diameter	Outsi	Outside Diameter		Working Pressure Min Burst Pressure		Min	Bend Radius	Weight		
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
102	4	127	5.0	10	150	40	600	612	24.1	6.60	4.42
127	5	149	5.9	10	150	40	600	762	30.0	7.10	4.76
152	6	180	7.1	10	150	40	600	912	35.9	9.60	6.43
254	10	291	11.5	10	150	40	600	1,524	60.0	26.20	17.55



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## Salamander Liquid Mud Suction and Delivery Floating Hose LM40HFL

## Construction

Tube	Black NBR
Reinforcement	High tensile textile cords with embedded stee antistatic wire
Intermediate Cover	Black CR/BR blend
Flotation Element	Multiple layers of floating PE foam
Cover	Black CR/BR blend; abrasion, ozone and hydro
Temperature Range	-25 °C to +100 °C

### Typical Application

Liquid mud containing crude oil and grit suction & delivery in offshore applications. Also suitable for fuel oil delivery, with up to 50% aromatic content. Suitable for media of up to specific gravity of 1.6 g/cm<sup>3</sup>. Minimum reserve buoyancy of 25% using GMPHOM standard calculations for all hose. Note: Finished hose dimensions may be subject to change depending on specific gravity of medium transported.

### Technical Data

Insi	de Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
102	4	210	8.3	40	600	160	2,400	700	27.6	13.50	9.05

## Salamander Fuel and Oil Suction and Delivery Floating Hose DO20HFL

### Construction

Tube	Black NBR
Reinforcement	High tensile textile cords with embedded stee antistatic wire
Intermediate Cover	Black CR/BR blend
Flotation Element	Multiple layers of floating PE foam
Cover	Black CR/BR blend; abrasion, ozone and hydr
Temperature Range	-25 °C to +100 °C

## Typical Application

Fuel oil delivery, with up to 50% aromatic content, suitable for seawater, mud and general offshore applications. Minimum reserve buoyancy of 25 % using GMPHOM standard calculations for all hose. Note: Finished hose dimensions may be subject to change depending on specific gravity of medium transported.

### Technical Data

Insid	de Diameter	Outside	Diameter	Working	Pressure	Min Burs	t Pressure	Min Ber	nd Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
102	4	178	7.0	20	300	80	1,200	550	21.7	10.80	7.24
127	5	206	8.1	20	300	80	1,200	700	27.6	13.60	9.11

## **Bulk Material Delivery Hose** BM20S

## Construction

Tube	Black SBR/NR blend; abrasion resistant
Reinforcement	High tensile textile cords
Cover	Black IR/BR blend; abrasion and ozone resistant
Temperature Range	-35 °C to +85 °C

## Typical Application

Bulk material delivery; specially designed for heavy duty barite and cement delivery to offshore platforms

## Technical Data

Insi	de Diameter	Outs	ide Diameter	Work	ing Pressure	Min Bu	urst Pressure	Min	Bend Radius	_	Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
102	4	127	5.0	20	300	80	1,200	612	24.1	5.10	3.42
127	5	152	6.0	20	300	80	1,200	762	30.0	6.39	4.28

# **Bulk Material Suction and Delivery Hose**

BM20H

### Construction

Tube	Black SBR/NR blend; abrasion resistant
Reinforcement	High tensile textile cords with embedded steel helix wire
Cover	Black IR/BR blend; abrasion and ozone resistant
Temperature Range	-35 °C to +85 °C

## Typical Application

Bulk material delivery; specially designed for heavy duty barite and cement delivery to offshore platforms

## Technical Data

Ins	ide Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	urst Pressure	Min	<b>Bend Radius</b>		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
102	4	127	5.0	20	300	80	1,200	612	24.1	6.10	4.09
127	5	155	6.1	20	300	80	1,200	762	30.0	8.63	5.78



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rocarbon resistant

## Salamander Bulk Material Suction and Delivery Floating Hose BM20HFL

## Construction

Tube	Black SBR/NR blend, abrasion resistant
Reinforcement	High tensile textile cords with embedded steel helix wire
Intermediate Cover	Black IR/BR blend
Flotation Element	Multiple layers of floating PE foam
Cover	Black CR/BR blend; abrasion, ozone and hydrocarbon resistant
Temperature Range	-35 °C to +85 °C



## Typical Application

Bulk material delivery; specially designed for heavy duty barite and cement delivery to offshore platforms. Suitable for media of up to specific gravity of 1.6 g/cm<sup>3</sup>. Minimum reserve buoyancy of 25 % using GMPHOM standard calculations for all hose. Note: Finished hose dimensions may be subject to change depending on specific gravity of medium transported.

### Technical Data

Inside Diameter Outside		de Diameter	Work	ing Pressure	Min Bı	ırst Pressure	Min	Bend Radius	Weight		
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
102	4	205	8.1	20	300	80	1,200	550	21.7	12.40	8.31
127	5	235	9.3	20	300	80	1,200	700	27.6	14.70	9.85

## Salamander Potable Water Suction and Delivery Floating Hose PW20HFL

## Construction

Tube	White UHMWPE (Ultra High Molecular Weight Polyethylene)	antinence
Reinforcement	High tensile textile cords with embedded steel helix wire and antistatic wire	
Intermediate Cover	Black CR/BR blend	
Flotation Element	Multiple layers of floating PE foam	
Cover	Orange CR/BR blend; abrasion, ozone and hydrocarbon resistant	
Temperature Range	-35 °C to +100 °C	

## Typical Application

Potable water transfer. Minimum reserve buoyancy of 25 % using GMPHOM standard calculations for all hose. Note: Finished hose dimensions may be subject to change depending on specific gravity of medium transported.

## Technical Data

Insi	de Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	urst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
76	3	148	5.8	20	300	80	1,200	450	17.7	7.70	5.16
102	4	175	6.9	20	300	80	1,200	550	21.7	10.80	7.24
127	5	203	8.0	20	300	80	1,200	700	27.6	13.60	9.11

#### www.contitech-online.com/oil-and-marine

## **Compressed Air Hose** AT20S

### Construction

Tube	Black NBR; oil mist resistant
Reinforcement	High tensile textile cords
Cover	Yellow CR/BR; abrasion and ozone resistant
Temperature Range	-35 °C to +85 °C

## Typical Application

Compressed air, designed for heavy duty applications

### Technical Data

Ins	Inside Diameter		Outside Diameter		Working Pressure		Min Burst Pressure		Min Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
10	3/8	19	0.7	20	300	60	900	60	2.4	0.23	0.15
13	1/2	23	0.9	20	300	60	900	78	3.1	0.39	0.26
19	3/4	30	1.2	20	300	60	900	114	4.5	0.60	0.40
25	1	37	1.5	20	300	60	900	150	5.9	0.79	0.53
38	11/2	52	2.0	20	300	60	900	228	9.0	1.36	0.91
51	2	67	2.6	20	300	60	900	306	12.0	2.00	1.34

## **Compressed Air Hose** AW40S

### Construction

Tube	Black NBR; oil mist resistant
Reinforcement	High tensile steel cords
Cover	Yellow CR/BR; abrasion and ozone resistant
Temperature Range	-35 °C to +85 °C

### **Typical Application**

Compressed air, designed for long lasting service and maximum safety in heavy duty applications

### Technical Data

Insi	ide Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
38	1½	52	2.0	40	600	160	2,400	190	7.5	1.65	1.11
51	2	65	2.6	40	600	160	2,400	255	10.0	2.19	1.47
76	3	95	3.7	40	600	160	2,400	380	15.0	4.20	2.81
102	4	121	4.8	40	600	160	2,400	510	20.1	5.80	3.89





## **Saturated Steam Hose** HW17S

### Construction

Tube	Black EPDM
Reinforcement	High tensile steel cords
Cover	Red EPDM; heat, abrasion and ozone resistant
Temperature Range	e -40 °C to +208 °C

## Typical Application

Saturated Steam

### Technical Data

Insi	Inside Diameter		Outside Diameter		Working Pressure		Min Burst Pressure		Min Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
13	1/2	25	1.0	17	250	170	2,500	130	5.1	0.55	0.37
19	3/4	33	1.3	17	250	170	2,500	190	7.5	0.83	0.56
25	1	40	1.6	17	250	170	2,500	250	9.8	1.02	0.68
38	11/2	54	2.1	17	250	170	2,500	380	15.0	1.78	1.19
51	2	69	2.7	17	250	170	2,500	510	20.1	2.67	1.79
76	3	96	3.8	17	250	170	2,500	760	29.9	4.35	2.91

## Nitrogen Hose NG20S

### Construction

Tube	Black EPDM
Reinforcement	High tensile textile cords
Cover	Black EPDM; abrasion and ozone resistant
Temperature Range	-40 °C to +100 °C

## Typical Application

Nitrogen

## Technical Data

Insi	de Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	Min Burst Pressure		Min Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
13	1/2	21	0.8	20	300	60	900	78	3.1	0.29	0.19
19	3/4	28	1.1	20	300	60	900	114	4.5	0.48	0.32
25	1	35	1.4	20	300	60	900	150	5.9	0.66	0.44
38	11/2	52	2.0	20	300	60	900	228	9.0	1.33	0.89
51	2	66	2.6	20	300	60	900	306	12.0	1.89	1.27

### Construction White NR Reinforcement High tensile textile cords

**Potable Water Delivery Hose** 

Cover

Tube

PW20S

Temperature Range -35 °C to +100 °C

## Typical Application

Potable water transfer

## Technical Data

Insi	Inside Diameter		Outside Diameter		Working Pressure		Min Burst Pressure		Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
13	1/2	23	0.9	20	300	80	1,200	78	3.1	0.38	0.25
19	3/4	31	1.2	20	300	80	1,200	115	4.5	0.62	0.42
25	1	37	1.5	20	300	80	1,200	150	5.9	0.77	0.52
38	11/2	50	2.0	20	300	80	1,200	228	9.0	1.11	0.74
51	2	68	2.7	20	300	80	1,200	306	12.0	1.90	1.27
76	3	97	3.8	20	300	80	1,200	608	23.9	3.03	2.03
102	4	124	4.9	20	300	80	1,200	806	31.7	4.45	2.98
127	5	148	5.8	20	300	80	1,200	1,010	39.8	5.95	3.99

## **Potable Water Suction and Delivery Hose** PW20H

### Construction

Tube	White NR
Reinforcement	High tensile textile cords with embedded steel helix wire
Cover	Orange NBR/PVC blend; abrasion, ozone and hydrocarbon resistant
Temperature Range	-35 °C to +100 °C

Typical Application

Potable water transfer

## Technical Data

Insi	Inside Diameter		Outside Diameter		Working Pressure		Min Burst Pressure		Min Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
51	2	70	2.8	20	300	80	1,200	305	12.0	2.70	1.81
76	3	99	3.9	20	300	80	1,200	380	15.0	4.90	3.28
102	4	127	5.0	20	300	80	1,200	510	20.1	6.86	4.60
127	5	155	6.1	20	300	80	1,200	635	25.0	11.00	7.37
152	6	182	7.2	20	300	80	1,200	760	29.9	15.40	10.32
203	8	236	9.3	15	225	60	900	1,015	40.0	20.00	13.40







## Thermoplastic Hose (SAE 100R8) BT9

### Construction

Tube	Polyelastomer / Nylon
Reinforcement	Aramid fibre braid/s
Cover	Black, chemical resistant polyurethane (pin prigas applications)
Temperature Range	-40 °C to +95 °C

### Typical Application

Suitable for many industrial gases, (eg. helium, air, heliox – max 25 % O<sub>2</sub>) and hydraulic oils

### Technical Data

Insie	de Diameter	Outside	Diameter	Working	g Pressure	Min Burs	st Pressure	Min Ben	d Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
5	3/16	10.4	0.41	345	5,000	1,379	20,000	50	2.0	0.07	0.05
6	1/4	12.7	0.50	345	5,000	1,379	20,000	50	2.0	0.09	0.06
8	5/16	15.0	0.59	293	4,250	1,172	17,000	63	2.5	0.11	0.07
10	3/8	16.3	0.64	276	4,000	1,103	16,000	63	2.5	0.13	0.09
12	1/2	20.0	0.79	241	3,500	965	14,000	100	3.9	0.19	0.13
16	5/8	23.1	0.91	190	2,750	758	11,000	203	8.0	0.23	0.15
20	3/4	27.9	1.10	155	2,250	620	9,000	254	10.0	0.26	0.17
25	1	35.8	1.41	138	2,000	552	8,000	305	12.0	0.36	0.24

## Thermoplastic Hose (SAE 100R11) BT10

Construction	
Tube	Nylon 11
Reinforcement	Two aramid fibre braids

Cover	Chemical resistant nylon 11 (pin pricked for g
Temperature Range	-40 °C to +100 °C

### Typical Application

Suitable for many industrial gases, (eg. helium, air, heliox - max 25 % O<sub>2</sub>) and hydraulic oils. Recommended for high pressure applications where low volumetric expansion and corrosion resistance is essential.

## Technical Data

Insi	de Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bi	urst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
5	3∕16	13.5	0.53	689	10,000	2,758	40,000	38	1.5	0.12	0.08
6	1/4	14.5	0.57	689	10,000	2,758	40,000	64	2.5	0.16	0.11
8	5/16	18.3	0.72	552	8,000	2,206	32,000	76	3.0	0.20	0.13
10	3/8	19.3	0.76	517	7,500	2,068	30,000	76	3.0	0.25	0.17
13	1/2	22.6	0.89	414	6,000	1,652	24,000	100	3.9	0.35	0.23

## **Multipurpose Hose** MP20S

### Construction

sistan

Temperature Range -40 °C to +100 °C

## Typical Application

Water, seawater, hot water and steam

## Technical Data

Insi	de Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	ırst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
13	1/2	21	0.8	20	300	60	900	78	3.1	0.29	0.19
19	3/4	28	1.1	20	300	60	900	114	4.5	0.47	0.31
25	1	35	1.4	20	300	60	900	150	5.9	0.66	0.44
38	11/2	52	2.0	20	300	60	900	228	9.0	1.34	0.90
51	2	70	2.8	20	300	60	900	306	12.0	1.87	1.25

## Water Hose

UW20S

## Construction

Tube	Black NBR
Reinforcement	High tensile textile cords
Cover	Black NBR; abrasion and ozone resistant
Temperature Range	-35 °C to +85 °C

### Typical Application

Water transfer, designed for heavy duty applications

## Technical Data

Ins	ide Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	urst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
13	1/2	23	0.9	20	300	60	900	78	3.1	0.39	0.26
19	3/4	30	1.2	20	300	60	900	114	4.5	0.61	0.41
25	1	37	1.5	20	300	60	900	150	5.9	0.79	0.53
51	2	67	2.6	20	300	60	900	306	12.0	2.09	1.40





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gas applications)

## **Thermoplastic Hose (Exceeds the requirements of SAE 100R8)** BT13

## Construction

Tube	Nylon
Reinforcement	Two polyester fibre braids
Cover	Polyurethane (pin pricked for gas applications)

Temperature Range -40 °C to +95 °C

## Typical Application

Multipurpose, including divers breathing, hot water and hydraulics, also suitable for many industrial gases, (eg. helium, air, heliox – max  $25 \% O_2$ ) and hydraulic oils. Recommended for applications where kink resistance is imperative and there is contact with seawater.

## Technical Data

Insi	de Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
5	3/16	10.5	0.41	345	5,000	1,370	20,000	50	2.0	0.09	0.06
6	1/4	15.9	0.63	345	5,000	1,370	20,000	50	2.0	0.18	0.12
8	5/16	16.7	0.66	290	4,250	1,170	17,000	64	2.5	0.20	0.13
10	3/8	19.3	0.76	270	4,000	1,100	16,000	64	2.5	0.23	0.15
13	1/2	22.6	0.89	240	3,500	960	14,000	100	3.9	0.30	0.20
16	5/8	25.9	1.02	190	2,750	750	11,000	150	5.9	0.41	0.27
20	3/4	28.9	1.14	150	2,250	620	9,000	200	7.9	0.44	0.29
25	1	37.1	1.46	140	2,000	550	8,000	250	9.8	0.53	0.36

## **Thermoplastic Hose (Exceeds the requirements of SAE 100R7)** BT20

## Construction

Tube	Seamless polyester elastomer
Reinforcement	Polyester fibre braid/s
Cover	Polyurethane (pin pricked for gas applications)
Temperature Range	-40 °C to +95 °C



## Typical Application

Suitable for many industrial gases, (eg. helium, air, heliox – max  $25 \% O_2$ ) and hydraulic oils. Recommended for high pressure applications where low volumetric expansion and corrosion resistance is essential.

## Technical Data

Insi	de Diameter	Outsi	ide Diameter	Work	ing Pressure	Min Bu	irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
3	1/8	10.4	0.41	207	3,000	825	12,000	70	2.8	0.07	0.05
6	1/4	12.7	0.50	190	2,750	750	11,000	70	2.8	0.09	0.06
8	5/16	15.0	0.59	172	2,500	690	10,000	89	3.5	0.11	0.07
10	3/8	16.3	0.64	155	2,250	620	9,000	127	5.0	0.13	0.09
13	1/2	20.0	0.79	140	2,000	550	8,000	178	7.0	0.19	0.13
16	5/8	23.1	0.91	100	1,500	410	6,000	203	8.0	0.23	0.15
20	3/4	27.9	1.10	90	1,250	345	5,000	254	10.0	0.26	0.17
25	1	35.8	1.41	70	1,000	270	4,000	305	12.0	0.36	0.24

## **Single Wire Braid, Thin Cover Hydraulic Hose** 1SN

## Construction

Tube	Seamless synthetic rubber
Reinforcement	Single high tensile steel wire braid
Cover	Black synthetic rubber; weather, oil, fuel and ab
Temperature Range	-40 °C to +100 °C (+120 °C intermittent)
	Mosts or exceeds the requirements of CAE JE1

Meets or exceeds the requirements of SAE J517 100 R1 type AT – EN 853 1SN-ISO 1436. Meets flame resistance acceptance designation US MSHA IC – 152/1 & LOBA

## Technical Data

Ins	Inside Diameter		Outside Diameter		Working Pressure		st Pressure	Min Be	nd Radius	Wei	
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
4.8	3/16	12	0.47	250	3,600	1,000	14,500	90	3.5	0.19	0.13
6.4	1/4	14	0.55	225	3,250	900	13,050	100	3.9	0.21	0.14
8.0	5/16	15	0.59	215	3,100	850	12,350	115	4.5	0.24	0.16
9.5	3/8	18	0.71	180	2,600	720	10,450	130	5.1	0.33	0.22
12.7	1/2	21	0.83	160	2,300	640	9,300	180	7.1	0.41	0.27
16.0	5/8	24	0.94	130	1,900	520	7,550	200	7.9	0.45	0.30
19.0	3/4	28	1.10	105	1,500	420	6,000	240	9.4	0.58	0.39
25.4	1	36	1.42	88	1,300	350	5,200	300	11.8	0.88	0.59
32.0	1¼	44	1.73	63	900	250	3,650	420	16.5	1.23	0.82
38.0	1½	51	2.01	50	725	200	2,900	500	19.7	1.51	1.01
50.8	2	64	2.52	40	580	160	2,300	630	24.8	1.97	1.32

## **Double Wire Braid, Thin Cover Hydraulic Hose** 2SN

### Construction

ſube	Seamless synthetic rubber
Reinforcement	Two high tensile steel wire braids
Cover	Black synthetic rubber; weather, oil, fuel and al
Temperature Range	-40 °C to +100 °C (+120 °C intermittent)
	Meets or exceeds the requirements of SAE J5

Meets or exceeds the requirements of SAE J517 100 R2 type AT - EN 853 2SN - ISO 1436. Meets flame resistance acceptance designation US MSHA IC - 152/1 & LOBA

## Technical Data

Insi	Inside Diameter		Outside Diameter		orking Pressure Min Burst Pres		urst Pressure	e Min Bend Radius		Weig	
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
4.8	3/16	14	0.55	415	6,000	1,650	23,950	90	3.5	0.31	0.21
6.4	1/4	15	0.59	400	5,800	1,600	23,200	100	3.9	0.33	0.22
8.0	5/16	17	0.67	350	5,100	1,400	20,300	115	4.5	0.39	0.26
9.5	3/8	19	0.75	330	4,800	1,320	19,150	130	5.1	0.50	0.34
12.7	1/2	23	0.91	275	4,000	1,100	15,950	180	7.1	0.59	0.40
16.0	5/8	26	1.02	250	3,600	1,000	14,500	200	7.9	0.71	0.48
19.0	3/4	30	1.18	215	3,100	850	12,350	240	9.4	0.86	0.58
25.4	1	38	1.50	165	2,400	650	9,450	300	11.8	1.28	0.86
32.0	1¼	49	1.93	125	1,800	500	7,250	420	16.5	2.02	1.35
38.0	1½	55	2.17	90	1,300	360	5,250	500	19.7	2.32	1.55
50.8	2	68	2.68	80	1,150	320	4,650	630	24.8	2.85	1.91



brasion resistant



brasion resistant

## Four Spiral Wire Hydraulic Hose 4SP

## Construction

Tube	Seamless synthetic rubber
Reinforcement	Four spirals of high tensile wire
Cover	Black synthetic rubber; weather, oil, fuel and abrasion resistant
Temperature Range	-40 °C to +100 °C (+120 °C intermittent)



Meets or exceeds the requirements of SAE J517 100 R10 -ESN 856 4SP - ISO 3862. Meets flame resistance acceptance designation US MSHA IC - 152/1 & LOBA

## Technical Data

Ins	Inside Diameter		Outside Diameter		Vorking Pressure Min B		urst Pressure Min		n Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
10.0	3/8	22	0.87	445	6,450	1,780	25,800	180	7.1	0.78	0.52
12.7	1/2	25	0.98	415	6,000	1,660	24,000	230	9.1	0.93	0.62
16.0	5/8	28	1.10	350	5,000	1,400	20,300	250	9.8	1.17	0.78
19.0	3/4	32	1.26	350	5,000	1,400	20,300	300	11.8	1.48	0.99
25.4	1	40	1.57	280	4,000	1,120	16,300	340	13.4	2.02	1.35
32.0	11/4	51	2.01	210	3,000	840	12,200	460	18.1	3.05	2.04
38.0	11/2	57	2.24	185	2,650	740	10,730	560	22.0	3.52	2.36
50.8	2	70	2.76	165	2,360	660	9,600	660	26.0	5.20	3.48

## Four Spiral Wire Hydraulic Hose 4SH

## Construction

Tube	Seamless synthetic rubber
Reinforcement	Four spirals of high tensile wire
Cover	Black synthetic rubber; weather, oil, fuel and abrasion resistant
Temperature Range	-40 °C to +100 °C (+120 °C intermittent)



Meets or exceeds the requirements of EN 856 4SH and ISO 3862. Meets flame resistance acceptance designation US MSHA IC - 152/1 & LOBA

## Technical Data

Insi	Inside Diameter		Outside Diameter		ing Pressure	g Pressure Min Burst Pressur		Min Bend Radius		Weight	
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
19.0	3/4	32	1.26	420	6,090	1,680	24,360	280	11.0	1.53	1.03
25.4	1	39	1.54	380	5,510	1,520	22,040	340	13.4	2.06	1.38
32.0	1¼	46	1.81	345	5,000	1,380	20,000	460	18.1	2.46	1.65
38.0	11/2	54	2.13	290	4,200	1,160	16,820	560	22.0	3.35	2.24
50.8	2	68	2.68	250	3,625	1,000	14,500	700	27.6	4.55	3.05

## Four or Six Spiral Wire Hydraulic Hose R13

### Construction

Tube	Seamless synthetic rubber				
Reinforcement	Four or six spirals of high tensile wire				
Cover	Black synthetic rubber; weather, oil, fuel and at				
Temperature Range -40 °C to +121 °C					

Meets or exceeds the requirements of SAE J517 100 R13 -

## Technical Data

Ins	ide Diameter	Outs	ide Diameter	Work	ing Pressure	Min Bı	urst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
6.4	1/4	21	0.81	776	11,250	3,100	44,950	127	5.0	0.93	0.62
9.5	3/8	24	0.94	690	10,000	2,760	40,020	152	6.0	1.10	0.74
12.7	1/2	27	1.06	512	7,500	2,070	30,015	200	7.9	1.35	0.90
19.0	3/4	32	1.26	345	5,000	1,380	20,000	240	9.4	1.65	1.11
25.4	1	39	1.54	345	5,000	1,380	20,000	300	11.8	2.25	1.51
32.0	11⁄4	50	1.96	345	5,000	1,380	20,000	420	16.5	3.60	2.41
38.0	11/2	57	2.26	345	5,000	1,380	20,000	500	19.7	4.75	3.18
50.8	2	72	2.83	345	5,000	1,380	20,000	630	24.8	6.90	4.62

## **Hydraulic Hose** BX20

### Construction

Tube	Neoprene/layer of synthetic fabric				
Reinforcement	Four plies of high tensile steel wire				
Cover	Synthetic rubber; weather, oil, and abrasion r				
Temperature Range -40 °C to +121 °C					

## Technical Data

Insi	Inside Diameter		Outside Diameter		Working Pressure Min B		urst Pressure	Min	Min Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
19.0	3/4	23	0.91	345	5,000	1,380	20,000	240	9.4	1.59	1.07
25.4	1	39	1.54	345	5,000	1,380	20,000	300	11.8	2.20	1.47
32.0	1¼	50	1.97	345	5,000	1,380	20,000	415	16.3	3.69	2.47
38.0	11/2	57	2.24	345	5,000	1,380	20,000	500	19.7	4.79	3.21
50.8	2	71	2.80	345	5,000	1,380	20,000	635	25.0	7.48	5.01



orasion resistant

EN 856 R13 - ISO 3862. Meets flame resistance acceptance designation US MSHA IC - 152/1



resistant

## **Slim Line Rotary Hydraulic Hose**

### Construction

Tube	Black NBR/CR blend
Reinforcement	High strength steel cables and textile plies
Cover	Black CR, weather; oil, fuel, ozone and abrasion resistan
Temperature Range	-30 °C to +82 °C



### Technical Data

Insi	Inside Diameter Outside Diamete		de Diameter	Working Pressure		Min Burst Pressure		Min Bend Radius		Weight		
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft	
63.0	21/2	106	4.17	207	3,000	620	9,000	760	29.9	11.20	7.50	
76.0	3	119	4.69	207	3,000	620	9,000	910	35.8	13.00	8.71	

## **Fireshield Fuel and Oil Suction and Delivery Hose** DO16HFR

### Construction

Tube	Black NBR	nental 3 Con
Reinforcement	High tensile textile cords with embedded steel helix wire and antistatic wire	Ontille
Cover	Black CR abrasion, ozone and hydrocarbon resistant over layers	
	of heat resistant fibre	
Temperature Range	-25 °C to +100 °C	
Fire Rating	Lloyds Approved (OSG/1000/499) at 700 °C for 30 minutes.	



Fuel oil suction and delivery, with up to 50% aromatic content, suitable for sea-water, mud and general offshore applications, long lasting in bunkering applications

## Technical Data

Insi	Inside Diameter Outside Diameter		e Diameter	Working Pressure		Min Burst Pressure		Min Ber	nd Radius		Weight	
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft	
25	1	45	1.8	16	232	64	928	160	6.3	1.48	0.99	
38	11/2	58	2.3	16	232	64	928	244	9.6	2.15	1.44	
51	2	79	3.1	16	232	64	928	300	11.8	4.78	3.20	
76	3	107	4.2	16	232	64	928	400	15.7	7.13	4.78	
102	4	134	5.3	16	232	64	928	520	20.5	7.46	5.00	
127	5	156	6.1	16	232	64	928	1,030	40.6	9.56	6.41	
152	6	184	7.2	16	232	64	928	1,140	44.9	14.02	9.39	
203	8	242	9.5	16	232	64	928	1,250	49.2	22.54	15.10	

## **Blowout Preventor Control Hose** FIRESHIELD 5000 Hydraulic Hose

## Construction

Tube	Black CR rubber
Reinforcement	$^1\!\!/_4$ " & $^3\!\!/_8$ ", two wire braid. Others 4 or 6 wire spin
Cover	Red flame retardent CR rubber over layers of h
Temperature Range	-40 °C to +100 °C
Fire Rating	Lloyds Approved (OD/1000/499) at 700 °C for

## Technical Data

Insi	Inside Diameter 0		Outside Diameter		Working Pressure Mi		ırst Pressure	Min	Bend Radius	Weight		
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft	
6.5	1/4	20.0	0.8	345	5,000	1,379	20,000	110	4.3	0.75	0.50	
9.5	3/8	24.0	0.9	345	5,000	1,379	20,000	150	5.9	0.80	0.54	
12.7	1/2	30.0	1.2	345	5,000	1,379	20,000	250	9.8	1.22	0.82	
19.1	3/4	37.0	1.5	345	5,000	1,379	20,000	330	13.0	1.82	1.22	
25.4	1	44.0	1.7	345	5,000	1,379	20,000	375	14.8	2.53	1.69	
31.7	11/4	58.0	2.3	345	5,000	1,379	20,000	460	18.1	4.20	2.81	
38.1	11/2	63.0	2.5	345	5,000	1,379	20,000	520	20.5	6.29	4.21	
50.8	2	77.0	3.0	345	5,000	1,379	20,000	700	27.6	8.90	5.96	

## Fire Resistant Firewater Deluge Hose

FW3 Seawater Delivery

## Construction

Tube	Black CR rubber
Reinforcement	Steel cord layers
Cover	Red smooth CR
Temperature Range	-30 °C to +100 °C
Fire Rating	Lloyds Approved (OD/1000/499) at 700 °C fo

## Technical Data

Insi	ide Diameter	Outsi	de Diameter	Work	ing Pressure	Min Bu	irst Pressure	Min	Bend Radius		Weight
mm	in	mm	in	bar	psi	bar	psi	mm	in	kg/m	lb/ft
51	2	79	3.1	21	305	104	1,500	400	15.7	4.78	3.20
76	3	107	4.2	21	305	104	1,500	500	19.7	7.13	4.78
102	4	134	5.3	21	305	104	1,500	600	23.6	7.46	5.00
127	5	156	6.1	21	305	104	1,500	1,030	40.6	9.56	6.41
152	6	184	7.2	21	305	104	1,500	1,140	44.9	14.02	9.39
203	8	242	9.5	21	305	104	1,500	1,250	49.2	22.54	15.10
		272		Z I		104	1,500	1,250			



rals heat resistant fibre

5 minutes and API16D compliant



for 30 minutes

## Hose Couplings Summary





# Low Pressure Couplings

Our extensive range of couplings complements our entire range of hoses, and will provide an ideal solution for your coupling requirements. Meeting the highest safety standards, our range includes QR quick disconnect self-sealing couplings, QR74 fire rated coupling and safelock couplings for low pressure applications.

WP (psi)	WP (bar)	ID (in)	ID (mm)
6,000-500	414-69	1-8	25-206
300	20	2-5	51-127
150	10		19-152
150-75	10-5	3⁄4-6	19-152
150	10	%-2	10-51
5,000	350	1	25
300	20	%, ¾, 1	10, 19, 25
9,000-4,000	620-276	%, ¾, 1	10, 19, 25
10,000	690	1/4	6,3
5,000-800	350-55		10-51
5,000	350	%-2	10-51



## **Hammer Lug Union**

These are available in a wide range of sizes and in working pressures up to 20,000 psi providing pressure tight, positive sealing.

application. Available for standard, cold temperature and sour gas applications.

Sour gas application unions are manufactured in accordance with NACE MR-01-75 (latest revision).

#### Figure 50

500 psi cwp (35 bar) Metal to metal ball and cone seal. Sizes: Threaded or socket weld in 4" or 5"

#### Figure 100

1,000 psi cwp (69 bar) A low pressure general purpose threaded a variety of applications in threaded or union suitable for air, water, oil or gas service. Metal to metal ball and cone seal. Sizes: 2", 21/2", 3", 4", 5", 6", 8"

#### Figure 200

2,000 psi cwp (138 bar) General purpose union designed to meet a variety of applications in threaded or butt weld options. Metal to metal ball and cone seal. Sizes: 1", 1¼", 1½", 2", 2½", 3", 4", 5", 6", 8"

### Figure 206

2,000 psi cwp (138 bar) Identical to the Fig 200 union with a secondary 'O' ring seal to supplement the and are fitted with an 'O' ring seal and are metal to metal ball and cone seat. Sizes: 1", 1¼", 1½", 2", 2½", 3", 4", 5", 6", 8"

#### Figure 207

2,000 psi cwp (138 bar) Blanking cap fully interchangeable with Figure 200 and 206 unions. For use where blanking off at the end of a line is Seal types vary according to pressure and required. The cap is fitted with an 'O' ring seal to ensure a leakproof seal. Sizes: 3", 4", 6"

### Figure 600

6,000 psi cwp (414 bar) A bronze seated union designed to combat rust and corrosion, where a metal to metal seal is desirable. Ideal for steam service. Sizes: 1", 2", 3", 4" - threaded.

### Figure 602

6,000 psi cwp (414 bar) General purpose union designed to meet butt weld options. Metal to metal ball and 15,000 psi cwp (1,034 bar) cone seal. Sizes: 1", 11/2", 2", 3", 4"

#### Figure 1002

10,000 psi cwp (690 bar) - 1" to 4" 7,500 psi cwp (483 bar) - 5" & 6" General purpose union designed to meet a variety of applications. Fitted with a secondary elastomeric seal to supplement the metal to metal ball and cone seat. Sizes: 1", 2", 3", 4" are designed for 10,000 psi and are fitted with a lip type seal and are available either threaded or butt weld.

Sizes: 5", 6" are designed for 7,500 psi only available in butt weld option.

#### Figure 1003

10,000 psi cwp (690 bar) - 2" & 3" 7,500 psi cwp (483 bar) - 4" & 5" Misalignment unions capable of up to 7.5° misalignment off the centerline (15° included).

Note: 2" union limited 3.5° misalignment off the centerline (7° included). Sizes: 2"& 3" are designed for 10,000 psi either threaded or butt weld. Sizes: 4" & 5" are designed for 7,500 psi. 4" either threaded or butt weld, 5" only available as butt weld.

#### Figure 1004

10,000 psi cwp (690 bar) Fitted with an elastomeric lip seal and are only available in butt weld option. Sizes: 5", 6"

#### Figure 1502

The most widely used union within the range, suitable for a wide range of applications. Metal to metal ball and cone seal. Sizes: 1", 11/2", 2", 3", 4" threaded or butt weld options. Sizes: 5", 6" butt weld only.

### Figure 2002

20,000 psi cwp (1,380 bar) Fitted with lip type elastomer seal and anti extrusion ring. Sizes: 2", 3", 4", 5", 6" butt weld only.

#### Figure 2202

15,000 psi cwp (1,034 bar) Sour gas union fitted with elastomer seals and stainless steel anti extrusion rings fitted as standard. Sizes: 2", 3", 4", 5", 6" butt weld only.

### Technical Data

Nominal Pipe Sizes (in & mm)										Rating (psi)	Pressure					
8	6	5	4	3	2½	2	1½	1¼	1	Gas Service	Sour	ard Service	Standa	_		
200	150	125	100	80	65	50	40	32	25	Test	Cold Working	Test	Cold Working	Colour Key for Nut	Colour Key for Body	Fig No.
			•	•						N/A	N/A	750	500			50
•	•	•	•	•	•	•				N/A	N/A	1,500	1,000			100
•	•	•	•	•	•	•	•	•	•	3,000	2,000	3,000	2,000			200
•	•	•	•	•	•	•	•	•	•	3,000	2,000	3,000	2,000			206
	•		•	•						3,000	2,000	3,000	2,000			207
			•	•	•	•	•		•	N/A	N/A	9,000	6,000			600
			•	•	•	•	•		•	9,000	6,000	9,000	6,000			602
	•	•	•	•	•	•	•		•	11,250	7,500	15,000	10,000			1002
		•	•	•		•				11,250	7,500	15,000	10,000			1003
	•	•								11,250	7,500	15,000	10,000			1004
	•	•	•	•		•	•		•	15,000	10,000	22,500	15,000			1502
	•	•	•	•		•				N/A	N/A	30,000	20,000			2002
	•	•	•	•		•				22,500	15,000	N/A	N/A			2202

### Part Number

M:

A٠



S: Sour service -

#### Raw Material

#### Connection

A:	API Threaded	W9:	BW Sch 80
N:	NPT Threaded	W12:	BW Sch 120
W1:	BW Sch 10	W16:	BW Sch 160
W4:	BW Sch 40	XS:	BW Sch XS
W6:	BW Sch 60	XX:	BW Sch XXS

#### Fia No.

1:	Fig 100	8:	Fig 50
2:	Fig 200	9:	Fig 207
3:	Fig 206	10:	Fig 600
4:	Fig 400	11:	Fig 1003
5:	Fig 602	12:	Fig 2202
5:	Fig 1502	13:	Fig 1004
7.	Fig 1002		

Hose & Couplings - Low Pressure Couplings



## Valved Weaklink Breakaway Coupling

Materials	Stainless Steel 316 or Carbon Steel (internal components stainless steel)
Working Pressure	20 bar (300 psi)
Breakaway Load	3T (other loads available on request)
Design Features	<ul> <li>Full range of elastomeric seals available to suit service</li> <li>3", 4", 5" and 6" sizes also available with NPT male and hose tail connections</li> <li>Completely serviceable, all components can be replaced</li> <li>Also available in unvalved variants</li> </ul>

c	oupling Size	Approxi	mate Length	Maxim	um Diameter	NPT Female Thread		
mm	in	mm	in	mm	in	mm	in	
51	2	236	9.3	136	5.4	51	2	
76	3	385	15.2	150	5.9	76	3	
102	4	385	15.2	175	6.9	102	4	
127	5	395	15.6	205	8.1	127	5	



## **Dry Break Coupling**

Materials	Aluminium, Gunmetal and Stainless Steel 316; Vito
Available Sizes	3⁄4", 1, 11⁄4", 11⁄2", 2", 21⁄2", 3", 4", 6"
Working Pressure	10 bar (150 psi)
Design Features	<ul> <li>Dry Break Quick Release self sealing couplings a disconnect hoses and pipelines under pressure,</li> <li>They are used for the safe transfer of a diverse rarail tank car loading and off-loading, quayside an lube oil plants etc</li> <li>A complete coupling consists of both a Tank and or screwed), with a self sealing spring loaded val valve assembly, fixed guide sleeve and a swivel here.</li> </ul>
Operation	Coupling operation is by a push and turn action w the Tank unit, thus locking and sealing the two ha open, allowing flow to commence with minimum before the couplings separate and spillage is there nation, the coupling halves can be supplied c/w a are available with BSPP and NPT female threads a
Part Number	DB H V C5 - 032 SS
Dry Break Coupling ——	



ton seals fitted as standard, alternatives available on request

are designed for use where it is necessary to connect and , quickly and without spillage

range of petroleum products and other liquids, for road and nd offshore bunkering and hose exchange installations in

d Hose unit. The Tank unit comprises a body (either flanged alve, the Hose unit comprises a cam operated self sealing hose connector

which causes three rollers in the Hose unit to engage with alves together, further rotation causes the Hose unit valve to pressure drop. On disconnection, the two halves fully close refore negligible (max 2 cc). To avoid service cross contamia non-interchangeability feature. Both Hose and Tank units and the tank unit is also available with integral flange

#### Material

- A1: Aluminium G1: Gunmetal SS: Stainless Steel AS: Aluminium Body
- c/w Stainless Internals

### **Connection Size**

Expressed in 1/16" divisions

#### Thread

- B: Male C: Female
- Female BSP
- 1: 5: NPT



## **Air Coupling**

Materials	Malleable Iron, Brass and Stainless Steel. Viton Seals
Available Sizes	¾" to 2"
Working Pressure	10 bar (150 psi)
Design Features	<ul> <li>The industry standard compressed air coupling</li> <li>The couplings have a universal head, which is couplings regardless of the hose tail or thread</li> </ul>
	Warning: These couplings are not suitable for

## Never attempt to disconnect whilst under pressure



## **Cam and Groove Coupling**

Materials Available Sizes	Aluminium, Brass, Stainless Steel, Malleable Iron Buna seals are fitted as standard (other materials on request) ¾", 1", 1¼", 1½", 2", 2½", 3", 4", 5", 6"
Working Pressure	¾" to 2½"       10 bar (150 psi)         3"       10 bar (150 psi)         4"       7 bar (100 psi)         5" & 6"       5 bar (75 psi)
Design Features	<ul> <li>Widely used Quick Release couplings for leak proof connections for pipe, tubing, hose or tanks</li> <li>Suitable for liquids, vapours, gases and dry products</li> <li>Interchangeable with: Boss-Lock, Ez Boss-Lock, Andrews' Cam and Groove Couplers</li> </ul>
Operation	To connect simply extend the coupler arms and slip the adaptor into the coupler, then press the handles down with normal hand pressure to complete the joint. During use, line pressure increases the pressure on the face of the cam ensuring increased locking leverage.



















ng (also suitable for water service) s identical for all sizes and enables the connection of any two d size

### or steam

lings together and rotating one in a clockwise direction. It accidental disconnection, this guarantees the fittings are ad unless coupling halves are correctly assembled. It couplings firmly together and rotating one anticlockwise. If male or female threads.

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## Low Pressure Quick Release Coupling QR8

Materials

Stainless Steel 316

Design Features

• Completely serviceable, all components can be replaced

### Technical Data

Pressure	Working	ıg Length	Male Couplin	ng Length	Female Coupli	led Length	Coupl	Thread	NPT Female	ing Size	Coupl
psi	bar	in	mm	in	mm	in	mm	in	mm	in	mm
300	21	3.317	84	2.986	76	5.488	139	3/8	9.5	3/8	9.5
300	21	3.706	94	3.640	92	6.585	167	3/4	19	3/4	19
300	21	4.126	105	3.840	98	7.175	182	1	25	1	25

## Pressure Drop vs Flow Rate



## **High Pressure Quick Release Coupling** QR5

Materials	Stainless Steel 316 / 174-PH
Max. Working Pressure	5,000 psi
Min. Burst Pressure	12,500 psi
Design Features	<ul> <li>Full range of elastomeric seals available to suit service</li> <li>Also available with BSPT connectors</li> <li>Completely serviceable, all components can be replaced</li> </ul>

Technical Data

Coupling Size NPT Female Threa		male Thread	Coι	pled Length	Female Coupling Length		Male Coupling Length		Working Pressure		
mm	in	mm	in	mm	in	mm	in	mm	in	bar	psi
25.0	1	25.0	1	148	5.815	116	4.565	83	3.250	345	5,000

## Pressure Drop vs Flow Rate





• Also available in hex nut style, other body & seal materials - details on request



## **High Pressure Quick Release Coupling** QR10

Min. Burst Pressure

**Design Features** 

Stainless Steel 316

• Full range of elastomeric seals available to suit service

- Completely serviceable, all components can be replaced

### Technical Data

(	Coupling Size	NPT Female Thread		Coupled Length		Female Coupling Length		Male Coup	oling Length	Working Pressure		
mm	in	mm	in	mm	in	mm	in	mm	in	bar	psi	
6.4	1/4	6.4	1/4	83	3.257	51	2.000	44	1.720	690	10,000	

## Pressure Drop vs Flow Rate



# • Full range of elastomeric seals available to suit service

Also available with BSPT connectors

**High Pressure Quick Release Coupling** 

Stainless Steel 316

• Completely serviceable, all components can be replaced

### Technical Data

QR9

Materials

**Design Features** 

Coupling Size		NPT Female Thread		Coupled Length		Female Coupling Length		Male Cou	pling Length	Working Pressure	
mm	in	mm	in	mm	in	mm	in	mm	in	bar	psi
9.5	3/8	9.5	3/8	139	5.488	76	2.986	84	3.317	612	9,000
19.0	3/4	19.0	3/4	167	6.585	92	3.640	94	3.706	345	5,000
25.0	1	25.0	1	182	7.175	98	3.840	105	4.126	276	4,000

## Pressure Drop vs Flow Rate



Materials

Max. Working Pressure 10,000 psi

32,000 psi

- conventional ball bearing technique
- Absolutely no air inclusion dry seal

• Proven collet locking mechanism that provides surface contact over a broad area rather than

• Flush for easy clean, no working part exposed - renders dust caps unnecessary

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## **High Pressure Quick Release Coupling** QR45

Materials

**Design Features** 

Stainless Steel 316

- Full range of elastomeric seals available to suit service
- Also available with BSPT connectors
- Completely serviceable, all components can be replaced
- Other materials available on request

### Technical Data

Cou	Coupling Size NPT Female Thread		Coupled Length		Coupl	Female Coupling Length		Male Coupling Length		Maximum Operating Pressure		Minimum Burst Pressure	
mm	in	mm	in	mm	in	mm	in	mm	in	bar	psi	bar	psi
9.5	3/8	9.5	3/8	92	3.640	74	2.927	48	1.909	241	3,500	310	4,500
12.7	1/2	12.7	1/2	110	4.330	85	3.360	58	2.298	241	3,500	310	4,500
19.0	3⁄4	19.0	3/4	127	5.000	97	3.800	72	2.836	172	2,500	207	3,000
25.4	1	25.4	1	152	6.000	114	4.500	87	3.414	172	2,500	120	1,750
31.8	1¼	31.8	1¼	168	6.619	127	5.000	97	3.818	70	1,000	103	1,500
38.1	11/2	38.1	11/2	201	7.894	148	5.842	113	4.462	70	1,000	103	1,500
50.8	2	50.8	2	236	9.304	182	7.147	138	5.437	55	800	34	500

### Pressure Drop vs Flow Rate





## **High Pressure Quick Release Coupling** QR74

Materials

Stainless Steel Grade 316L Viton seals

**Design Features** 

- Fire Rated by Lloyds Register of Shipping to 700 °C NPT Female Connections
- Completely serviceable, all components can be replaced

#### Technical Data \_

Coupling Size Coupled Length		ed Length	Female Male Coupling Length Coupling Length			Male g Length	Dian cou	neter over pling lugs	l Operating	Maximum Pressure	Minimum Burst Pressure		
mm	in	mm	in	mm	in	mm	in	mm	in	bar	psi	bar	psi
 9.5	3/8	85	3.334	59	2.332	76	2.983	76	3.000	345	5,000	1,730	26,000
 12.7	1/2	110	4.330	71	2.790	86	3.386	108	4.250	345	5,000	1,600	24,000
 19.0	3/4	127	5.000	79	3.111	99	3.898	121	4.750	345	5,000	1,300	19,500
25.4	1	152	6.000	83	3.269	119	4.694	121	4.750	345	5,000	1,200	18,000
 31.8	11⁄4	168	6.614	100	3.955	134	5.275	146	5.750	345	5,000	1,000	15,000
 38.1	11/2	194	7.645	116	4.552	129	5.064	140	5.500	345	5,000	930	14,000
 50.8	2	230	9.054	131	5.175	197	7.768	184	7.250	207	3,000	900	13,500

### Pressure Drop vs Flow Rate



1/4"

Also available in hex nut style, other body and seal materials - details on request

## **High Pressure Hoses** Summary

		Size Range		Pressure Range	
Туре	ID (mm)	ID (in)	WP (bar)	WP (psi)	Application
API 7K	51-152	2-6	276-517	4,000-7,500	Mud delivery
Rotary & Vibrator (built-in)					Mud jumper
					Motion Compensator
					Decoking
					Water injection
API 7K	63-102	2.5-4	300-345	4,350-5,000	Mud delivery
Rotary & Vibrator (swaged)					Mud jumper
					Water injection
API 7K	51-102	2-4	345-1035	5,000-15,000	Cementing
Cement					Acidizing
Underbalanced Drilling	51-102	2-4	276-517	4,000-7,500	Rotary Drilling
					Mud delivery drilling for gas
					drilling
API 16C Choke & Kill	51-102	2-4	345-1,035	5,000-15,000	General choke & kill service
(Temp B)					Sour service
API 16C Choke & Kill	51-102	2-4	276-517	5,000-15,000	High temp choke & kill sys- tem
(Temp U)					Subsea choke & kill system
					Well test
API 17K	51-355	2-14	86-345	1,250-5,000	Live crude oil
Production					Gas export
(IOI gas service)					Gas injection
					Gas Lift
					Sour service
					Topside jumper
					Subsea jumper
					Tie-in
					Riser
					Flow line
API 17K	51-127	2-5	414-517	6.000-7.500	Live crude oil
Production					Gas export
(for extreme gas service)					Gas injection
					Gas Lift
					Sour service
					Topside iumper
					Subsea jumper
					Riser
					Elow line
ΔΡΙ 17K	102-203	/-8	310-/1/	4500-6000	Water injection
Flexible Lines	102 203	- 0	510 414	4,500 0,000	Mud delivery
(smooth bore with helix stiffening spiral					High pressure
					oil export
					High pressure loading

# **High Pressure** Hose & Couplings

decades of experience in the supply of high pressure hoses. Our hoses can be found on installations across the globe, and used for some of the most arduous and demanding applications lengths of up to 60 metres. in topside and subsea services.

Manufactured and designed using state-of-the-art technology, and to the highest quality standards, our hoses guarantee maximum reliability and performance. As such they not only offer

As a world leading manufacturer, ContiTech Oil & Marine boasts an exceptionally flexible design, but can also withstand external collapse, provide outstanding fatigue properties, offer chemical resistance and heat insulation, and can be supplied in continuous

> As the only hose manufacturer in the world to be certified for all relevant API standards - API 7K, API 17K and API 16C, the quality of our hoses is unrivalled within the industry.

# **High Pressure Mud and Cement Hoses** Selection Guide

#### Relevant standards

API Spec. 7K 5<sup>th</sup> ed. and API RP 7L 1<sup>st</sup> ed. (2010)

The major revision to API 7K in October 2006 introduced Flexible Specification Levels (FSL) to cover the following hose applications: • FSL 0: Cement hoses - with no pres-

- sure pulsation requirement
- FSL 1: Rotary and vibrator hoses for - low-frequency pressure pulsation requirement (NOT recommended for directional drilling)
- FSL 2: Rotary and vibrator hoses for recommended for directional drilling with down-linking)

#### Selection of mud and cement hoses

When deciding on the specification of your mud and cement hoses, you should consider: pressure rating; maximum expected flow rate (hose ID); hose length; maximum expected operating temperature; pressure pulsations; exposure to chemicals; gas exposure etc.

API Spec. 7K mud hoses should not be used for gas drilling, and must not be exposed to well effluent; for such applications API RP 17B applies.

#### Recommendations

For gas and underbalanced drilling use specifically developed mud hoses from ContiTech. If there is any possibility that the rig may be used for directional drilling, then use FSL 2 mud hoses.

Most available high-pressure mud hoses tolerate water-based and oil-based mud, however environmentally friendly mud, e.g. ester mud, may cause problems with vertical (non-directional) drilling some hoses. Similarly, most high-pressure mud hoses have limited resistance to zinc bromide. When ordering a new mud or cement hose, we therefore recommend that you specify any unusual chemicals.

directional drilling high-frequency Third party involvement can be arranged pressure pulsation requirements at various stages of the manufacture to suit client needs.

> In order to avoid over-bending and early failure of high-pressure mud and cement hoses, configuration analysis is recommended and can be carried out by our trained engineers using 3-D computer modelling.

## Rotary & Vibrator Hose (built-in coupling) API Specification 7K FSL 1-FSL 2 API Monogram License No: 7K-0008

### Construction

Operating Temperature	-25 °C to +100 °C or -30 °C to +82 °C
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm Above 6.4 m hose length +/- 1 %

## Typical Application & Features

Mud delivery, mud jumper, motion compensator, decoking, water injection • Fire rating available to Lloyd's Register OD 1000/499 at 700°C for 30 minutes

- Additional external protection can be added to the hose
- Minimum Bending Radius (MBR) is referred to the centre-line of the hose
  - Handling Instruction: TKO ASO latest edition
  - For gas drilling see Underbalanced drilling hoses

## Technical Data

Inside D	Inside Diameter		Working Pressure	Test	Pressure	API Grade	Safety factor	Outer Di	ameter	(s	MBR torage)	(оре	MBR eration)		Weight	Note
mm	in	bar	psi	bar	psi		(· WP)	mm	in	m	ft	m	ft	kg/m	lb/ft	
51	2.0	276	4,000	552	8,000	С	2.5	104	4.09	0.6	1.97	0.7	2.30	15	9.7	
	-	345	5,000	690	10,000	D	2.5	104	4.09	0.6	1.97	0.7	2.30	15	9.7	
64	2.5	276	4,000	552	8,000	С	2.5	111	4.37	0.6	1.97	0.7	2.30	15	10.1	
	-	345	5,000	690	10,000	D	2.5	111	4.37	0.6	1.97	0.7	2.30	15	10.1	
	-	517	7,500	1,035	15,000	E	2.5	136	5.35	0.7	2.30	0.8	2.62	31	20.6	
76	3.0	276	4,000	552	8,000	С	2.5	126	4.96	0.7	2.30	0.8	2.62	18	12.3	
	-	345	5,000	690	10,000	D	2.5	126	4.96	0.7	2.30	0.8	2.62	18	12.3	
	-	517	7,500	1,035	15,000	E	2.5	148	5.83	1.0	3.28	1.1	3.61	34	23.1	
89	3.5	276	4,000	552	8,000	С	2.5	140	5.51	0.8	2.62	0.9	2.95	21	14.1	
	-	345	5,000	690	10,000	D	2.5	140	5.51	0.8	2.62	0.9	2.95	21	14.1	
	-	517	7,500	1,035	15,000	E	2.5	162	6.38	1.2	3.94	1.3	4.27	39	25.9	
102	4.0	276	4,000	552	8,000	С	2.5	166	6.54	1.0	3.28	1.2	3.94	33	22.0	
	-	345	5,000	690	10,000	D	2.5	166	6.54	1.0	3.28	1.2	3.94	33	22.0	
	-	517	7,500	1,035	15,000	E	2.5	174	6.85	1.2	3.94	1.4	4.59	42	28.4	
127	5.0	345	5,000	690	10,000	D	2.5	213	8.39	1.4	4.59	1.5	4.92	67	45.1	
	-	517	7,500	1,035	15,000	E	2.5	213	8.39	1.4	4.59	1.5	4.92	67	45.1	
152	6.0	345	5,000	690	7,500	D	2.5	224	8.82	1.5	4.92	1.7	5.58	57	38.3	*
		517	7,500	1,035	15,000	E	2.5	248	9.76	1.6	5.25	1.8	5.91	93	62.5	*

\* without 7K label



## **Rotary & Vibrator Hose (swaged coupling)**

## API Specification 7K FSL 1-FSL 2 API Monogram License No: 7K-0008, -0096

### Construction

Operating Temperature	-30 °C to +82 °C
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm Above 6.4 m hose length +/- 1 %

### Typical Application & Features

Mud delivery, mud jumper, water injection for onshore use

- Branded TAURUS EMERGÉ
- Minimum Bending Radius (MBR) is referred to the centre-line of the hose
- For gas drilling see Underbalanced drilling hoses
- Handling Instruction: TKO ASO latest edition

Inside [	Inside Diameter N P		Working Pressure	Test	Pressure	API Grade	Safety factor	Outer I	Diameter MBR (storage)		(0	MBR peration)		Weight	
mm	in	bar	psi	bar	psi		(· WP)	mm	in	m	ft	m	ft	kg/m	lb/ft
76	3.0	345	5,000	690	10,000	D	2.5	126	4.96	0.7	2.30	0.8	2.62	18	12.1
89	3.5	345	5,000	690	10,000	D	2.5	140	5.51	0.8	2.62	0.9	2.95	21	14.1



# **Cementing Hose**

API Specification 7K FSL 0 API Monogram Licence No: 7K-0008

### Construction

Operating Temperature	-25 °C to +100 °C or -30 °C to +82 °C
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm Above 6.4 m hose length +/- 1 %

## Typical Application & Features

Cementing, acidizing, water injection

- Fire rating available to Lloyds Register OD 1000/499 at 700°C for 30 minutes
- Additional external protection can be added to the hose
- Minimum Bending Radius (MBR) is referred to the centre-line of the hose
- Handling Instruction: TKO ASO latest edition

### Technical Data

Inside Diameter			Working Test Pressure Pressure		Safety factor	Safety Outer Diameter factor			MBR torage)	(op	MBR eration)	Weight		Note	
mm	in	bar	psi	bar	psi	(· WP)	mm	in	m	ft	m	ft	kg/m	lb/ft	
51	2.0	345	5,000	690	10,000	2.5	104	4.09	0.6	1.97	0.7	2.30	15	10	а
		690	10,000	1,035	15,000	2.25	123	4.84	0.9	2.95	1	3.28	27	18	
		1,035	15,000	1,552	22,500	2.25	140	5.51	1.1	3.61	1.4	4.59	40	27	
64	2.5	345	5,000	690	10,000	2.5	111	4.37	0.6	1.97	0.7	2.30	15	10	а
		690	10,000	1,035	15,000	2.25	136	5.35	1.0	3.28	1.1	3.61	31	21	
		1,035	15,000	1,552	22,500	2.25	153	6.02	1.2	3.94	1.5	4.92	45	31	
76	3.0	345	5,000	690	10,000	2.5	126	4.96	0.7	2.30	0.8	2.62	18	12	а
		690	10,000	1,035	15,000	2.25	148	5.83	1.1	3.61	1.2	3.94	34	23	-
		1,035	15,000	1,552	22,500	2.25	166	6.54	1.4	4.59	1.6	5.25	53	36	
102	4.0	345	5,000	690	10,000	2.5	166	6.54	1.0	3.28	1.2	3.94	33	22	а
		690	10,000	1,035	15,000	2.25	192	7.56	1.5	4.92	1.7	5.58	61	41	b
		1,035	15,000	1,552	15,000	2.25	222	8.74	1.4	4.59	1.4	4.59	108	73	b

a hose prototype testing covered by API Specification 7K FSL 1 and FSL 2-ISO 14693
 b without API Specification 7K monogram
 Warning: After use with acidizing service hoses must be water rinsed until the rinsing water reaches neutral pH



## **Underbalanced Drilling Hose**

### Construction

Operating Temperature	-25 °C to +100 °C or -30 °C to +82 °C
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm Above 6.4 m hose length +/- 1 %

### Typical Application & Features

Applications: rotary drilling, mud delivery for gas drilling application, water injection

- Test and burst pressure according to API Specification 7K
- Fire rating availability to Lloyd's Register OD 1000/499 at 700°C for 30 minutes
- Additional external protection can be added to the hose
- ${\mbox{ \bullet}}$  Minimum Bending Radius (MBR) is referred to the centre-line of the hose
- Handling Instruction: TKO ASO latest edition

### **Technical Data**

Inside Di	Inside Diameter		Working Pressure	Test	Pressure	Safety factor	Outer D	iameter	(9	MBR storage)	(ор	MBR eration)		Note	
mm	in	bar	psi	bar	psi	(· WP)	mm	in	m	ft	m	ft	kg/m	lb/ft	
51	2.0	276	4,000	552	8,000	2.5	94	3.70	0.8	2.62	0.9	2.95	10	6.7	
		345	5,000	690	10,000	2.5	94	3.70	0.8	2.62	0.9	2.95	10	6.7	
64	2.5	276	4,000	552	8,000	2.5	108	4.25	0.9	2.95	1.0	3.28	13	8.7	
	-	345	5,000	690	10,000	2.5	110	4.33	0.9	2.95	1.0	3.28	15	10.1	
	-	517	7,500	1,035	15,000	2.5	124	4.88	1.0	3.28	1.2	3.94	22	14.8	*
76	3.0	276	4,000	552	8,000	2.5	122	4.80	1.0	3.28	1.2	3.94	15	10.1	
	-	345	5,000	690	10,000	2.5	124	4.88	1.0	3.28	1.2	3.94	17	11.4	
	-	517	7,500	1,035	15,000	2.5	142	5.59	1.1	3.61	1.3	4.27	31	20.8	*
89	3.5	276	4,000	552	8,000	2.5	138	5.43	1.2	3.94	1.4	4.59	20	13.4	
	-	345	5,000	690	10,000	2.5	138	5.43	1.2	3.94	1.4	4.59	20	13.4	
	-	517	7,500	1,035	15,000	2.5	156	6.14	1.3	4.27	1.5	4.92	35	23.5	*
102	4.0	276	4,000	552	8,000	2.5	154	6.06	1.3	4.27	1.5	4.92	22	14.8	*
	-	345	5,000	690	10,000	2.5	164	6.46	1.3	4.27	1.5	4.92	32	21.5	*
		517	7,500	1,035	15,000	2.5	168	6.61	1.4	4.59	1.6	5.25	39	26.2	×

\* hose prototype testing covered by API Specification 7K FSL 1



# Flexible Choke and Kill Lines Selection Guide

tightest configuration.

critical application.

#### Relevant standards API Spec. 16C

For flexible choke and kill lines API 16C specification requires complex design verification testing, a series of mechanical tests, including exposure to high concentration of H2S, decompressions etc.

In addition, a successful fire test (704 °C 30 min) is usually required for topside and land rig applications.

#### Selection of flexible choke and kill lines

When deciding on the specification of your flexible choke & kill line, you should consider: pressure rating; maximum expected flow rate (hose ID); hose length; maximum expected operating temperature; exposure to chemicals; water depth (potential collapse of the flexible line); fire safety.

Selection of an unsuitable hose may result in failure in operation, which is likely to occur in the most extreme conditions, i.e. when the choke & kill system is called on to deal with a kick or blow-out situation. For this reason you should only use hoses with full API 16C compliance. For complete peace of mind, we recommend that you ask for third party-witnessed test reports for the particular hose type. The API logo alone does not guarantee that the hose type has undergone proper design verification testing.



We recommend configuration analysis for every flexible choke & kill line application.

ContiTech lines have exceptionally low operating bending radius, and preformed flexible lines can be offered to meet the

Note: Always ensure that all your choke & kill hoses have the API 16C monogram and associated documentation. Only then can you be certain that you have the correct hose for this

## Flexible Choke & Kill Line (Temp B)

## API Specification 16C API Monogram Licence No: 16C-0004

## Construction

Lining Material	H2S Resistant Synthetic Polymer PA11
Operating Temperature	-20 °C to +100 °C
Survival Temperature	177 °C for max 1 hour
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm; above 6.4 m hose length +/- 1 %

## Typical Application & Features

General choke and kill service, sour service

- Fire rating availability to Lloyd's Register OD 1000/499 at 704°C for 30 minutes
- Additional external protection can be added to the hose
- Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition
- Choke and kill lines are not manufactured with Line Pipe Threaded Couplings
- Minimum Bend Radius (MBR) is referred to the centre-line of the hose

All the regulations of API 16 Specification 16C are met including § 9.14.12 - Performance Verification Test and § 10.5.2 - High Temperature Exposure Test

#### Inside MBR MRR Туре Working Test Pressure Safety Outer Weight Note Diameter Pressure factor Diameter (storage) (operation) bar psi (·WP) ft kg/m lb/ft psi in bar mm in ft m mm m Standard 345 5.000 690 10.000 4.45 16.2 18.5 2.62 4.84 2.62 Standard c/w st. st. wrap 0.8 Fire rated 5.04 2.9 2.9 19.6 Fire rated c/w st. st. wrap 5.43 690 10,000 1,035 15,000 2.25 4.45 16.2 113 2.6 2.6 Standard Standard c/w st. st. wrap 4.84 2.6 18.5 19.6 Fire rated 5.04 5.43 2.9 2.95 0.9 22.2 v st. st. wrap 1035 15000 1552 22500 225 Standard 136 146 5.35 3.28 3.61 27.1 Standard c/w st. st. wrap 3.94 31.0 35.3 18.7 Fire rated c/w st. st. wrap 6.38 3.61 3.94 64 345 5,000 690 10,000 2.5 Standard 0.9 2.9 21.4 22.6 25.5 18.7 Standard c/w st. st. wrap 2.95 3.28 3.28 Fire rated 1.0 Fire rated c/w st. st. wrap 3.28 680 10,000 1,035 15,000 2.25 Standard 2.95 21.4 2.9 Standard c/w st. st. wrap 0.9 141 555 3.2 Fire rated Fire rated c/w st. st. wrap 25.5 30.8 33.9 3.28 594 1035 15,000 1,552 22,500 2.25 149 3.61 Standard Standard c/w st. st. wrap 4.2 Fire rated 6.46 1.4 4.5 35.4 40.0 3.94 Fire rated c/w st. st. wrap 1.4 4.59 6.89 3.94 345 5.000 690 10.000 141 2.95 21.7 24.6 Standard 2.95 0.9 Standard c/w st. st. wrap 26.0 30.4 21.7 3.2 Fire rated 3.2 Fire rated c/w st. st. wrap 690 10,000 1,035 15,000 2.25 141 2.9 Standard 0.9 2.9 0.9 24.6 26.0 30.4 34.9 39.7 39.9 2.9 Standard c/w st. st. wrap 2.95 6.10 Fire rated 1.0 1.0 Fire rated c/w st. st. wrap 6.5 1.0 1.0 3.2 3.2 1035 15,000 1,552 22,500 2.25 164 6.46 1.4 4.59 4.59 5.58 tandard Standard c/w st. st. wrap 6.8 3.94 4.59 1.4 Fire rated Fire rated c/w st. st. wrap 45.0 59.8 65.9 7.48 1/ 4.5 4.5 5.58 4.59 345 5,000 690 10,000 8.62 1.4 Standard /w st. st. wrap 4.5 1.4 4.59 14 Fire rated 4.9 913 4.9 65.8 4.92 4.92 4.59 4.59 72.3 59.8 65.9 Fire rated c/w st. st. wrap 690 10,000 1,035 15,000 1.4 2.25 8.62 14 1.4 Standard c/w st. st. wrap 4.92 65.8 9.13 4.92 Fire rated 232 Fire rated c/w st. st. wrap 108 243 9.57 1.5 4.92 1.5 72.3

\* without API monogram



## Flexible Choke & Kill Line (Temp U) API Specification 16C API Monogram Licence No: 16C-0004

### Construction

Lining Material	H2S Resistant Synthetic Polymer PA11
Operating Temperature	-18 °C to +121 °C for Choke & Kill Applicat -20 °C to +100 °C for Well test Application
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm; abov

## Typical Application & Features

General choke and kill service sub Sea choke and kill service, well test

- Fire rating availability to Lloyd's Register OD 1000/499 at at Choke and Kill/Well Test lines are not manufactured with Line 700°C for 30 minutes Pipe Threaded couplings
- Additional external protection can be added to the hose
- Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition

All the regulations of API Specification 16C are met including §9.14.12 - Performance Verification Test

## **Technical Data**

	motor	Туре	Type Workin Brossy		Test P	ressure	Safety	Outer		MBR (storage)		(	MBR		Note	
Diai	ileter		. P	ressure			Tactor	Dia	inieter -	(SL	orage)	toper	ation			
	in		bar	psi	bar	psi	(· WP)	mm	in		ft		ft	kg/m	lb/ft	
51	2	Standard	345	5,000	690	10,000	3.	142	5.59	0.8	2.62	0.8	2.62	38	25.3	a
		Standard c/w st. st. wrap					-	152	5.98	0.8	2.62	0.8	2.62	42	28.2	a
		Fire rated					-	155	6.10	0.9	2.95	0.9	2.95	44	29.3	a
		Fire rated c/w st. st. wrap		10.000	1.025	15.000		167	6.57	0.9	2.95	0.9	2.95		33./	a
		Standard	690	10,000	1,035	15,000	2.25	142	5.59	0.8	2.62	0.8	2.62		25.3	a
		Standard C/W St. St. Wrap					-	152	5.98	0.8	2.62	0.8	2.62	42	28.2	
		Fire rated c/w st. st. wrap					-	100	6.10	0.9	2.95	0.9	2.95	<u>44</u> <u>FO</u>	29.5	
		File Idleu C/W SL SL Widp	1025	15.000	1 5 5 3	22 500		177	6.07	1.2	2.95	1.2	2.95			d
		Standard c/w st st wrap	1035	15,000	1,552	22,500	2.25	188	740	1.2	3.94	1.2	3.94		<u>- 40.0</u> 51.0	
		Eiro rated					-	100	7.40	1.2	1 27	1.2	1 27	76	51.0	
		Fire rated c/w st_st_wrap					-	202	7.40	1.3	4.27	1.3	4.27		56.4	
	2.5	Standard	3/15	5.000	690	10,000	3	155	610	0.0	2.05	0.0	2.05		28.8	
04	2.5	Standard c/w st st wran	545	3,000	090	10,000	J -	167	6.57	0.9	2.95	0.9	2.95	43	331	a
		Fire rated					-	169	6.65	1.0	3.28	10	3 28		33.0	
		Fire rated c/w st_st_wrap					-	180	7.09	1.0	3.28	1.0	3.28	56	37.8	a
		Standard	680	10,000	1035	15 000	2.25	155	610	0.9	2.95	0.9	2.95	43	28.8	a
		Standard c/w st_st_wrap	000	.0,000	1,000	.0,000		167	6.57	0.9	2.95	0.9	2.95	49	331	a
		Fire rated					-	169	6.65	1.0	3.28	1.0	3.28	49	33.0	a
		Fire rated c/w st. st. wrap					-	180	7.09	1.0	3.28	1.0	3.28	56	37.8	a
		Standard	1035	15.000	1.552	22.500	2.25	191	7.52	1.3	4.27	1.3	4.27	77	52.0	
		Standard c/w st. st. wrap			.,= = =	,		202	7.95	1.3	4.27	1.3	4.27	85	57.4	
		Fire rated					-	204	8.03	1.4	4.59	1.4	4.59	85	57.2	
		Fire rated c/w st. st. wrap					-	215	8.46	1.4	4.59	1.4	4.59	94	63.0	
76	3	Standard	345	5,000	690	10,000	3	168	6.61	0.9	2.95	0.9	2.95	49	32.7	а
		Standard c/w st. st. wrap					-	180	7.09	0.9	2.95	0.9	2.95	56	37.5	а
		Fire rated					-	182	7.17	1.0	3.28	1.0	3.28	56	37.4	а
		Fire rated c/w st. st. wrap					-	193	7.60	1.0	3.28	1.0	3.28	63	42.5	а
		Standard		10,000	1,035	15,000	2.25	168	6.61	0.9	2.95	0.9	2.95	49	32.7	а
		Standard c/w st. st. wrap						180	7.09	0.9	2.95	0.9	2.95	56	37.5	а
		Fire rated						182	7.17	1.0	3.28	1.0	3.28	56	37.4	а
		Fire rated c/w st. st. wrap						193	7.60	1.0	3.28	1.0	3.28	63	42.5	а
		Standard	1035	15,000	1,552	22,500	2.25	208	8.19	1.4	4.59	1.4	4.59	90	60.2	
		Standard c/w st. st. wrap					-	219	8.62	1.4	4.59	1.4	4.59	98	66.0	
		Fire rated					-	218	8.58	1.5	4.92	1.5	4.92	97	65.2	
		Fire rated c/w st. st. wrap						230	9.06	1.5	4.92	1.5	4.92	106	71.4	
102	4	Standard	345	5,000	690	10,000	3	219	8.62	1.4	4.59	1.4	4.59	89	59.8	b
		Standard c/w st. st. wrap					-	230	9.06	1.4	4.59	1.4	4.59	98	65.9	b
		Fire rated					-	232	9.13	1.5	4.92	1.5	4.92	98	65.8	b
		Fire rated c/w st. st. wrap						243	9.57	1.5	4.92	1.5	4.92	108	72.3	b
		Standard	690	10,000	1,035	15,000	2.25	219	8.62	1.4	4.59	1.4	4.59	89	59.8	C
		Standard c/w st. st. wrap					-	230	9.06	1.4	4.59	1.4	4.59	98	65.9	C
		Fire rated					-	232	9.13	1.5	4.92	1.5	4.92	98	65.8	C
		Fire rated c/w st. st. wrap						243	9.57	1.5	4.92	1.5	4.92	108	72.3	C

a without API label until 2<sup>nd</sup> edition of API 16C issued

b without API label
 c operating temperature -18°C to +100°C



tion

ve 6.4 m hose length +/- 1 %

 Minimum Bend Radius (MBR) is referred to the centre-line of the hose

## Flexible Production Line (Extreme gas & liquid service)

## API Specification 17K API Monogram Licence No. 17K-0001

## Construction

Lining Material	H2S Resistant Synthetic Polymer	(110000
Operating Temperature	-20 °C to +90 °C	
Max. Available Length	60 m (200 ft)	
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm; above 6.4 m hose length -	+/- 1 %
Max. allowed H2S content	Up to 60 °C 3,000 ppm or 15 psi, whichever is greater. Up to 90	°C 1,000 ppm or 5 psi, whichever is greater.

## Typical Application & Features

Live crude oil, topside jumper, gas export, subsea jumper, gas injection, tie-in, gas lift, riser, sour service, flow line

- Fire rating availability to Lloyd's Register OD 1000/499
- Additional external protection can be added to the hose
- Material of the couplings is either Carbon Steel or Duplex
- Minimum Bending Radius BR is referred to the centre-line of the hose

Recommended maximum flow velocity: 20 m/sec for dry gas; 15 m/sec for liquid; 8m/sec for gaseous oil

Inside Diameter		Туре _		W	Working Pressure as for liquid		F	Test Pressure	Safety factor	Dia	Outer	(sto	MBR rage)	(s	MBR tatic)	(dyn	MBR amic)	w	eight
mm	in	-	bar	psi	bar	psi	bar	psit	(· WP)	mm	in	m	ft	m	ft	m	ft	kg/m	lb/ft
51	2.0	Standard	517	7,500	690	10,000	1,035	15,000	2.25	142	5.59	1.0	3.28	1.1	3.61	1.50	4.92	38	25.5
		Standard c/w st. st. wrap								152	5.98	1.0	3.28	1.1	3.61	1.50	4.92	42	28.2
		Fire rated								163	6.42	1.1	3.61	1.2	3.94	1.70	5.58	47	31.6
		Fire rated c/w st. st. wrap								174	6.85	1.1	3.61	1.2	3.94	1.70	5.58	53	35.6
64	2.5	Standard	517	7,500	690	10,000	1,035	15,000	2.25	153	6.02	1.1	3.61	1.2	3.94	1.70	5.58	41	27.5
		Standard c/w st. st. wrap								167	6.57	1.1	3.61	1.2	3.94	1.70	5.58	49	32.9
		Fire rated								174	6.85	1.2	3.94	1.4	4.59	1.80	5.91	50	33.6
		Fire rated c/w st. st. wrap								180	7.09	1.2	3.94	1.4	4.59	1.80	5.91	56	37.6
76	3.0	Standard	517	7,500	690	10,000	1,035	15,000	2.25	169	6.65	1.2	3.94	1.4	4.59	1.80	5.91	49	32.9
		Standard c/w st. st. wrap								180	7.09	1.2	3.94	1.4	4.59	1.80	5.91	56	37.6
		Fire rated								189	7.44	1.3	4.27	1.5	4.92	2.00	6.56	59	39.6
		Fire rated c/w st. st. wrap								201	7.91	1.3	4.27	1.5	4.92	2.00	6.56	67	45.0
89	3.5	Standard	517	7,500	690	10,000	1,035	15,000	2.25	195	7.68	1.4	4.59	1.6	5.25	2.10	6.89	68	45.7
		Standard c/w st. st. wrap								207	8.15	1.4	4.59	1.6	5.25	2.10	6.89	76	51.1
		Fire rated								208	8.19	1.5	4.92	1.8	5.91	2.30	7.55	76	51.1
		Fire rated c/w st. st. wrap								227	8.94	1.5	4.92	1.8	5.91	2.30	7.55	88	59.1
102	4.0	Standard	517	7,500	690	10,000	1,035	15,000	2.25	219	8.62	1.4	4.59	1.6	5.25	2.10	6.89	89	59.8
		Standard c/w st. st. wrap								230	9.06	1.4	4.59	1.6	5.25	2.10	6.89	98	65.8
		Fire rated								239	9.41	1.5	4.92	1.8	5.91	2.30	7.55	102	68.5
		Fire rated c/w st. st. wrap								251	9.88	1.5	4.92	1.8	5.91	2.30	7.55	112	75.3
127	5.0	Standard	414	6,000	552	8,000	828	12,000	2.25	245	9.65	1.8	5.91	2.0	6.56	2.70	8.86	104	69.9
		Standard c/w st. st. wrap								257	10.12	1.8	5.91	2.0	6.56	2.70	8.86	114	76.6
		Fire rated								266	10.47	1.9	6.23	2.2	7.22	2.90	9.51	118	79.3
		Fire rated c/w st. st. wrap								277	10.91	1.9	6.23	2.2	7.22	2.90	9.51	130	87.3



## Flexible Production Line (Rough Bore gas & liquid service) API Specification 17K API Monogram Licence No. 17K - 0001

### Construction

Operating Temperature	-30 °C to +90 °C
Max. Available Length	60 m (200 ft)
Prod. Length Tolerance	Up to 6.4 m hose length +/- 64 mm; abo
Allowed Aromatic Conten	t Max 30%
Max allowed USC Conton	Lin to CO <sup>o</sup> C 2,000 ppm or 1E pci, which

## Typical Application & Features

Live crude oil, topside jumper, gas export, subsea jumper, gas injection, tie-in, gas lift, riser, sour service, flow line • Fire rating availability to Lloyd's Register OD 1000/499

- at 704°C for 30 minutes
  - Additional external protection can be added to the hose

Recommended maximum flow velocity: 20 m/sec for dry gas; 15 m/sec for liquid; 8 m/sec for gaseous oil

### Technical Data

In	side	Туре		Wor	king Pro	essure		Test	Safety		Outer		MBR		MBR		MBR	v	Veight
Diam	eter		t	for gas	for	liquid	P	ressure	factor	Dia	meter	(sto	orage)	(	static)	(dyr	namic)		
mm	in		bar	psi	bar	psi	bar	psi	(· WP)	mm	in	m	ft	m	ft	m	ft	kg/m	lb/ft
51	2.0	Standard	345	5,000	517	7,500	776	11,250	2.25	148	5.83	0.8	2.62	0.9	2.95	1.20	3.94	39	26.2
		Standard c/w st. st. wrap								158	6.22	0.8	2.62	0.9	2.95	1.20	3.94		29.6
		Fire rated								168	6.61	0.9	2.95	1.0	3.28	1.40	4.59		32.9
61	2 5	Fire raled C/W SL SL Wrap	245	<u> 5 000</u>	517	7500	776	11 250	2.25	1/4	6.85		2.95	- 1.0	3.28	1.40	4.59		37.0
04	2.5	Standard c/w st st wran	343	5,000	517	7,500	//0	11,200	2.20	171	6.73	0.8	2.02	0.9	2.95	1.20	3.94	<u></u>	3/13
		Fire rated								180	7.09	0.0	2.02	10	3.28	1.20	4 59	54	36.3
		Fire rated c/w st. st. wrap								191	7.52	0.9	2.95	1.0	3.28	1.40	4.59	62	41.7
76	3.0	Standard	345	5,000	517	7,500	776	11,250	2.25	176	6.93	1.0	3.28	1.1	3.61	1.50	4.92	54	36.3
		Standard c/w st. st. wrap								188	7.40	1.0	3.28	1.1	3.61	1.50	4.92	62	41.7
		Fire rated								197	7.76	1.1	3.61	1.2	3.94	1.70	5.58	65	43.7
		Fire rated c/w st. st. wrap								208	8.19	1.1	3.61	1.2	3.94	1.70	5.58	73	49.0
89	3.5	Standard	345	5,000	517	7,500	776	11,250	2.25	190	7.48	1.1	3.61	1.2	3.94	1.70	5.58	60	40.3
		Standard C/W st. st. Wrap								202	- 7.95	<u> </u>	3.61	1.2	3.94	1.70	5.58	- 68	45./
		Fire rated c/w st st wrap								211	0.31	1.2	2.94	1.4	4.59	1.00	5.91	<u> </u>	<u>-40.4</u> <u>54.4</u>
102	10	Standard	3/15	5,000	517	7500	776	11 250	2.25	202	795	1.2	3.94	1.4	4.59	1.80	5.91	67	45.0
102	4.0	Standard c/w st_st_wrap	545	5,000	517	7,500	//0	11,200	2.25	214	8.43	1.2	3.94	14	4 59	1.80	5.91	75	50.4
		Fire rated								223	8.78	1.3	4.27	1.5	4.92	2.00	6.56	79	53.1
		Fire rated c/w st. st. wrap								239	9.41	1.3	4.27	1.5	4.92	2.00	6.56	91	61.1
127	5.0	Standard	345	5,000	517	7,500	776	11,250	2.25	231	9.09	1.3	4.27	1.5	4.92	2.00	6.56	83	55.8
		Standard c/w st. st. wrap								243	9.57	1.3	4.27	1.5	4.92	2.00	6.56	92	61.8
		Fire rated								252	9.92	1.4	4.59	1.6	5.25	2.10	6.89	97	65.2
450		Fire rated c/w st. st. wrap	2.45	<u>- 000</u>	E47	7500	770	11.250	- 2.25	263	10.35	1.4	4.59	1.6	5.25	2.10	6.89	107	/1.9
152	6.0	Standard	345	5,000	517	7,500	//6	11,250	2.25		10.12	1.6	5.25	1.8	5.91	2.40		96	64.5
		Eiro rated								209	10.59	1.0	5.20	1.0	6.22	2.40	- /.0/	112	75.2
		Fire rated c/w st_st_wran								289	11 38	1.7	5.58	1.9	6.23	2.00	853	123	82.6
127	70	Standard	293	4 2 5 0	345	5000	517	7500	2 2 5	279	10.98	1.7	5.91	20	6.56	2.00	8.86	101	679
/	7.0	Standard c/w st. st. wrap	200	1,200	0.0	0,000	017	7,000	2.20	291	11.46	1.8	5.91	2.0	6.56	2.70	8.86	117	78.6
		Fire rated								299	11.77	1.9	6.23	2.2	7.22	2.90	9.51	117	78.6
		Fire rated c/w st. st. wrap								312	12.28	1.9	6.23	2.2	7.22	2.90	9.51	135	90.7
152	8.0	Standard	259	3,750	345	5,000	517	7,500	2.25	311	12.24	1.9	6.23	2.2	7.22	2.90	9.51	121	81.3
		Standard c/w st. st. wrap								325	12.80	1.9	6.23	2.2	7.22	2.90	9.51	136	91.4
		Fire rated								331	13.03	2.1	6.89	2.4		3.20	10.50	139	93.4
254	10.0	Fire rated c/w st. st. wrap	100	2 250	2.41	2 5 0 0	262	<u> </u>	2.25	346	13.62	<u></u> 2.1	6.89	2.4		3.20	10.50	110	104.8
204	10.0	Standard c/w st st wran	155	2,250	241	3,500	302	5,250	2.20	37/	14.25	2.2	7.22	2.5	8.20	3.30	10.83	140	108.2
		Fire rated								383	15.08	2.2	755	2.5	8.53	3.50	11 48	168	112.9
		Fire rated c/w st. st. wrap								394	15.51	2.3	7.55	2.6	8.53	3.50	11.48	184	123.6
305	12.0	Standard	155	2,250	241	3,500	362	5,250	2.25	410	16.14	2.4	7.87	2.7	8.86	3.60	11.81	169	113.6
		Standard c/w st. st. wrap								421	16.57	2.4	7.87	2.7	8.86	3.60	11.81	186	125.0
		Fire rated								430	16.93	2.5	8.20	2.8	9.19	3.80	12.47	194	130.3
		Fire rated c/w st. st. wrap								442	17.40	2.5	8.20	2.8	9.19	3.80	12.47	212	142.4
330	13.0	Standard	103	1,500	207	3,000	310	4,500	2.25	434	17.09	2.6	8.53	2.9	9.51	3.90	12.80	181	121.6
		Standard c/w st. st. wrap								445	17.52	2.6	8.53	2.9	9.51	3.90	12.80	199	133./
		Fire rated								454	1/.8/	2./	8.86	- 3.0	9.84	4.10	13.45	20/	139.1
356	14.0		38	1 250	207	3000	310	4 500	2.25	400	1799	2.7	910	3.0	9.04	4.10	13.45	180	1270
550	1 <del>4</del> .0	Standard c/w st st wrap	00	1,200	207	5,000	210	4,500	2.20	469	18.46	2.0	919	3.1	10.17	4.20	13.78	196	1317
		Fire rated								477	18.78	2.9	9.51	3.2	10.50	4.40	14.44	215	144.5
		Fire rated c/w st. st. wrap								489	19.25	2.9	9.51	3.2	10.50	4.40	14,44	224	150.5





oove 6.4 m hose length +/- 1 %

Max. allowed H2S Content Up to 60 °C 3,000 ppm or 15 psi, whichever is greater. Up to 90 °C 1,000 ppm or 5 psi, whichever is greater.

- Material of the couplings is either Carbon Steel or Duplex • Minimum Bending Radius MBR is referred to the centre-line of
- the hose

## High Pressure Flexible Line (Smooth Bore for Liquid Services)

## API Specification 17K API Monogram Licence No. 17K-0001

## Construction

°C to +60 °C for water
200 ft)
6.4 m hose length +/- 64 mm; above 6.4 m hose length +/- 1 %

Allowed Aromatic Content Max. 40%

## Typical Application & Features

Water injection, mud delivery, high pressure oil export, high pressure loading

- Fire rating availability to Lloyd's Register OD 1000/499
- at 704°C for 30 minutes
- Additional external protection can be added to the hose
- of the hose Handling Instruction: TKO ASO latest edition

• Minimum Bend Radius (MBR) is referred to the centre-line

• Material of couplings either Carbon Steel or Duplex

**Recommended max flow velocity:** 15 m/sec

lr Diarr	iside ieter	Туре	W Pi	Working Pressure		Test ressure	Safety factor	Di	Outer ameter	MBR (storage)		MBR (static)		MBR (dynamic)		Weight	
mm	in		bar	psi	bar	psi	(· WP)	mm	in	m	ft	m	ft	m	ft	kg/m	lb/ft
102	4.0	Standard	414	6,000	621	9,000	2.25	196	7.72	1.4	4.59	1.6	5.25	2.10	6.89	61	41.0
	-	Fire rated		6,000		9,000		217	8.54	1.5	4.92	1.7	5.58	2.30	7.55	71	47.7
127	5.0	Standard	414	6,000	621	9,000	2.25	222	8.74	1.4	4.59	1.6	5.25	2.10	6.89	72	48.4
	-	Fire rated		6,000		9,000		342	13.46	1.5	4.92	1.7	5.58	2.30	7.55	85	57.1
140	5.5	Standard	414	6,000	621	9,000	2.25	235	9.25	1.5	4.92	1.7	5.58	2.30	7.55	77	51.7
	-	Fire rated		6,000		9,050		255	10.04	1.6	5.25	1.8	5.91	2.40	7.87	91	61.1
152	6.0	Standard	414	6,000	621	9,000	2.25	254	10.00	1.6	5.25	1.8	5.91	2.40	7.87	91	61.1
	-	Fire rated		6,000		9,000		276	10.87	1.7	5.58	1.9	6.23	2.60	8.53	102	68.5
178	7.0	Standard	345	5,000	514	7,500	2.25	284	11.18	1.8	5.91	2.1	6.89	2.70	8.86	109	73.2
	-	Fire rated		5,000		7,500		306	12.05	2	6.56	2.2	7.22	3.00	9.84	127	85.3
203	8.0	Standard	310	4,500	466	6,750	2.25	314	12.36	2	6.56	2.2	7.22	3.00	9.84	120	80.6
		Fire rated		4,500		6,750		336	13.23	2.2	7.22	2.4	7.87	3.30	10.83	137	92.1



52

# **Customised Solutions** Guide

ContiTech can design hoses for many applications. Well-test hoses, hoses for riser tensioners, and preformed hoses are examples of hoses specially designed to meet specific customer requirements. The company's R&D and engineering activities are supported by the application of cutting edge software such as 3-D CAD, non-linear FEA, hydrodynamic analysis, fatigue analysis, in-house developed technical information systems and simulation facilities. All these capabilities ensure efficiency and the ability to perform quick custom design of special hoses.

ContiTech's research team and develop-

ment engineers are ready to take on and

that we can offer the most suitable flexible pipeline product for the given application.

deliver individual and special orders so

#### External Armour for moonpool protection

High impact resistant armour, a stainless steel helix embedded in an extra thick rubber cover.

#### Fire Resistance

Hoses can be ordered to withstand 704 °C fire for 30 min (Lloyd's OD 1000/499).

#### Sour Service

Hoses and couplings can be ordered to meet NACE MR 01-75 requirements.

#### Heat Traced

For extreme cold conditions, self regulating electric heating cable can be incorporated in the construction.

### Long Lengths

If the product you need is not included in this catalogue, please do not hesitate to contact a ContiTech sales representative.

#### Neck Reinforcement

Custom designed extra neck reinforcement, increasing local bend stiffness to several times of that of the hose body.

#### **Bending Stiffness**

Bend stiffness of the complete hose body can be increased by a factor of 10 or more. In some cases decrease of bend stiffness is also possible.

#### Location Collars

Vulcanized location collars for floaters, preventing slip of the floaters and abrasion on the hose cover.

### Small Bend Radius Vulcanizing the hose in a preformed shape, required by tight configurations Built-in Information technology option to supply hoses equipped with an info chip.

Newly developed splicing technology allows long length with continuous vulcanized liner, without potential leak path and heavy intermediate couplings.

# **Well-Test Lines** Selection Guide

#### Relevant standards

There is no recognised industry standard When deciding on the specification of for well-test hoses. However, in view of the your well-test hose, you should consider: typical operating conditions (5000 psi operating pressure or lower, with a very high variation in duration and frequency of operation), the API specifications for choke & kill hoses (API 16C) and production hoses (API 17K) should be considered. When choke and kill hoses are used for Choke & kill hoses are designed to withstand short-term high-pressure operation, mends that hoses used for well-test whilst production hoses must withstand continuous periods of operation with a high risk of rapid decompression. Such decompression can cause collapse of the hose liner as entrained gas, which has entered the hose carcass during the long periods of operation under pressure, permeates back into the hose cavity.

### Selection of flexible well-test lines

pressure rating, maximum expected flow rate (hose ID), hose length, exposure to exposed gas, duration and frequency of operation, fire safety, etc.

well-test application, ContiTech recomoperation should have a steel strip wound liner.

54

# **Flexible Riser Tensioner Lines** Selection Guide

#### Relevant standards

Tensioner hoses are a relatively new industry development and are not explicitly incorporated in the current API Standards. However the requirements of the hoses in service come into the scope of API 17K.

Riser tensioner hoses transport hydraulic fluid between gas filled accumulators and large hydraulic cylinders. Although they are not in direct contact with pressurized gas, the hydraulic fluid will invariably contain dissolved gas after some time, even in configurations with pistons between the gas and the liquid phase. There is a clear risk that this dissolved gas can cause collapse of the hose liner and ultimate failure following decompression.

### Selection of flexible riser tensioner lines

When deciding on the specification of your flexible riser tensioner line, you should consider: pressure rating, maximum expected flow rate (hose ID), hose length, exposure to exposed gas, fire safety, etc. Would there really be tensioner applications where pre-formed could be useful.

Since API Spec. 7K does not include gas exposure testing, and does not include hoses with 6" or 8" ID, it should not be considered for tensioner hose applications We recommend that you request a third party-witnessed gas decompression test report for the purchased hose type or for a similar hose with higher pressure rating.

For every riser tensioner hose application we recommend at least static configuration analysis.

ContiTech can offer pre-formed flexible lines to meet the tightest configuration.

ContiTech tensioner hoses are tested in conformity to API 17K

704 °C/30 min fire test of the riser tensioner hose to Lloyd's Register OD/1000/499 rev 1.

For further details regarding the requirements of riser tensioner hoses, please ask for our manufacturer's recommendations.



# **Preformed Bonded Flexible** Hoses Selection Guide

Flexible rubber hoses offer significant design and construction possibilities in the majority of offshore fluid transfer applications. However, fitting a conventional straight hose into a tight or confined space can result in routing compromise, or worse, incorrect installation of the hose leading to damage to the hose through over-bending, excessive angular loads etc.

The increasing specifications of today's drilling rigs and floating production facilities result in more and more equipment being packed in to the available space. Installation of a conventional straight rubber hose in a very restricted space can impose a considerable bending moment to keep the hose in the desired configuration.

Such extreme bending moments can in turn transfer high end loads to the coupling and the connected rigid piping and possibly other equipment. These end The tighter bending radius of ContiTech loads may have a detrimental effect on the service life of connected equipment, such as in-line swivels.

For such demanding applications, ContiTech has developed a range of preformed flexible hoses to make installation In addition, the effective flexible length of easier, reduce system loads and extend service life.

#### Preformed Choke and Kill Hoses to API Spec 16C

ContiTech preformed Choke and Kill hoses can be custom made to fit into tight spaces, such as frequently encountered on BOP stacks. The smaller bend radius relieves the loads on the hose, reducing the likelihood of any potential damage. In addition, the physical size of the BOP stack can be scaled down.

ContiTech preformed Choke and Kill hoses have DNV Design Approval according to API Spec 16C. They are available up to 15,000 psi working pressure and 3" internal diameter. Both temperature rating B (-20 °C to +100 °C) and U (-18 °C to +121 °C) are available.

#### Preformed Production Hoses to API Spec 17K

ContiTech offers a family of preformed bonded flexible hoses for continuous service in high pressure live crude oil and gas transport. The hoses draw on ContiTech's many years' experience in the development and manufacture of specialist high pressure hoses for the Oil & Gas industry and use the same basic construction as existing production hoses. They fully comply with API Spec. 17K, yet offer the advantage of considerably smaller bend radius.

preformed hoses offers new design opportunities and greatly reduces the loads, both on end couplings and also adjacent equipment. Ultimately, service life is increased.

the hose has been increased by means of a specially designed hose coupling which is 20% shorter than the conventional one. The bonding length however remains the same, thus retaining the bond strength.

#### Why use ContiTech Preformed Flexible Hose?

- Easy installation in confined spaces, such as surface production trees, subsea BOP stack
- Extended service life as a result of reduced risk of over-bending and reduced stress on hose body and on coupling
- Transfers less load to adjacent equipment or pipe work
- Can be supplied fully compliant with the strict requirements of API standards 17K and 16C
- New short coupling design increases flexible length with no reduction in bonding strength
- Open up new design opportunities to reduce the size and weight of oil field equipment





Gas lift and production jumpers in the crowded moonpool of a North Sea platform

Hoses can be made with simple 2-D curvature or in complex 3-D shapes.

# **Basic Coupling Selection** for High Pressure Hoses

	End Fitting Types	Description	Typical Applications	End Fitting Types
A		Standard API or GOST line pipe thread	Rotary and vibrator, Cementing, Decoking, Mud delivery hoses	
В		Flanges with API or GOST line pipe thread	Rotary and vibrator, Cementing, Decoking, Mud delivery hoses	
С		Hammer lug union with line pipe thread	Rotary and vibrator, Cementing, Decoking, Mud delivery hoses	
D		Hammer lug union male and nut sub	For every hose type for top-side application without gas service	
E		Hammer lug union female sub	For every hose type for top-side application without gas service	
F		Flanges API type 17SV	Choke and kill hoses, Flow lines for subsea application	
G		Flanges API Spec. 6A or ASME (ANSI) B 16.5	For every hose type	
н		Lapped joint flanges ASME (ANSI) B 16.5	For every hose type	
Other end fittings are	available on request.			

	End Fitting Types	Description	Typical Applications	End Fitting Types
1		API type 16BX integral hub connectors with in-house type clamp	For every hose type	
J		Techlok type hub	For every hose type	
К		Hammer lug union with line pipe thread	For every hose type	
L		Unibolt plain hub with nut	Rotary and vibrator	
М		Unibolt lug hub	Rotary and vibrator	
N		Swaged coupling Standard API or GOST line pipe thread	Rotary and vibrator, Cementing, Decoking, Mud delivery hoses	
0		Swaged coupling Hammer lug union male and nut sub	Rotary and vibrator, Cementing, Decoking, Mud delivery hoses	
Ρ		Special reducer for API or GOST line pipe thread	For every line pipe threaded hoses	
Other end fitting	is are available on request.			

## **Hose Management**

ContiTech's hose management teams provide services for both onshore and offshore installations, including training of the operator's personnel in the maintenance and care of hoses to maximize the life of hose assemblies. All inspectors are experienced hose fitters who have gone through extensive training and have a vast knowledge of the wide range of hose assemblies that are in use within the oil and gas industry. The hose management division provides inspection and testing, repairs, training, and inventory management.

#### Inspection & Testing

A complete range of technical analysis, inspection and testing services, covering high pressure testing, recertification, boroscope internal inspection, static and dynamic analysis.

### Training

The training program is based on over 45 years experience in the flexible hose business. All training conforms to Personnel Competency requirements of the UKOOA Guidelines (ContiTech played a major role in writing these guidelines). The program covers both theory and practical elements and on completion, client's engineers will be competent to carry out 3-monthly or first line inspection, will have knowledge regarding the effects of losing integrity of the liner or outer cover, correct installation, recognizing aspects such as over bending, non-flexible length criteria, etc.

#### Inventory Management

A comprehensive inventory management service for flexible hoses, which gives clients an accurate and reliable system of recording all flexible hoses to ensure correct specification, installation, maintenance and procurement. The surveys provide detailed information on all client flexible hoses and relate the information to UKOOA standards, thus ensuring suitable re-inspection and preventative maintenance schedules are initiated.



# **Technical**

As market-leading specialists in flexible fluid transfer systems, ContiTech Oil & Marine understands that, in order to obtain the very best operating performance from our products, it is essential to ensure the correct specification for a specific application, to handle them in the appropriate manner and maintain them adequately over the course of their service life.

To this end, we offer guidance on product selection and compatibility, hose handling, maintenance, and a full Hose Management service.

In addition, our sales personnel are available to answer any queries regarding your particular application.



## **Hose Design**

#### **Design Pressure**

The design pressure is a performance characteristics of the flexible hose warranting by the manufacturer. It is the maximum internal pressure it should be subjected to during its life and normally include operating pressure plus allowance result in permanent damage to the line. for surges. The rated working pressure ranges for high pressure hoses are defined as:

API 7K Rotary drilling and vibrator hoses: deflections. In general the dynamic 2"-6" ID: 1,500-7,500 psi

API 7K Cement hoses: 2"-4" ID: 10,000-15,000 psi

API 16C Choke and kill hoses: 2"-4" ID: 5.000-15.000 psi

API 17K and API RP 17B Bonded flexible pipes: 2"-14" ID: 7,500 psi

Other diameters and pressures are available on request.

#### Collapse Resistance

High pressure hoses are designed and produced in general topside application. Hoses subjected to subsea service shall be ordered and designed to withstand the differential external pressure for the operational depth without deforming the hose to a point where they can no longer function as the design specifies.

#### Excessive Axial Load

High pressure hoses should not be exposed to higher external axial load than its full fluid weight, when there is no internal pressure in the hose. Special design for excessive axial load ability is also available on request. Please ensure that such requirements are specified in order correctly.

### Bending

The minimum bend radius (MBR) is a performance characteristic of the hose and is specified by the manufacturer. The actual bend radius of the hose must never be smaller than the MBR, as it can The bend radius is dependant on the type of application. Dynamic application is a service in which the flexible pipe exposed to cyclically varying loads and bending radius is 1.5 times bigger than the minimum bend radius at storage (without dynamic loads). If the manufacturer gives only one value for the MBR, this is the operational minimum bend radius.

#### Torsions

Do not twist the hoses during installation or in use because it adversely affects the lifetime of the hose. Without consultation and agreement with the manufacturer torsion must remain below 1.0 per individual meter.

#### Gas Service

Only hoses ordered for defined gas service are suitable for handling gas. The number and velocity of the rapid decompressions in gas service should be limited to the possible minimum. It is necessary to define at order placement the exact service conditions or refer to the applicable standard.

Hoses for continuous H2S service can be ordered with the following parameters: up to 600 °C operating temperature, maximum partial pressure 0.1035 MPa (3,000 ppm at 5,000 psi) and up to 90 °C temperature, maximum partial pressure 0.0345 MPa (1,000 ppm at 5,000 psi) H2S content. Couplings for H2S service are produced in compliance with the standard NACE MR 0175/ISO 15156.



Production hoses for gas-containing medium can be ordered referring to the API Spec 17K/ISO 13628-10 and API RP 17B/ISO 13628-11. The qualification test for gas service is described in API RP 17B § 9.6.11.

Choke and kill hoses can be ordered in compliance with API Spec 16C. The qualification test is described in § 9.14.12. Alternatively, choke and kill hoses can be ordered in compliance with API Spec 16C Draft 07C, where the qualification test can be found in § 9.7.1.

The service conditions should be exactly defined during order placement.

Please ensure that the medium to be transported inside the hose meets the relevant standard.

effect of particular chemicals on the hoses, the manufacturer shall be consulted.

Special remarks: choke and kill lines are generally smooth bore hoses: they must never be used for production or welltest purposes. They can be applied for cementing, but the cement hose may never be used for choke and kill service.

At the delivery of oil the composition has to be defined, especially the aromatic content. Special care has to be taken; if there is any gas content in the oil, it shall be specified.

#### Temperature Limit

The operator shall specify the minimum and maximum operating temperature during order placement. The working conditions must comply with the defined temperature limits. Exceeding the temperature limits can harm the hose especially under dynamic conditions.

#### Fluid Velocity

There is a general rule for the determination of the max fluid velocity in a hose; if the fluid has no solid content:

- for liquid: 15 m/sec
- for gas: 20 m/sec
- for gaseous liquid: 8 m/sec

If the fluid has solid content or there is a corrosion effect, a detailed calculation has to be made based on the data of the actual use and the expected lifetime has to be taken into account. Please contact

#### Transported Fluid Considerations

In any event if there is any doubt as the

the manufacturer in case of any doubt.



## **Hose Design**

### Accidental Load

If the hose has been the subject of accidental load outside of the operating envelope (e.g. higher temperature, extreme flow velocity with abrasive fluid, collapse due to irregular outer force. elongation due to extreme axial load, etc.) Correct storage of hoses prolongs their it should be replaced.

#### Welding

No post welding is allowed on the couplings of the hose.

### Handling, Transportation & Installation

When a hose has to be lifted from a reel or packing crate, precautions should be taken to ensure that it will not be damaged by dragging it on the floor, against sharp edges of the handling equipment or by unacceptable torsional/bending loading. The flexible pipe should be securely fastened to its reel or packing crate. The end fittings require additional fastening by means of textile bands.

It is recommended to order the hoses with lifting collars and to use them for installation. Never lift the hose in a reverse be positioned with one edge towards the "U" shape using one band in the middle as this can cause damage.

If the hose was delivered in a crate it should be removed from the crate by hand, laid out in a straight line and then one end of the hose. If a catline is used to at each hose end. These lifting devices, remove the hose from its crate, the hook of the crane shall have a free rotation possibility. The use of a carrier to protect the hose in moving is a recommended practice.

If the hose is transported on a reel, a suitable let off equipment must be used at the installation. It is important during installation not to exceed the minimum bending radius, especially in the area close to the end fitting. Hoses should not be placed on a reel or in a crate so that the end fittings or other attachments induce unacceptable local loading in the hose structure. Weight should be accurately monitored during lifting not to overload the lifting equipment. At no time should the lifting collar be Secure fastenings should be designed for removed and the element C remained the final transported weight in a dynamic attached to the hose. It is essential that

environment. In general all hoses must be packed and handled according to the specifications of the relevant API /ISO standards.

#### Storage (in general)

life in service. The warehousing area shall be relatively cool, dark and free from dampness and mildew. The recommended handled correctly. temperature for storage is between -20 °C and +30 °C.

The end of fitting connections shall be pro- as recommended in API Spec 7K/ tected to prevent damage of the seal area, ISO 14693 and API Spec 7L. All drilling threads, and other areas susceptible to damage. The hoses shall be covered to prevent degradation by ultraviolet radiation.

#### Safety Clamp and Lifting Collar Fitting Instructions

Each hose is marked on the outer cover with an orange band at each end and text "ATTACH SAFETY CLAMP HERE" (note: an engraved metallic strap is used on hoses fitted with metallic outer guards). This band signifies the location for the safety clamps. The safety clamps should middle of the hose (i.e. away from the coupling). Once correctly positioned, the safety clamp should be fastened in position with the nuts and bolts.

The lifting equipment supplied with the lifted by means of a catline attached near hoses, includes a two 2-part lifting device called element C's, are supplied loose and not pre-assembled to the hose due to packaging limitations and safety reasons.

> Note: The element C is only provided with the hose when the customer specifically requests lifting collars to be provided. Otherwise, the hose is provided with nothing at the ends. The normal procedure for handling and lifting the hose involves securing the lifting collar around the element C. The hose is then lifted via attachment of the lifting line to the lifting collar. After installation, the lifting collar and element C can be left on the hose together or both removed if preferred.

the element C be removed from the hose after installation if the lifting collar is removed

It is essential that the hoses be handled in the correct manner during unpacking and installation. The lifting devices provided are designed, manufactured and tested to ensure the hoses are

In addition to the lifting collars, drilling hoses are often fitted with safety clamps hoses are clearly marked as to where not be confused with the lifting collar. Both are used for specific individual tasks.

The lifting collar is designed to facilitate lifting of the hose and is rated at 1.7 tonne or 2.5 tonne SWL depending on the hose size. It is located at the hose end and attached directly to the steel end coupling.





## **Rubber Properties**

		Abrasion	Low Temperature	Weather resistant	Ozone Resistant	Heat resistant	Oil resistant	Fuel resistant	Chemical resistant	Petroleum fluid resistant	Aromatic resistant
	Elastomer Material					Pro	perties				
CR	Chloroprene Rubber			++	++	++	+	+	+	+	
EPR/EPDM	Ethylene Propylene Polymer			++	++	++	-		+		
IR	Isoprene Rubber	++	++				-	-			
NBR	Nitrile Butadiene Rubber	++				+	++	++		++	+
NBR-PVC	NBR/Polyvinyle Chloride			++	+		++				
NR	Natural Rubber	++	++				-	-			
SBR	Styrene Butadiene Rubber	++		+			-	-			

+ excellent property

moderate property poor property

## **Solvent Information**

Aromatic Solvents	Benzene, Naphthalene, Cumene, P-Cume Xylene, Cresol, Styrene, Cyclohexane
Aliphatic Solvents	Propane, Butane, Pentane, Hexane, Hept
Halogenous Solvents	Chloroform, Dichlorobenzene, Dichloroe Bromid, Methylen Chloride, Benzyl Chlor Tetrachloride, Trichlorethylene, Carbon E Turpentine, Perchlorethylene, Dichloreth
Ketonic Solvents	Acetone, Methyl Ketone, Isobutyl Ketone Ketone, Methyl Isobutyl Ketone
Ester Solvents	Butyl Acetate, Methyl Acetate, Amyl Acet Isobutyl Acetate
Alcohols	Methyl, Ethyl, Butyl, Amyl, Isopropyl, Dec Diacetone, Ethyl Hexanol
Amines	Aniline, Ethylene Diamine, Diethanol Am Triethanolamine, Dimethylamine, Monoe

ene, Toluene,

ane, Dipentene

thylene, Methylen ride, Carbon Disulphide, ane

, Methyl Ethyl

tate,

yl, Isobutyl,

ine. thanolamine

# **Chemical Resistance Tables**

Material Maximum Temperature 100 Unless otherwise specified	°F (38°C)	NR or IR	SBR	CR	NBR	EPM/ EPDM	NBR/ PVC	<b>M</b> Ma
Acetic Acid, Dilute, 10	%	F	С	С	Х	A	Х	C
Glacial		С	Х	Х	Х	F	X	C
Anhydride		С	С	F	F	1	F	C
Acetone		A	A	F	Х	A	Х	CI
Acetylene		A	A	F	A	A	A	CI
Air	150 °F (65 °C)	А	Α	А	A	А	А	CI
Aluminium Chloride	150 °F (65 °C)	A	A	A	A	A	A	CI
Aluminium Fluoride	150 °F (65 °C)	А	Α	А	A	A	А	CI
Aluminium Sulfate	150 °F (65 °C)	A	A	A	A	A	A	CI
Alums	150 °F (65 °C)	A	A	A	A	A	A	CI
Ammonia Gas		А	А	А	А	А	А	Ci
Ammonium Chloride		A	A	A	A	A	A	C
Ammonium Hydroxid	e	С	F	F	F	A	С	C
Ammonium Nitrate		A	A	A	A	A	A	(6
Ammonium Phosphat Monobasic / Dibasic /	e Tribasic	A	A	A	A	A	A	C(6
Ammonium Sulphata								
					- <u>- v</u>			
					- <del></del>			
Apilino Dvos								Et
Acabalt		- F						Et
Aspriat	150%5 (C5%C)			F	F			Et
Barium Chionde	150 °F (65 °C)	A			A	A		Et
Barium Sulfide	150 °F (65 °C)	A			A	A	A	Et
Banum Sumue	150 F (65 C)				A	A		Et
Beer Current Linux		A			A	A		Fe
Beet Sugar Liquors					A	A		Fe
Benzenen / Benzoi		X	X		X	X	X	Fo
Benzine / Petroleum E Benzine / Petroleum N	Ether & Naphta	Х	×	C	F	Х	F	Fo Fu
Black Sulphate Liquor		А	А	А	А	А	А	Fu
Blast Funace Gas		С	С	А	С	С	С	G
Borax		А	А	А	А	А	А	
Boric Acid		Α	Α	А	А	А	Α	G
Bromine		Х	Х	Х	Х	Х	Х	G
Butane		Х	Х	F	А	Х	А	G
Butyl Acetate		С	Х	Х	Х	F	X	G
Butyl Alcohol / Butano	C	А	А	А	А	А	А	G
Calcium Bisulphate		С	С	А	A	F	А	Н
Calcium Chloride / Hyd	droxide	А	А	А	А	А	А	H
Calcium Hyperochlori	te	Х	Х	Х	Х	А	Х	
Caliche Liquors		А	А	А	А	А	А	
Cane Sugar Liquors		А	А	А	А	А	А	
Carobic Acid / Phenol		С	С	С	С	A	С	
Carbon Dioxide - Dry	& Wet	A	A	A	A	A	A	
Carbon Disulfide		Х	Х	Х	Х	Х	Х	
Carbon Monoxide	150°F	С	С	С	С	С	A	H

Carbon Tetrachionide         X	Material Maximum Temperature 100 °F (38 °C) Unless otherwise specified	NR or IR	SBR	CR	NBR	EPM/ EPDM	NBR/ PVC
Castor Oil         A         A         A         A         A         A         A           Cellosolve acetate         F         F         X         X         A         X           CrC12         X         X         A         A         F         A           China Wood Oil / Tung Oil         X         X         F         A         A         A           Chiorinated Solvents         X	Carbon Tetrachloride	Х	Х	Х	Х	Х	Х
Cellosolve acetate         F         F         X         X         A         X           CFC-12         X         X         A         A         F         A           China Wood Oil / Tung Oil         X         X         F         A         A         A           Chlorine Dry & Wet         X </td <td>Castor Oil</td> <td>A</td> <td>A</td> <td>A</td> <td>A</td> <td>A</td> <td>A</td>	Castor Oil	A	A	A	A	A	A
CFC-12         X         X         A         A         F         A           China Wood Oil / Tung Oil         X         X         F         A         A         A           Chiorine - Dry & Wet         X <td< td=""><td>Cellosolve acetate</td><td>F</td><td>F</td><td>Х</td><td>Х</td><td>A</td><td>Х</td></td<>	Cellosolve acetate	F	F	Х	Х	A	Х
China Wood Oil / Tung OilXXFAAAChlorine - Dry & WetXXXXXXXXChlorinated SolventsXXXXXXXChlorosulfonic AcidXXCCCICChromic AcidXXXCCXCCChromic AcidAAAFAFCoke Oven GasCCCCCCCCopper Chloride150 °FCAAAA(65 °C)150 °FCAAAACorn OilXCFACACrososel / Coal Tar / WoodXXFAACresosio / Cresylic AcidCXXCCCEthyl AcetateFXXXFXAEthyl ColluloseFFFFFFEthyl Colloride150 °F (65 °C)AAAAAEthyl ColloloseFFFAAAEthyl ColloloseFFFAAAEthyl ColloideAAAAAACortoride150 °F (65 °C)AAAAAFrinc Sulphate150 °F (65 °C)AAAAAFurdalehydeAA <td< td=""><td>CFC-12</td><td>X</td><td>X</td><td>A</td><td>A</td><td>F</td><td>A</td></td<>	CFC-12	X	X	A	A	F	A
Chlorine Dry & WetXXXXXXXChlorianted SolventsXXXXXXXChloroacetic AcidXCCCICChloroacetic AcidXXXXXXXChloroacetic AcidXXXXIXChromic AcidXXXXIXClitra AcidAAAFAFCoke Oven GasCCCCCCCopper Chloride150 "FCAAAACopper Sulphate150 "FCAAAACottonseed OllXCFACACreosole / Coal Tar / WoodXXFAXACreosols / Cresylic AcidCXXCCXEthyl AcetateFFFFFFEthyl ChlorideAAAAAAFerric Sulphate150 "F (65 "C)AAAAFormic AcidAAAAAAFerric Sulphate150 "F (65 "C)AAAAFormic AcidAAAAAAFormic AcidAAAAAAFormic AcidAAAAAAFormic AcidA <td>China Wood Oil / Tung Oil</td> <td>Х</td> <td>Х</td> <td>F</td> <td>A</td> <td>A</td> <td>A</td>	China Wood Oil / Tung Oil	Х	Х	F	A	A	A
Chlorinated Solvents         X         C         C         C         C         I         C           Chloroautfonic Acid         X         X         X         X         X         X         X         X         X         X         I         X           Chromic Acid         A         A         A         F         A         F         A         F           Cork oven Gas         C	Chlorine - Dry & Wet	Х	Х	Х	Х	Х	X
Chloroacetic AcidXCCCICChlorosulfonic AcidXXXXXXCChromic AcidXXXXXXIXChromic AcidAAAFAFChromic AcidAAAFAFCoke Oven GasCCCCCCCCopper Chloride150 °FCAFAACopper Sulphate150 °FCAAAACorn OllXCFACACattonseed OllXCFACACresoste / Coal Tar / WoodXXFAACresoste / Coal Tar / WoodXXFFXCEthyl AcetateFXXXFXAEthyl AcetateFFFFFFEthyl AcetateFFFFFFFEthyl ColloideAAAAAAAFerric Sulphate150 °F (65 °C)AAAAAFormic AcidAACAAAAFurdual ModeAAAAAAAFurturalXCCXCXCGasoline, Non Leaded/+MTBEXXXA </td <td>Chlorinated Solvents</td> <td>Х</td> <td>X</td> <td>Х</td> <td>Х</td> <td>Х</td> <td>X</td>	Chlorinated Solvents	Х	X	Х	Х	Х	X
Chlorosulfonic AcidXXCCXXCChromic AcidXXXXXXIXCitric AcidAAAFAFCoke Oven GasCCCCCCCCopper Chloride150°FCAFAA(65°C)CAFAAACorn OilXCFACACreosole / Coal Tar / WoodXXFAXCCCCCXCEthyl AcetateFXXCFXEthyl AcetateFXXXFEthyl AcetateFFFFFEthyl ChlorideAAAAAFuric Sulphate150°F (65°C)AAAAAAAAAAAAAAAAAAAAAAAAAEthyl AcetateTFFFFEthyl AcoholAAAAAAAAAAAFuric Sulphate150°F (65°C)AAAAFurric Sulphate150°F (65°C)AAAAFurric Sulphate150°F (65°C)AAAAFurric	Chloroacetic Acid	Х	C	С	С		С
Chromic AcidXXXXXXIXCitric AcidAAAFAFAFCoke Oven GasCCCCCCCCCopper Chloride150°FCAFAAA(65°C)150°FCAAAAACorpoper Sulphate150°FCAAAACorn OilXCFACACattonseed OilXCFACACreosols / Cresylic AcidCXXCXCEthersCCCCXCCEthyl AcetateFFFFFFEthyl ChlorideAAAAAAFrinc Sulphate150°F (65°C)AAAAFerric Sulphate150°F (65°C)AAAAFerric Sulphate150°F (65°C)AAAAFurdicideACFAAAFurdicideACCXXCSulphate150°F (65°C)AAAAAFurtical Sulphate150°F (65°C)AAAAFurtical SulphateACCXXCGasolineNon Leaded /+MTBEXXXAA<	Chlorosulfonic Acid	Х	Х	С	С	Х	С
Citric AcidAAAFAFCoke Oven GasCCCCCCCCopper Chloride150 °FCAFAAACopper Sulphate150 °FCAAAAACopper Sulphate150 °FCAAAAACopper Sulphate150 °FCAAAAACorn OilXCFACACornosted / Coal Tar / WoodXXFAXACresols / Cresylic AcidCXXCXCEthyl AcetateFXXFXXEthyl AcetateFFFFFEthyl ColludoseFFFFFEthyl ColludoseFFFFFEthyl Colloride150 °F (65 °C)AAAAFormic AcidAACAAAFormic AcidAAAAAAFurturalXCCXXAGasoline,Non Leaded /+MTBEXXXAAGasoline,Non Leaded /+MTBEXXXAAGasoline,Non Leaded /+MTBEXXXAAGueseAAAAAAGlucoseA <td< td=""><td>Chromic Acid</td><td>Х</td><td>Х</td><td>Х</td><td>Х</td><td> </td><td>Х</td></td<>	Chromic Acid	Х	Х	Х	Х		Х
Coke Oven GasCCCCCCCCCCCCCCCCCAA<	Citric Acid	A	A	A	F	A	F
Copper Chloride (65 °C)150 °FCAFAAACopper Sulphate (65 °C)150 °FCAAAACorn OllXCFACACottonseed OllXCFACACresoste / Coal Tar / WoodXXFAXACresoste / Coal Tar / WoodXXFAXCEthyl AcetateFXXXFXCEthyl AcetateFXXXFXXEthyl AcetateFFFFFFEthyl AcetateFFFFFFEthyl ChlorideAAAAAAFerric Sulphate150 °F (65 °C)AAAAAFormic AcidAAAAAAFurgle AACCXXAAFurgle DilXXXAAAFurgle AAAAAAAAGasoline, Non Leaded /+MTBEXX	Coke Oven Gas	С	С	С	С	С	С
Copper Sulphate (65 °C)150 °FCAAAACorn OliXCFACACottonseed OliXCFACACreosole / Coal Tar / WoodXXFAXACreosole / Coal Tar / WoodXXFAXACreosole / Cresylic AcidCXXCXCEthersCCCCXCCEthyl AcetateFXXXFXEthyl AlcoholAAAAAAEthyl CollorideFFFFFFEthyl ChlorideAFFXAAFerric Chloride150 °F (65 °C)AAAAAFormic AcidAACAAAAFuel OliXXAAAAAFurdralXCCXCXAGasoline.Non Leaded /+MTBEXXXAAAHi Test+MTBEXXXAAAAGlucoseAAAAAAAGasoline.Non Leaded /+MTBEXXXAAHi Test+MTBEXXXAAAAHigreerbahate Ester AlvylXXX	Copper Chloride 150 °F (65 °C)	С	A	F	A	A	A
Corn OliXCFACACottonseed OilXXCFACACreosole / Coal Tar / WoodXXFAXACreosols / Cresylic AcidCXXCXCEthersCCCCXXFEthyl AcetateFXXXFXEthyl AcetateFFFFFFEthyl AcetateFFFFFFEthyl CelluloseFFFFFFEthylene GlycolAAAAAAFerric Chloride150°F (65°C)AAAAAFormic AcidAACAAAAFuel OliXXXAAAAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAHerc134AFXXXAAHerc134AFXXAAAHydrohnet Ester ArylXXXXCXPhosphate Ester BlendsXXXX <td< td=""><td>Copper Sulphate 150 °F (65 °C)</td><td>C</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td></td<>	Copper Sulphate 150 °F (65 °C)	C	A	A	A	A	A
Cottonseed OilXCFACACreosols / Cresylic AcidCXXFAXACreosols / Cresylic AcidCXXCXCCEthersCCCCXCCEthyl AcetateFXXXFXEthyl AcetateFFFFFFEthyl AcetateFFFFFFEthyl ColluloseFFFFFFEthyl ChlorideAAAAAAFerric Chloride150 °F (65 °C)AAAAAFormic AcidAACAAAAFuel OilXXAAAAAFurdralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGelatinAAAAAAGiucesAAAAAAGreen Sulphate LiquorAAAAAHydraulic fluidsTXXAAPhosphate Ester ArylXXXXXCXPhosphate Ester BlendsXXXCXAHydrobromic AcidAAAAAAGasoline,Non Leaded	Corn Oil	Х	С	F	А	С	A
Creosole / Coal Tar / WoodXXFAXACreosols / Cresylic AcidCXXCXCEthersCCCCXCEthyl AcetateFXXXFXEthyl AcetateFXXXFXEthyl AcetateFFFFFFEthyl CollorideAAAAAAEthyl Colloride150°F (65°C)AAAAAFerric Chloride150°F (65°C)AAAAAFormaldehydeAACAAAFuel OilXXAAAAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGasoline,Non Leaded /+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAHi Test-+MTBEXXXAAAHydraulic fluidsTTTAAAPhosphate LiquorAAAAAAPhosphate Ester ArylXXXXXCXPhosphate Ester ArylXXXXCXXPhosphate Ester BlendsX<	Cottonseed Oil	Х	C	F	A	С	A
Creosols / Cresylic AcidCXXCXCEthersCCCCXCEthyl AcetateFFXXFXEthyl AlcoholAAAAAAEthyl AlcoholAAAAAAEthyl CelluloseFFFFFFEthyl ChlorideAAAAAAFerric Chloride150°F (65°C)AAAAFormic AcidAACAAAFormic AcidAACFAFFuel OilXXAAAAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAHFC-134AFXAAAAPhosphate Ester AlkylXXXXXCXPhosphate Ester BlendsXXXXCXHydrobromic AcidCXCCXCHydrobromic AcidCXCCXCHydrobromic AcidAAAAAAH<	Creosote / Coal Tar / Wood	Х	Х	F	А	Х	A
EthersCCCCCCXXCEthyl AcetateFXXXFXEthyl AcetateFFFFFFEthyl AlcoholAAAAAAEthyl CelluloseFFFFFFEthyl Chloride150°F (65°C)AAAAAFerric Sulphate150°F (65°C)AAAAAFormaldehydeAACAAAFormic AcidAAACFFFuel OllXXAAAAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAHi Test-+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAPetroleumXXXAAAHigtraulic fluidsTTXXAAPhosphate Ester ArylXXXXXCXPhosphate Ester BlendsXXXXCXX<	Creosols / Cresylic Acid	С	Х	Х	С	Х	C
Ethyl AcetateFXXXFXEthyl AlcoholAAAAAAEthyl CelluloseFFFFFFEthyl ChlorideAAAAAAEthylene GlycolAAAAAAFerric Chloride150 °F (65 °C)AAAAAFormic AcidAAAAAAFuel OliXXAAAAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAHi Test-+MTBEXXXAAGlucoseAAAAAHiFC-134AFXAAAPetroleumXXAAAPhosphate Ester AlkylXXXXXPhosphate Ester BlendsXXXXCWater-GlycolAAAAAAAAAAAAAAAAAGasoline,Non Leaded/+MTBEXXXAGlucoseAAAAAAAAAAA <td>Ethers</td> <td>C</td> <td>C</td> <td>С</td> <td>С</td> <td>Х</td> <td>C</td>	Ethers	C	C	С	С	Х	C
Ethyl AlcoholAAAAAAEthyl CelluloseFFFFFFEthyl ChlorideAFFXAXEthylene GlycolAAAAAAFerric Chloride150°F (65°C)AAAAAFormaldehydeAACAAAFormaldehydeAACFAFFuel OllXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAHi Test-+MTBEXXXAAAGlucoseAAAAAAGlucoseAAAAAAHiFC-134AFXAAAAHydraulic fluidsTXXAAAPhosphate Ester AlkylXXXXXXCWater-GlycolAAAAAAAHydrobromic AcidCXXXXCXPhosphate Ester BlendsXXXXCXHydrobromic AcidCXCCXCXHydrobromic AcidAAAAAAHydrochlorid AcidAAA </td <td>Ethyl Acetate</td> <td>F</td> <td>Х</td> <td>Х</td> <td>Х</td> <td>F</td> <td>Х</td>	Ethyl Acetate	F	Х	Х	Х	F	Х
Ethyl CelluloseFFFFFFFEthyl ChlorideAAFFXAXEthylene GlycolAAAAAAFerric Chloride150°F (65°C)AAAAAFerric Sulphate150°F (65°C)AAAAAFormaldehydeAACAAAFormic AcidAACFAFFuel OilXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAHi Test-+MTBEXXXAAAGelatinAAAAAAGlucoseAAAAAAGlucoseAAAAAAHFC-134AFXAAAAPhosphate LiquorAAAAAAPhosphate Ester AlkylXXXXXCXPhosphate Ester AlkylXXXXCXCWater-GlycolAAAAAAHydrobromic AcidCXCCXCXHydrochlorid AcidAAAAAAHydrochlorid AcidAA	Ethyl Alcohol	A	A	A	A	A	A
Ethyl ChlorideAFFXAXEthylene GlycolAAAAAAAFerric Chloride150°F (65°C)AAAAAAFerric Sulphate150°F (65°C)AAAAAAFormaldehydeAACAAAAFormic AcidAACFAFFuel OilXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAAGelatinAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlycerine / GlycerolAAAAAHFC-134AFXAAAAPhosphate Ester AlkylXXXXCXPhosphate Ester BlendsXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCXCHydrochlorid AcidAAAAAAAAAAAA <td< td=""><td>Ethyl Cellulose</td><td>F</td><td>F</td><td>F</td><td>F</td><td>F</td><td>F</td></td<>	Ethyl Cellulose	F	F	F	F	F	F
Ethylene GlycolAAAAAAFerric Chloride150°F (65°C)AAAAAAFerric Sulphate150°F (65°C)AAAAAAAFormaldehydeAACAAAAAFormic AcidAACFAFFuel OllXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAXGasoline,Non Leaded /+MTBEXXXAAGlucoseAAAAAAGlucoseAAAAAAGlueFFAAAAGlucoseAAAAAAGlucoseAAAAAAGlueFFXAAAGreen Sulphate LiquorAAAAAHFC-134AFXXXXXPhosphate Ester AlkylXXXXXCWater-GlycolAAAAAAHydrobromic AcidCXCCXCHydrochlorid AcidAAAAAAAAAAAAA <td>Ethyl Chloride</td> <td>A</td> <td>F</td> <td>F</td> <td>Х</td> <td>A</td> <td>Х</td>	Ethyl Chloride	A	F	F	Х	A	Х
Ferric Chloride150°F (65°C)AAAAAAFerric Sulphate150°F (65°C)AAAAAAFormaldehydeAACAAAFormic AcidAACFAAFuel OilXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAXHi Test+MTBEXXXAAAGelatinAAAAAAGlucoseAAAAAAGlueFFAAAAGlucoseAAAAAAGlueFXXAAAGlueFFAAAAGreen Sulphate LiquorAAAAAHFC-134AFXAAAAPhosphate Ester AlkylXXXXCXPhosphate Ester AlkylXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCXCHydrochlorid AcidAXXXCX	Ethylene Glycol	A	A	A	A	A	A
Ferric Sulphate150°F (65°C)AAAAAAFormaldehydeAACAAAFormic AcidAACFAFFuel OilXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAXGasoline,Non Leaded /+MTBEXXXAXGasoline,Non Leaded /+MTBEXXXAXGelatinAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlucoseAAAAAAGlycerine / GlycerolAAAAAHydraulic fluidsTXXAAAPhosphate Ester AlkylXXXXXXXPhosphate Ester BlendsXXXXCXXSilicate EsterXXCCXCXHydrobromic AcidCXCCA <t< td=""><td>Ferric Chloride 150 °F (65 °C)</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td><td>A</td></t<>	Ferric Chloride 150 °F (65 °C)	A	A	A	A	A	A
FormaldehydeAACAAAFormic AcidAAACFAFFuel OilXXAAXAAXFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAXAHi Test-+MTBEXXXAXAGelatinAAAAAAGlucoseAAAAAAGlueFFAAAAGreen Sulphate LiquorAAAAAHYdraulic fluidsTTXXXAPhosphate Ester AlkylXXXXXCXPhosphate Ester AlkylXXXXCXXSilicate EsterXXXCXCXHydrobromic AcidCXCCAAAAAAAAAAHydrochlorid AcidAAAAAAHitrophorenic AcidCXCCXCAAAAAAAAHydrochlorid AcidAAAAAAAAAAAAAAAAAAA </td <td>Ferric Sulphate 150 °F (65 °C)</td> <td>A</td> <td>A</td> <td>A</td> <td>Α</td> <td>A</td> <td>A</td>	Ferric Sulphate 150 °F (65 °C)	A	A	A	Α	A	A
Formic AcidAACFAFFuel OilXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAXAHi Test-+MTBEXXXAXAGelatinAAAAAAGlucoseAAAAAAGlueFFAAAAGlueFFAAAAGreen Sulphate LiquorAAAAAHFC-134AFXXAAAPetroleumXXAAAAPhosphate Ester AlkylXXXXCXPhosphate Ester BlendsXXXCXCWater-GlycolAAAAAAHydrobromic AcidCXCCXCHydrochlorid AcidAAAAAAAAAAAAAAHydrochlorid AcidAAAAAAAAAAAAAACXCXCXCXAAAAAAAAAAAA	Formaldehyde	A	A	С	A	A	A
Fuel OilXXAAXAFurfuralXCCXCXGasoline,Non Leaded /+MTBEXXXAXAHi Test+MTBEXXXAXAGelatinAAAAAAGlucoseAAAAAAGlueFFAAAAGlueGeen Sulphate LiquorAAAAAHYdraulic fluidsTTTAAAPetroleumXXXCXXCPhosphate Ester AlkylXXXXCXPhosphate Ester BlendsXXXCXCWater-GlycolAAAAAAHydrobromic AcidCXCCXCHydrochlorid AcidAAAAAAAAAAAAAAHydrochlorid AcidAAAAAA	Formic Acid	A	A	С	F	A	F
FurfuralXCCXCXGasoline,Non Leaded / +MTBEXXXAXAHi Test-+MTBEXXXAXAGelatinAAAAAAGlucoseAAAAAAGlueFFAAAAGlueGlucoseAAAAAGlueFFAAAAGlycerine / GlycerolAAAAAGreen Sulphate LiquorAAAAAHFC-134AFXAAAPetroleumXXAAAPhosphate Ester AlkylXXXXCXPhosphate Ester AlkylXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCXC	Fuel Oil	Х	X	A	A	X	A
Gasoline,Non Leaded / +MTBEXXXXAXAHi Test-+MTBEXXXXAXAGelatinAAAAAAAGlucoseAAAAAAAGlueFFAAAAGlueFFAAAAGlycerine / GlycerolAAAAAGreen Sulphate LiquorAAAAAHFC-134AFXAAAPetroleumXXAAAPhosphate Ester AlkylXXCXXPhosphate Ester AlkylXXXXCXSilicate EsterXXXCXCXWater-GlycolAAAAAAHydrobromic AcidCXCCXCHydrochlorid AcidAXXXCX	Furfural	Х	С	С	Х	С	Х
Hi Test+MTBEXXXAXAGelatinAAAAAAAGlucoseAAAAAAAGlucoseAAAAAAAGlueFFAAAAAGlycerine / GlycerolAAAAAAGreen Sulphate LiquorAAAAAAHFC-134AFXAAAAHydraulic fluidsFXAAAAPhosphate Ester AlkylXXCXAXPhosphate Ester AlkylXXXXCXPhosphate Ester BlendsXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCACHydrochlorid AcidAXXXCX	Gasoline, Non Leaded / +MTBE	X	X	X	A	X	A
GelatinAAAAAAGlucoseAAAAAAGlueFFAAAAGlycerine / GlycerolAAAAAAGreen Sulphate LiquorAAAAAAHFC-134AFXAAAAPetroleumXXAAAAPhosphate Ester AlkylXXCXXPhosphate Ester ArylXXXCXSilicate EsterXXCCXWater-GlycolAAAAAHydrobromic AcidCXCCACXCXCXCKater-GlycolAAAAAHydrochlorid AcidAXXXCX	Hi Test-+MTBE	X		X	A	X	A
GlucoseAAAAAAGlueFFAAAAGlycerine / GlycerolAAAAAAAAAAAAGreen Sulphate LiquorAAAAAHFC-134AFXAAAAAAAAAPetroleumXXAAXPhosphate Ester AlkylXXCXPhosphate Ester ArylXXXCXSilicate EsterXXCCXWater-GlycolAAAAAHydrobromic AcidCXCCXHydrochlorid AcidAXXXCX	Gelatin	A	A	A	A	A	A
GlueFFAAAGlycerine / GlycerolAAAAAGreen Sulphate LiquorAAAAAHFC-134AFXAAAAHydraulic fluidsFXAAAAPetroleumXXAAXAPhosphate Ester AlkylXXCXAPhosphate Ester AlkylXXXCXPhosphate Ester BlendsXXXCXSilicate EsterXXCCXWater-GlycolAAAAAHydrobromic AcidCXCCXHydrochlorid AcidAXXXCX	Glucose	A	A	A	A	A	A
Glycerine / GlycerolAAAAAAGreen Sulphate LiquorAAAAAAHFC-134AFXAAAAHydraulic fluidsFXAAAAPetroleumXXAAXAPhosphate Ester AlkylXXCXAXPhosphate Ester AlkylXXXCXPhosphate Ester BlendsXXXCXSilicate EsterXXCCXWater-GlycolAAAAAHydrobromic AcidCXCCXHydrochlorid AcidAXXXCX	Glue	F	F	A	A	A	A
Green Sulphate LiquorAAAAAAHFC-134AFXAAAAHydraulic fluidsFXAAAAPetroleumXXAAXAPhosphate Ester AlkylXXCXAXPhosphate Ester AlkylXXXCXPhosphate Ester AlkylXXXCXPhosphate Ester BlendsXXXCXSilicate EsterXXCCXWater-GlycolAAAAAHydrobromic AcidCXCCXHydrochlorid AcidAXXXCX	Glycerine / Glycerol	A		A	A	A	A
HFC-134AFXAAAHydraulic fluids	Green Sulphate Liquor	A	A	A	A	A	A
Hydraulic fluidsXXAAXAPetroleumXXXAAXAPhosphate Ester AlkylXXCXAXPhosphate Ester ArylXXXXCXPhosphate Ester BlendsXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrochlorid AcidCXCCX	HFC-134A	F	×	A	A	A	A
PetroleumXXAAXAPhosphate Ester AlkylXXCXAXPhosphate Ester ArylXXXXCXPhosphate Ester BlendsXXXXCXSilicate EsterXXXCXCWater-GlycolAAAAAHydrobromic AcidCXCCAHydrochlorid AcidAXXXCX	Hydraulic fluids				_		
Phosphate Ester AlkylXXCXAXPhosphate Ester ArylXXXXCXPhosphate Ester BlendsXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCACHydrochlorid AcidAXXCX	Petroleum	X	X	A	A	X	A
Phosphate Ester ArylXXXXCXPhosphate Ester BlendsXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCACHydrochlorid AcidAXXCX	Phosphate Ester Alkyl	X	X	С	Х	A	X
Phosphate Ester BlendsXXXXCXSilicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCACHydrochlorid AcidAXXCX	Phosphate Ester Aryl	X	X	Х	Х	С	X
Silicate EsterXXCCXCWater-GlycolAAAAAAHydrobromic AcidCXCCACHydrochlorid AcidAXXCX	Phosphate Ester Blends	X	X	Х	Х	C	X
Water-Glycol     A     A     A     A     A       Hydrobromic Acid     C     X     C     C     A       Hydrochlorid Acid     A     X     X     C     X	Silicate Ester	X	×	C	С	×	C
Hydrobromic AcidCXCCACHydrochlorid AcidAXXXCX	Water-Glycol	A	A	A	A	A	A
Hydrochlorid Acid A X X X C X	Hydrobromic Acid	С	X	С	С	A	С
	Hydrochlorid Acid	A	X	X	Х	С	X

Material Maximum Temperature 100 °F (38 °C) Unless otherwise specified	NR or IR	SBR	CR	NBR	EPM/ EPDM	NBR/ PVC	Material Maximum Temperature 100 °F (38 °C) Unless otherwise specified	NR or IR	SBR	CR	NBR	EPM/ EPDM	NBR/ PVC
Hydrocyanic Acid	F	F	С	F	С	F	Potassium Hydroxide	F	С	С	С	A	С
Hydrofluoric Acid	Х	X	Х	Х	С	Х	Potassium Sulphate	A	A	A	A	A	A
Hydrofluosilicic Acid	A	F	F	F	A	F	Propane	Х	Х	F	A	Х	А
Hydrogen Gas	F	F	A	A	A	Α	Sewage	С	С	F	A	С	А
Hydrogen Peroxide	Х	X	С	С	С	С	Soap Solutions	A	A	F	A	A	A
Hydrogen Sulfide - Dry & Wet	С	C	F	С	A	С	Soda Ash / Sodium Carbonate	A	A	A	A	A	A
Kerosene	Х	Х	F	A	Х	А	Sodium Bicarbonate / Banking Soda	A	A	A	A	A	A
Lacquers	X	X	Х	Х	Х	Х	Sodium Bisulphate / Chloride / Cyanide	A	A	A	A	A	A
Lacquers Solvents	Х	X	Х	Х	Х	Х	Sodium Hydroxide	F	F	С	С	A	С
Lactic Acid	С	С	С	С	С	С	Sodium Hypochlorite	X	Х	Х	Х	A	Х
Linseed Oil	С	Х	F	A	A	A	Sodium Metaphosphate	A	A	С	A	A	A
Lubricating Oil - Crude & Refined	Х	X	F	A	Х	A	Sodium Nitrate / Perborate / Peroxide	С	C	С	С	A	С
Magnesium Chloride 150 °F (65 °C)	A	A	A	A	A	A	Sodium Phosphate						
Magnesium Hydroxide 150°F (65°C)	A	F	F	F	A	F	Monobasic / Dibasic / Tribasic	A	F	С	F	A	F
Magnesium Sulphate 150°F (65°C)	A	A	A	A	A	A	Sodium Silicate / Sulphate / Sulphide	A	A	A	A	A	A
Mercuric Chloride	F	F	С	F	А	F	Sodium Thiosulfate "Hypo"	A	A	A	A	A	A
Mercury	A	A	A	A	A	A	Soybean Oil	X	С	F	A	A	A
Methyl Alcohol / Methanol	A	A	A	A	A	A	Stannic Chloride	A	Α	A	Α	F	A
Methyl Chloride	С	C	С	С	С	С	Steam 450 °F (230 °C)	C	C	C	C	F	C
Methyl Ethyl Ketone	Х	X	Х	Х	A	Х	Stearic Acid	X			F	F	F
Methyl Isopropyl Ketone	Х	Х	Х	Х	С	Х	Sulphur	F	F	A	F	A	F
MTBE	С	C	F	F	A	F	Sulphur Chloride				C		C
Milk	Х	С	F	A	Х	A	Sulphur Dioxide - Dry	C	C	C	C	C	С
Mineral Oils	С	С	A	A	Х	A	Sulphur Trioxide - Dry	X	C	C	C	C	С
Natural Gas	С	С	A	A	Х	A	Sulphuric Acid, 10%	Α		A	Α	Α	A
Nickel Chloride 150°F (65°C)	A	A	A	A	A	A	11 %-75 %	C	C	C	C	C	С
Nickel Sulphate 150 °F (65 °C)	A	Α	Α	A	А	Α	76%-95%/Fuming	X	X	X	Х	X	Х
Nitric Acid - Crude	Х	X	Х	Х	Х	Х	Sulphurous Acid	C	C	C	C	C	C
Diluted 10 %	Х	Х	С	Х	С	Х	Tannic Acid	A	C	A	C	A	C
Concentrated 70 %	Х	Х	Х	Х	Х	Х	Tar	X	X	С	С	X	С
Nitrobenzene	Х	X	Х	Х	Х	Х	Tartaric Acid	Α	C	C	C	F	C
Oleic Acid	Х	F	С	F	F	F	Toluene / Toluol						X
Oleum Spirits	X	С	С	С		С	Trichloroethylene						X
Oxalic Acid	F	C	F	F	A	F	Turpentine						F
Oxygen	F	C	A	С	A	C	Vinegar	C	C	С	C	A	С
Palmitic Acid	Х	F	A	A	F	A	Water / Acid Mine						
Perchlorethylene	A	A	A	C	X	C	Water - Fresh & Distilled	A	A	C	A	A	A
Petroleum Oils & Crude 200°F (95°C)	X	X	F	A	X	A	Whiskey & Wine	А	А	А	С	А	С
Phosphoric Acid - crude - pure 45%	A	С	С	С	С	С	Xylene / Xylol	Х	Х	Х	С	Х	С
Picric Acid - Molten	С	C	С	С		С	Zinc Chloride	С	С	С	С	A	С
Water Solution	A	C	F	F	1	F	Zinc Sulphate	А	А	А	A	A	А
Potassium Chloride	A	A	A	A	A	A							
Potassium Cvanide			A	A	Α								

A Good Resistance Usually suitable for service F Fair Resistance The chemical has some deteriorative effects, but the elastomer is still adequate for moderate service

C Depends on Condition Moderate service may be possible if chemical exposure is limited or infrequent

## X Not Recommended Unsuitable for service

I Insufficient Information Not enough data available at the time of publication to determine rating

# **Conversion Charts**

Linear			Pressur	е	
From	То	Multiply by	From	То	Mult
in.	mm	25.4	Bar	psi	
in.	cm	2.54	Atm	psi	
in.	m	0.0254	N/m <sup>2</sup>	psi	0.0
ft.	mm	304.8	Pascal	psi	0.0
ft.	cm	30.48	Kilopascal	psi	C
ft.	m	0.3048	Megapascal	psi	
yd.	mm	914.4	In. water	psi	C
yd.	cm	91.44	In. mercury	psi	
yd.		0.9144	Torr	psi	0
mm	in.	0.03937	Kg/cm <sup>2</sup>	psi	
mm	ft.	0.00328	Kg/m <sup>2</sup>	psi	0
mm	yd.	0.00109	Dynes/cm <sup>2</sup>	psi	0.0
cm	in.	0.3937	Lb/ft <sup>2</sup>	psi	0
cm	ft.	0.0328	psi	Bar	0
cm	yd.	0.01094	psi	Atm	0.
m	in.	39.37	psi	N/m <sup>2</sup>	
m	ft.	3.281	psi	Pascal	
m	yd.	1.094	psi	Kilopascal	
			psi	Megapascal	0.0
			psi	In. water	
			psi	In. mercury	
Temper	ature		psi	Torr	
			psi	Kg/cm <sup>2</sup>	0
From	То	Multiply by	psi	Kg/m <sup>2</sup>	7
°F	°C	(°F-32)/1.8	psi	Dynes/cm <sup>2</sup>	6
°C	°F	(°C × 1.8) + 32	psi	Lb/ft <sup>2</sup>	144

Multiply by	То	From	tiply by
16387.06	mm <sup>3</sup>	in³	14.504
16.39	cm <sup>3</sup>	in³	14.7
0.000016	m <sup>3</sup>	in³	000145
0.00058	ft <sup>3</sup>	in³	000145
0.554	fl. oz.	in³	0.14504
0.01639	liter	in³	145.04
0.00433	gal	in³	0.03613
0.03613	lb. water	in³	0.4912
1728	in <sup>3</sup>	ft3	0.01934
0.02832	m <sup>3</sup>	ft3	14.223
7.481	gal	ft3	0.00142
62.42	lb. water	ft3	000014
28.316	liter	ft3	0.00694
0.000061	in <sup>3</sup>	mm <sup>3</sup>	0.06895
0.06102	in <sup>3</sup>	cm3	0.06804
61023.4	in <sup>3</sup>	m <sup>3</sup>	6894.8
35.314	ft <sup>3</sup>	m <sup>3</sup>	6894.8
231	in <sup>3</sup>	gal	6.895
0.1337	ft <sup>3</sup>	gal	006895
3.785	liter	gal	27.684
61.02	in <sup>3</sup>	liter	2.036
0.0351	ft <sup>3</sup>	liter	51.715
33.815	fl. oz.	liter	0.07031
0.2642	gal	liter	703.067
1.805	in <sup>3</sup>	fl. oz.	58947.6
0.0296	liter	fl. oz.	4.09222
27.68	in <sup>3</sup>	lb. water	
0.01602	ft <sup>3</sup>	lb. water	
0.1198	gal	lb. water	

Volume

## Weight

From	То	Multiply by
OZ.	lb.	0.0625
OZ.	g	28.35
OZ.	kg	0.02835
lb.	OZ.	16
lb.	g	453.6
lb.	kg	0.4536
g	OZ.	0.03274
g	lb.	0.0022
g	kg	0.001
kg	OZ.	35.274
kg	lb.	2.205

## Velocity

From	То	Multiply by
in./sec	cm/sec	2.54
in./min	cm/min	2.54
ft./sec	m/sec	0.3048
ft./min	m/min	0.3048
mi./hr	km/hr	1.609
km/hr	mi./hr	0.6214

## Pressure Chart

kPa	bar	psi	kPa	bar	psi
5,515.84	55.16	800	6.8948	0.06895	1
5,688.21	56.88375	825	68.948	0.6895	10
5,860.58	58.6075	850	137.896	1.379	20
6,032.95	60.33125	875	206.844	2.0685	30
6,205.32	62.055	900	275.792	2.758	40
6,377.69	63.77875	925	344.74	3.4475	50
6,550.06	65.5025	950	413.688	4.137	60
6,722.43	67.22625	975	482.636	4.8265	70
6,894.80	68.95	1,000	551.584	5.516	80
7,584.28	75.845	1,100	620.532	6.2055	90
8,273.76	82.74	1,200	689.48	6.895	100
8,963.24	89.635	1,300	861.85	8.61875	125
9,652.72	96.53	1,400	1,034.22	10.3425	150
10,342.20	103.425	1,500	1,206.59	12.06625	175
11,031.68	110.32	1,600	1,378.96	13.79	200
11,721.16	117.215	1,700	1,551.33	15.51375	225
12,410.64	124.11	1,800	1,723.70	17.2375	250
13,100.12	131.005	1,900	1,896.07	18.96125	275
13,789.60	137.9	2,000	2,068.44	20.685	300
17,237.00	172.375	2,500	2,240.81	22.40875	325
20,684.40	206.85	3,000	2,413.18	24.1325	350
24,131.80	241.325	3,500	2,585.55	25.85625	375
27,579.20	275.8	4,000	2,757.92	27.58	400
31,026.60	310.275	4,500	2,930.29	29.30375	425
34,4740	344.75	5,000	3,102.66	31.0275	450
37,921.40	379.225	5,500	3,275.03	32.75125	475
41,368.80	413.7	6,000	3,447.40	34.475	500
44,816.20	448.175	6,500	3,619.77	36.19875	525
48,263.60	482.65	7,000	3,792.14	37.9225	550
51,711.00	517.125	7,500	3,964.51	39.64625	575
55,158.40	551.6	8,000	4,136.88	41.37	600
58,605.80	586.075	8,500	4,309.25	43.09375	625
62,053.20	620.55	9,000	4,481.62	44.8175	650
65,500.60	655.025	9,500	4,653.99	46.54125	675
68,948.00	689.5	10,000	4,826.36	48.265	700
103,422.00	1034.25	15,000	4,998.73	49.98875	725
137,896.00	1379	20,000	5,171.10	51.7125	750
275,792.00	2758	40,000	5,343.47	53.43625	775

Quality

# **Purchasing Questionnaire**

#### ContiTech is committed to quality and environmental responsibilities.

The company works closely with customers and approved suppliers to ensure the highest quality standards. The quality system is in accordance with EN ISO 9001:2000 and the system's performance is regularly checked and audited by independent agencies.

ContiTech's products, such as high pressure mud hoses, choke and kill hoses, and flexible production lines, fully comply with the latest edition of API Spec. 7K, API Spec. 16C, API RP 17B and API Spec 17K standards. ContiTech is the only company in the world certified for all relevant API standards of high pressure rubber hoses and flexible pipes.

The environmental thinking of the management and the employees is reflected by their daily activities and documented by the ISO 14001 environmental management system applied in the company.









Hose description	Application		
Standards to meet	Standards		
Dimensions	Inside Diameter		
	Overall Length		
End fittings	End A		
	Coupling material		
	End B		
	Coupling Material		
Working pressure			
Working temperature			
Service media	Media content		_
	H2S service	YES	
	H2S content		
	Gas service	YES	
Service conditions	Vacuum service	YES	
	Fire resistance	YES	
	3/3 external protection	YES	
Safety & lifting equipment	Safety clamp	YES	
	Lifting collar	YES	
	Element C	YES	

Additional comments



NO NO NO NO NO NO NO NO

# ContiTech

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Market segment Fluid Technology

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### www.contitech.de

The ContiTech division of the Continental Corporation is a development partner and original equipment supplier to numerous industries for high-quality functional parts, components and systems. With its know-how in rubber and plastics technology, ContiTech contributes significantly to industrial progress and mobility that is safe, comfortable and eco-friendly.

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Learn more about the contents of this brochure.

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