

## High Pressure Flexible Lines

Drilling Applications



## High Performance Flexible Hoses

Continental is a global leader in the design, manufacture and supply of flexible lines. We have over 50 years of experience in the field of bonded flexible pipes, and we are continuously striving to extend the performance boundaries of our products in order to meet the ever more challenging demands of our global customers.

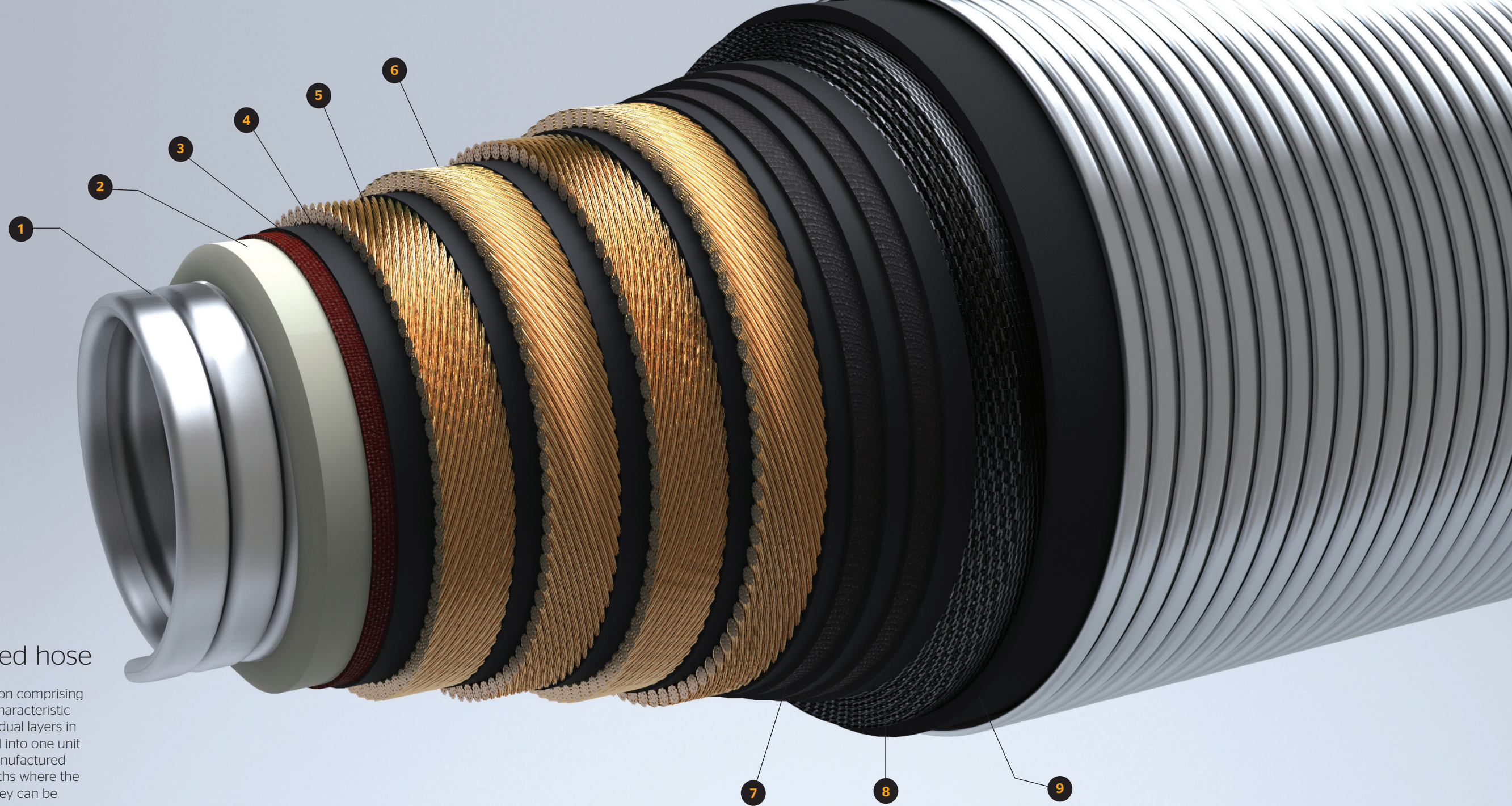
All of our high performance hose products are certified to all relevant API standards for high pressure rubber hoses and flexible pipes – API 7K, API 16C and API 17K.

Using top quality raw materials, sophisticated process control and the very latest R&D systems and processes, our expert teams are able to draw on a comprehensive knowledge base, ranging from material science, mathematics, and physics to advanced engineering and work together with our customers to offer viable solutions for the most demanding applications.

Our hose designs assure long service life and outstanding operational and environmental safety.

## Contents

General Construction of a High Pressure Hose .....	4
Engineering Services .....	6
High Pressure Hoses for Drilling & Well Service .....	8
Bonded & Swaged Couplings .....	9
Drilling Hose Application Guide .....	10
FSL Levels .....	12
General Information About Our Drilling Products .....	13
Rotary & Vibrator Hose	
with bonded coupling .....	14
with swaged coupling .....	15
for high temperature & sour service .....	16
Tauro™ Cool for Arctic drilling .....	17
Continental Prospector™ Mud & Cementing Hose .....	18
Underbalanced Drilling Hose .....	19
Managed Pressure Drilling Hose	
Mud return line .....	20
Bleed off line .....	21
Cementing Hose .....	22
Flexible Choke & Kill Lines	
<b>NEW</b> with Tauroflon™ liner (266°F/130°C) .....	23
with PA liner (266°F/130°C) .....	24
with PA liner (212°F/100°C) .....	25
Subsea LMRP Hoses for Choke & Kill	
and Hydraulic Conduit Application .....	26
Mud Booster Hose .....	27
Hydraulic Conduit Hose .....	28
Blowout Preventer Control Hose Fireshield 5000 .....	29
Well Test Production Hose .....	30
Offshore Well Stimulation / Intervention / Acidizing Hose .....	31
<b>NEW</b> Onshore Well Stimulation Hose .....	32
Burner/Flare Boom Hose .....	33
Riser Tensioner Hose .....	34
Drill String Compensator Hose .....	35
Chemical Compatibility Tables .....	36
Hose Management Services .....	37
Quality .....	38
Continental Hose Products .....	39



## General construction of a high pressure bonded hose

The flexible hose lines are a bonded construction comprising steel and elastomeric materials. The principal characteristic of bonded construction is the build-up of individual layers in the flexible hose wall, which are then combined into one unit through vulcanization. Hose assemblies are manufactured either as a single bonded unit to specified lengths where the couplings are an integral part of the hose, or they can be mechanically assembled to the cured hose.

### 1 Stainless steel interlock stripwound tube

Protects the polymer lining from mechanical damage, prevents blistering in case of high pressure gas service and decompression with vacuum service, supports the wall of the flexible hose and facilitates pigging. The material can be AISI 316L or 254 SMO grade stainless steel, depending on the conveyed medium.

### 2 Polymer lining

Fluid barrier of the flexible line. Protects the hose construction from corrosive and abrasive effects of the conveyed medium. The thickness of lining depends on the internal pressure, the inside diameter and the conveyed medium. The lining material is selected to withstand chemical and heat effects of crude oil, seawater, gases, hydraulic fluid or whatever substance is conveyed through the hose.

### 3 Textile plies

To distribute the forces of internal pressure.

### 4 Elastomeric cushion plies

To ensure adhesive bonding between different plies.

### 5 High strength steel cable reinforcements

These are the most important load-bearing elements, as they determine internal pressure resistance. The cables are either zinc or brass coated to provide exceptional corrosion resistance.

### 6 Gas leading plies

To allow diffused gases to migrate to venting points.

### 7 Fire resistant plies

Protects the hose in case of exposure to flame at 1300°F (704°C) for at least 30 minutes.

### 8 Elastomeric cover

Protects the flexible hose line from impact, abrasion, weather, seawater, oil, etc.

### 9 Outer stainless steel stripwound protection

Protects the hose against external mechanical damage, material AISI 316L.

### 10 Stiffening spiral (not shown in the figure)

To protect the hose against collapse under axial pulling force and/or as a result of external pressure. Prevents kinking even in sharp bends.

## Tailor-made Solutions engineering services

### FINITE ELEMENT ANALYSIS

Our in-house design software has been improved and refined over many years and is used in conjunction with the most recent finite element analysis (FEA) systems to handle even the most difficult technical demands.

Different FEA solutions allow you to adapt the configuration of your system to a given application and to ensure safe and reliable operation under all conditions:

#### › Static, quasi-static hose length analysis

Determines the optimal hose length while allowing for any surrounding objects that may affect the hose routing.

#### › Hydrodynamic analysis

Used to simulate the dynamic behavior of a given configuration when exposed to the expected environmental conditions.

#### › Survival analysis

Based on the hydrodynamic analysis, the suitability of the hose components is checked against the harshest environmental conditions.

#### › Fatigue analysis

Based on the hydrodynamic analysis, the minimum design life of a hose can be calculated by accumulating the fatigue of the load bearing metal components.

By their nature, bonded flexible pipes offer a high degree of design freedom: their properties can be designed and adjusted according to the needs of your system - based on the results of the FEA.



### Built-in neck reinforcement

All hoses with bonded couplings are built with neck reinforcement, but in strong dynamic configurations a custom designed extra neck reinforcement might be necessary to avoid overbending of the hose. The local bending stiffness can be increased to several times of that of the hose body.

### Variable bending stiffness

Upon request, the bending stiffness of the complete hose body can be increased by a factor of 10 or more. In some cases a reduction in bend stiffness is also possible.

### Swivels

If the hose is subject to severe twist (e.g. in the moonpool), swivels may be required.

### Heat traced hoses

For extreme cold conditions, or if fluid might freeze in the hose, a self-regulating electric heating cable can be incorporated into the hose body.

### Tauro™ Fit Preformed hoses

The increasing specifications of today's drilling rigs and floating production facilities result in more and more equipment being packed into 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 loads may have a detrimental effect on the service life of connected equipment, such as in-line swivels. For such demanding applications, Continental has developed a range of pre-formed flexible hoses to make installation easier, reduce system loads and extend service life. For more information, see Flexible Tauro™Fit Choke & Kill Line for subsea BOPs and Tauro™Fit Preformed Production Line.

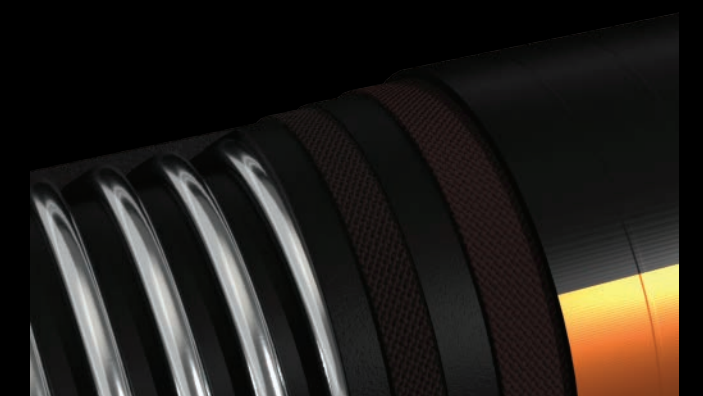
### EXTERNAL PROTECTION

Several types of external protection are available depending on the application, such as:



#### 1 Outer wrap

Fully interlocking steel outer wrap is the most widely used external protection, able to absorb impacts and friction and thus providing additional mechanical protection to the hose body.



#### 3 Heavy duty moonpool protection

A steel helix fully embedded in rubber, recommended for the harshest conditions. Exceptional impact absorption and abrasion resistance.



#### 2 Bumpers

If the exact location of impact between the hose and its surroundings is known (e.g. in the moonpool), a plastic bumper is advised to absorb the impact energy.



#### 4 Plastic spiral

Helps to protect the hose cover when dragging on the rig floor during handling and installation. Also suitable for static applications.

# High Pressure Hoses For Drilling & Well Service Applications



## Bonded & Swaged Couplings

Our bonded couplings and built-in bend stiffeners are the strongest parts of hoses produced by Continental. Our company was the first to patent a coupling where the bonding strength between the coupling and hose body increases in proportion to the internal pressure.

The patented bonded couplings, developed in-house, the special hose construction with integral neck reinforcement and the fire-resistant cover layer are all unique features that contribute to a high degree of chemical resistance, fatigue resistance, heat insulation and result in a light compact hose construction with excellent flexibility and low bending radius.

Continental also supplies Rotary and Vibrator hoses with swaged couplings in accordance with API Spec. 7K (FSL1 - FSL2) on demand delivery.

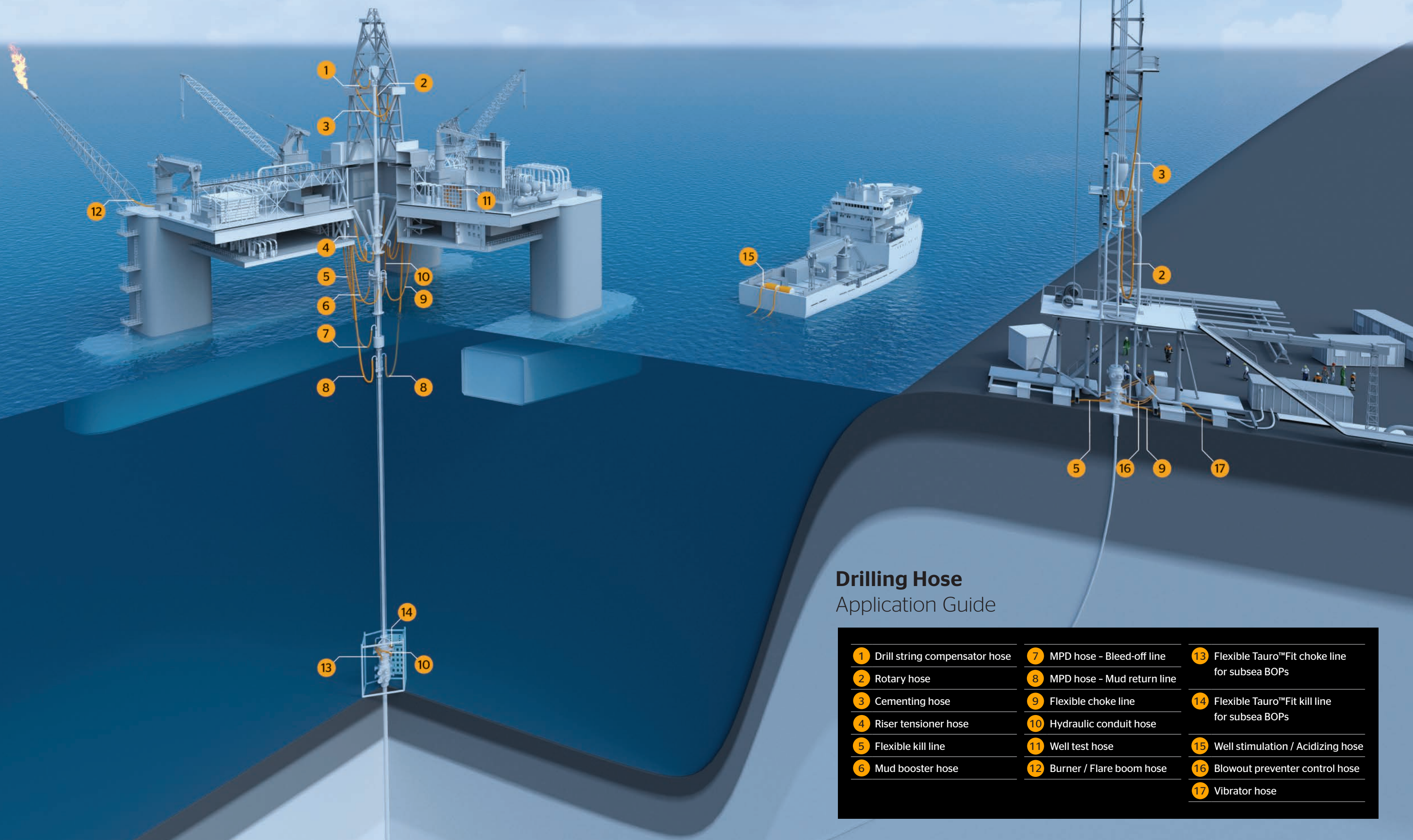
### SWAGED



### BONDED



TITLE NAME	BONDED COUPLING	SWAGED COUPLING
<b>Technology</b>	All reinforcement cables are adhesively bonded to the coupling body	Only outer reinforcement layer, (and in some cases the innermost reinforcement layer) is directly in contact with the coupling
<b>Bore type</b>	Full bore, no flow restriction	Never full bore, there is always a flow restriction. In Choke Lines it may lead to dangerous erosion in case of a kick
<b>Sealing mechanism</b>	Chemical and mechanical bond between metal and rubber	Based on pressure buildup when the coupling is mounted, subject to stress relaxation at elevated temperatures
<b>Field experience</b>	50+ years	Limited, relatively new technology
<b>Temperature limits</b>	Suitable for high fluid temperatures	Limited fluid temperatures
<b>Pressure limits</b>	Meets high pressure rating requirements, up to 20,000 psi (1,380 bar) working pressure	Limited pressure capability, max. 10,000 psi (690 bar) working pressure
<b>High frequency pulsations</b>	Always suitable	Not suitable, unless properly designed
<b>Coupling rigid length</b>	Shorter coupling	Longer coupling
<b>Neck reinforcement</b>	Built-in neck reinforcement, with the ability to customize	Does not have neck reinforcement, which might lead to shortened service life
<b>Lead time</b>	Generally longer lead time, but patented Continental post assembling technology available in dedicated workshops significantly cuts lead time	Generally shorter lead time
<b>Service life</b>	Generally longer service life	Generally shorter service life



### Drilling Hose Application Guide

- |                                 |                              |  |
|---------------------------------|------------------------------|--|
| 1 Drill string compensator hose | 7 MPD hose - Bleed-off line  | 13 Flexible Tauro™Fit choke line for subsea BOPs |
| 2 Rotary hose                   | 8 MPD hose - Mud return line | 14 Flexible Tauro™Fit kill line for subsea BOPs  |
| 3 Cementing hose                | 9 Flexible choke line        | 15 Well stimulation / Acidizing hose             |
| 4 Riser tensioner hose          | 10 Hydraulic conduit hose    | 16 Blowout preventer control hose                |
| 5 Flexible kill line            | 11 Well test hose            | 17 Vibrator hose                                 |
| 6 Mud booster hose              | 12 Burner / Flare boom hose  |  |

## FSL Levels for High Pressure Mud & Cement Hoses and Flexible Choke & Kill Lines

The API standards 7K (mud and cement hoses) and API 16C (flexible choke and kill lines) define Flexible Specification Levels (or FSL). For the safety of drilling operations, it is imperative for the purchaser and operator to choose the proper FSL level.

### FSL LEVELS FOR MUD AND CEMENT HOSES IN API 7K

FSL 0 – for cement hoses only

To meet the FSL 0 requirements, a deformation test under pressure, and ambient and low temperature bending tests need to be performed. No pressure pulsation prototype test is required.

FSL 1 – for rotary, vibrator, and jumper hoses in normal service conditions

To meet the FSL 1 requirements, in addition to FSL 0 prototype tests a low frequency pressure pulsation prototype test is required - 1,000 pressure cycles (max. 5 min/cycle) at maximum operating temperature.

FSL 2 – for rotary, vibrator, and jumper hoses that are likely to see high frequency pressure pulsations in operation, as in directional drilling

To meet the FSL 2 requirements, in addition to FSL 0 prototype tests a high frequency pressure pulsation prototype test is required - 10,000 pressure cycles (max. 10 sec/cycle) at maximum operating temperature.

For further information on API 7K FSL levels and prototype tests, see API 7K 6th Edition Section 9.7.3.2. and 9.7.10.

### FSL LEVELS FOR FLEXIBLE CHOKE AND KILL LINES IN API 16C

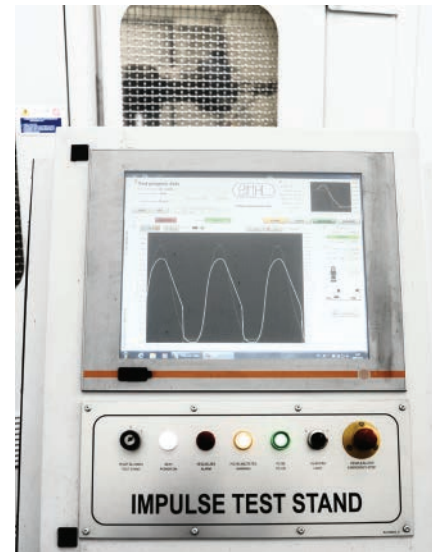
FSL 0 – To meet FSL 0 requirements, a hydrostatic internal pressure test, a bending flexibility test, a burst test and an exposure test shall be passed. In the gas exposure test, 3 rapid decompressions are followed by internal diameter check, and a hold period of 7 days at design pressure and maximum operating temperature. Then after 30 days hold at design pressure and ambient temperature, the hose performance is validated by a 30 min pressure test at 1.5 times the design pressure.

FSL 1 – To meet FSL 1 requirements, in addition to FSL 0 prototype tests a fire test is necessary at design pressure and 1,300°F (704°C) external temperature for 30 min without leakage.

FSL 2 – To meet FSL 2 requirements, in addition to FSL 0 prototype tests a high temperature exposure test must be performed. The test reproduces a high temperature kick situation with the hose heated slowly to 350°F (177°C) internally at design pressure, where it has to survive one hour without leakage. After that the internal temperature is raised until failure of the line.

FSL 3 – To meet FSL 3 requirements, in addition to FSL 2 prototype tests a fire test is necessary at design pressure and 1,300°F (704°C) external temperature for 30 min without leakage.

For further information on API 16C FSL levels and prototype tests, see API 16C 2nd Edition Section 10.8.10. and B.12.



## General Information about products for drilling applications

### HOSE BODY FEATURES

- Multiple liner materials are available for different applications: NBR, NBR/CR, Taurocool, HNBR, PA and Tauroflon™. For chemical compatibility comparison see page 46.
- Minimum Bending Radius (MBR) is with reference to the center-line of the hose
- Maximum recommended flow velocities:
  - 20 m/s for dry gas
  - 15 m/s for liquid
  - 8 m/s for gaseous liquid
- Fire rating available at 1,300 °F (704°C) for 30 minutes on request for all hoses with bonded couplings. This complies with both Lloyd's Register OD 1,000/499 and API 16C requirements
- Additional external protection available upon request
- Prod. Length Tolerance: Up to 6.4 m hose length +/- 64 mm  
Above 6.4 m hose length +/- 1 %

### SAFETY CLAMP AND LIFTING COLLAR FITTING INSTRUCTIONS

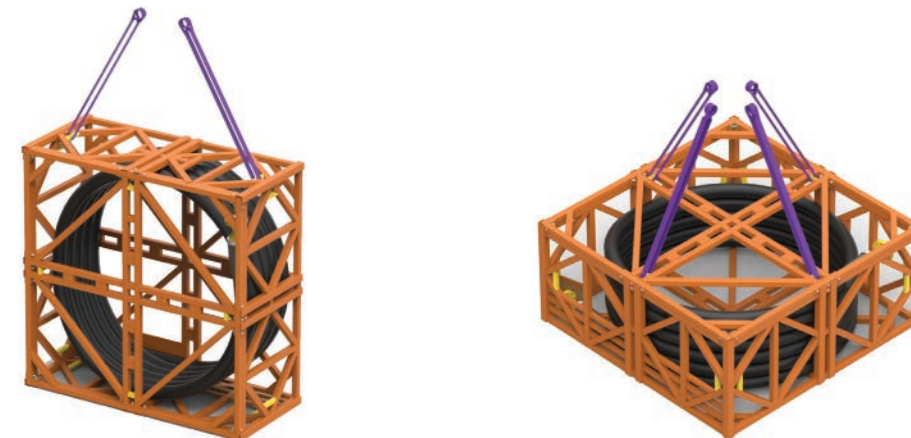
Each hose has a location mark on the outer cover at each end with the text "ATTACH SAFETY CLAMP HERE". This band indicates the location for the safety clamps.

The lifting equipment supplied with the hoses includes a two-part lifting device at each hose end. These lifting devices are called element C's. The normal procedure for handling and lifting the hose involves securing the lifting collar around the element C.

### TRANSPORTATION

Method of packaging depending on the diameter and length of hose can be as follows:

- Short units: in straight position, on pallets or in wooden crates
- Long units: reeled onto drum, on pallets or in wooden crates



Note: For more detailed information please request a copy of the Continental User Guide for High Pressure Flexible Lines.

### GENERAL END TERMINATION TYPES



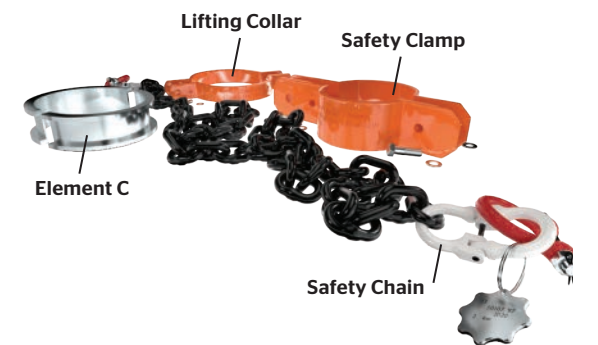
Flange Type



Hub Type



Hammer Lug Union Type



## Rotary & Vibrator Hose bonded coupling

### STANDARD

API Spec. 7K FSL 1 - FSL 2

### CONSTRUCTION

#### Bore type

full flow, smooth bore

#### Liner material

NBR or NBR/CR

#### Operating temperature

-13°F to 212°F (-25°C to 100°C) for NBR

-22°F to 180°F (-30°C to 82°C) for NBR/CR

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- › See Underbalanced Drilling Hoses for Gas, Air and Foam drilling
- › See Managed Pressure Drilling Hoses for Managed Pressure Drilling (MPD) and Dual Gradient Drilling (DGD)



### TECHNICAL DATA

Inside Diameter		Rated Working Pressure		Test Pressure		API Grade	Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi			mm	in.	m	ft.	kg/m	lb./ft.
51	2.0	276	4,000	414	6,000	C	2.5	104	4.1	0.7	2.3	15	10
		345	5,000	517	7,500								
64	2.5	276	4,000	414	6,000	C	2.5	111	4.4	1.7	5.6	15	10
		345	5,000	517	7,500								
		517	7,500	776	11,250	E	2.5	136	5.4	0.8	2.6	31	21
76	3.0	276	4,000	414	6,000	C	2.5	126	5.0	0.8	2.6	18	12
		345	5,000	517	7,500								
		517	7,500	776	11,250	E	2.5	148	5.8	1.1	3.6	34	23
89	3.5	276	4,000	414	6,000	C	2.5	140	5.5	0.9	3.0	21	14
		345	5,000	517	7,500								
		517	7,500	776	11,250	E	2.5	162	6.4	1.3	4.3	39	26
102	4.0	276	4,000	414	6,000	C	2.5	144	5.7	0.9	3.0	21	14
		345	5,000	517	7,500								
		517	7,500	776	11,250	E	2.5	174	6.9	1.4	4.6	42	28
127	5.0	345	5,000	517	7,500	D	2.5	213	8.4	1.5	4.9	67	45
		517	7,500	776	11,250								
152	6.0	345	5,000	517	7,500	D	2.25	224	8.8	1.7	5.6	57	38*
		517	7,500	776	11,250								

\* API 7K not labeled

## Rotary & Vibrator Hose swaged coupling

### STANDARD

API 7K Spec. FSL 1 - FSL 2

### CONSTRUCTION

#### Bore type

not full flow, smooth bore

#### Liner material

NBR or CR

#### Operating temperature

FSL 1 -22°F to 180°F (-30°C to 82°C)

FSL 2 -22°F to 212°F (-30°C to 100°C)

#### Max. available length

40m (131ft)

### FEATURES & COMMENTS

- › Generally shorter lead time
- › Swaged end fittings are protected with an all-weather coating to Continental standards



### TECHNICAL DATA

Inside Diameter		Rated Working Pressure		Test Pressure		API Grade	Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi			mm	in.	m	ft.	kg/m	lb./ft.
76	3.0	345	5,000	517	7,500	D	2.5	126	5.0	0.8	2.6	18	12
		89	3.5	345	5,000								
101.6	4.0	517	7,500	776	11,250	E	2.5	138	5.4	8	2.6	28	18
		345	5,000	517	7,500								
152	6.0	517	7,500	776	11,250	E	2.5	150	5.96	0.9	3.0	30	21



## Rotary & Vibrator Hose for high temperature drilling & sour service

### STANDARD

API Spec. 7K FSL 1 - FSL 2

### CONSTRUCTION

#### Bore type

full flow, smooth bore

#### Liner material

H<sub>2</sub>S resistant HNBR

#### Operating temperature

-22°F to 250°F (-30°C to 121°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- › Designed for high working temperature and sour service mud delivery
- › The hose is capable of handling 20% H<sub>2</sub>S (Hydrogen Sulphide) for 1 hour at 250°F (121°C) at rated working pressure
- › See Underbalanced Drilling Hoses for Gas, Air and Foam drilling
- › See Managed Pressure Drilling Hoses for Managed Pressure Drilling (MPD) and Dual Gradient Drilling (DGD)



### TECHNICAL DATA

Inside Diameter		Rated Working Pressure		Test Pressure		API Grade	Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi			WP	mm	in.	m	ft.	kg/m
51	2.0	276	4,000	414	6,000	C	2.5	104	4.1	0.7	2.3	15	10
		345	5,000	517	7,500	D	2.5	104	4.1	0.7	2.3	15	10
64	2.5	276	4,000	414	6,000	C	2.5	111	4.4	1.7	5.6	15	10
		345	5,000	517	7,500	D	2.5	111	4.4	0.7	2.3	15	10
		517	7,500	776	11,250	E	2.5	136	5.4	0.8	2.6	31	21
76	3.0	276	4,000	414	6,000	C	2.5	126	5.0	0.8	2.6	18	12
		345	5,000	517	7,500	D	2.5	126	5.0	0.8	2.6	18	12
		517	7,500	776	11,250	E	2.5	148	5.8	1.1	3.6	34	23
89	3.5	276	4,000	414	6,000	C	2.5	140	5.5	0.9	3.0	21	14
		345	5,000	517	7,500	D	2.5	140	5.5	0.9	3.0	21	14
		517	7,500	776	11,250	E	2.5	162	6.4	1.3	4.3	39	26
102	4.0	276	4,000	414	6,000	C	2.5	153	6.0	1.0	3.3	24	16
		345	5,000	517	7,500	D	2.5	153	6.0	1.0	3.3	24	16
		517	7,500	776	11,250	E	2.5	174	6.9	1.4	4.6	42	28
127	5.0	345	5,000	517	7,500	D	2.5	213	8.4	1.5	4.9	67	45
		517	7,500	776	11,250	E	2.5	213	8.4	1.5	4.9	67	45
152	6.0	345	5,000	517	7,500	D	2.25	224	8.8	1.7	5.6	57	38*
		517	7,500	776	11,250	E	2.25	248	9.8	1.8	5.9	93	63*

\* API 7K not labeled

## Tauro™ Cool Rotary & Vibrator Hose for Arctic drilling

### STANDARD

API Spec. 7K FSL 1 - FSL 2

### CONSTRUCTION

#### Bore type

full flow, smooth bore

#### Liner material

Tauro™Cool

#### Operating temperature

-40°F to 180°F (-40°C to 82°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- › Designed for extreme low working temperature mud delivery
- › Additional heat tracing is available on request
- › Larger sizes are available without API label
- › See Underbalanced Drilling Hoses for Gas, Air and Foam drilling
- › See Managed Pressure Drilling Hoses for Managed Pressure Drilling (MPD) and Dual Gradient Drilling (DGD)
- › Also available for 10,000 PSI (690 bar) cementing application with Taurus design.



### TECHNICAL DATA

Inside Diameter		Rated Working Pressure		Test Pressure		API Grade	Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi			WP	mm	in.	m	ft.	kg/m
51	2.0	276	4,000	414	6,000	C	2.5	103	4.1	0.7	2.3	14	9
		345	5,000	517	7,500	D	2.5	103	4.1	0.7	2.3	14	9
64	2.5	276	4,000	414	6,000	C	2.5	111	4.4	1.7	5.6	15	10
		345	5,000	517	7,500	D	2.5	111	4.4	0.7	2.3	15	10
		517	7,500	776	11,250	E	2.5	136	5.4	0.8	2.6	31	21
76	3.0	276	4,000	414	6,000	C	2.5	126	5.0	0.8	2.6	18	12
		345	5,000	517	7,500	D	2.5	126	5.0	0.8	2.6	18	12
		517	7,500	776	11,250	E	2.5	148	5.8	1.1	3.6	34	23
89	3.5	276	4,000	414	6,000	C	2.5	140	5.5	0.9	3.0	21	14
		345	5,000	517	7,500	D	2.5	140	5.5	0.9	3.0	21	14
		517	7,500	776	11,250	E	2.5	162	6.4	1.3	4.3	39	26
102	4.0	276	4,000	414	6,000	C	2.5	150	5.9	1.0	3.3	22	15
		345	5,000	517	7,500	D	2.5	150	5.9	1.0	3.3	22	15
		517	7,500	776	11,250	E	2.5	174	6.9	1.4	4.6	42	28

## Continental Prospector™ mud & cementing hose

**STANDARD**

API Spec. 7K FSL 1 and FSL 0

**CONSTRUCTION**

**Bore type**

not full flow, smooth bore

**Liner material**

Neoprene

**Operating temperature**

API 7K FSL1 -22°F to 180°F (-30°C to 82°C)

API 7K FSL0 -22°F to 250°F (-30°C to 121°C)

**Reinforcement**

Six alternating layers of spiraled high-tensile steel wire

**Cover**

Black Neoprene

**Branding**

Continental Prospector™

**Max. available length**

60m (200 ft)

**FEATURES & COMMENTS**

- › Designed for extreme low and high working temperature mud delivery
- › Additional heat tracing is available on request
- › Bite-to-Wire one-piece crimp couplings provide maximum coupling retention on 6-spiral hoses. Serrations penetrate the cover with a powerful bite into the wire reinforcement, resulting in even hose compression.
- › Couplings integrated with Hammer Lug Union Fig. 1502

**TECHNICAL DATA** Rotary & Vibration Application / Cementing Application

Inside Diameter		Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi	WP	mm	in.	m	ft.	kg/m	lb./ft.
51	2.0	350	5,000	517	7,500	2.5	71.1	2.8	0.7	2.0	7.3	4.93
51	2.0	690	10,000	1,035	15,000	2.5	71.1	2.8	0.7	2.0	7.3	4.93

**Supplied with Crimped Couplings**

2" 7K CRIMP x2" FIG 1502 MALE WITH NUT

2" 7K CRIMP x2" FIG 1502 FEMALE



## Underbalanced Drilling Hose

**STANDARD**

API Spec. 7K FSL 1

**CONSTRUCTION**

**Bore type**

full flow, smooth bore

**Liner material**

H<sub>2</sub>S resistant PA

**Operating temperature**

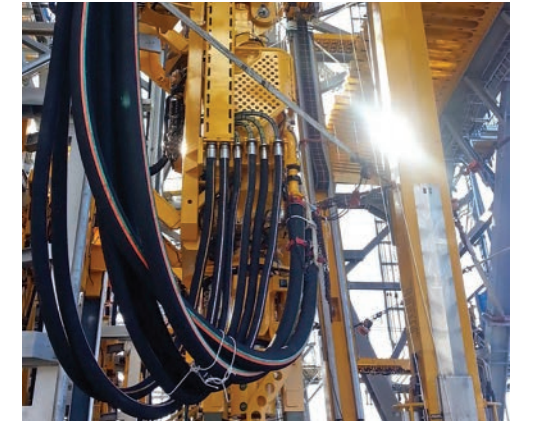
-4°F to 180°F (-20°C to 82°C)

**Max. available length**

60m (200 ft)

**FEATURES & COMMENTS**

- › Used for gas, air and foam drilling
- › Further constructions are available on request
- › Not suitable for operations where the hoses are likely to be exposed to well bore effluents. For such applications, see Managed Pressure Drilling Hoses



**TECHNICAL DATA**

Inside Diameter		Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi	WP	mm	in.	m	ft.	kg/m	lb./ft.
54	2.0	276	4,000	414	6,000	2.5	94	3.7	0.9	3.0	10	7
		345	5,000	517	7,500	2.5	94	3.7	0.9	3.0	10	7
64	2.5	276	4,000	414	6,000	2.5	108	4.3	1.0	3.3	13	9
		345	5,000	517	7,500	2.5	110	4.3	1.0	3.3	15	10
		517	7,500	776	11,250	2.5	124	4.9	1.2	3.9	22	15*
76	3.0	276	4,000	414	6,000	2.5	122	4.8	1.2	3.9	15	10
		345	5,000	517	7,500	2.5	124	4.9	1.2	3.9	17	11
		517	7,500	776	11,250	2.5	142	5.6	1.3	4.3	31	21*
89	3.5	276	4,000	414	6,000	2.5	138	5.4	1.4	4.6	20	13
		345	5,000	517	7,500	2.5	138	5.4	1.4	4.6	20	13
		517	7,500	776	11,250	2.5	156	6.1	1.5	4.9	35	24*
102	4.0	276	4,000	414	6,000	2.5	154	6.1	1.5	4.9	22	15*
		345	5,000	517	7,500	2.5	164	6.5	1.5	4.9	32	22*
		517	7,500	776	11,250	2.5	168	6.6	1.6	5.3	39	26*

\* API 7K not labeled

## Managed Pressure Drilling Hose mud return line

**STANDARD**  
API Spec. 17K

**CONSTRUCTION**  
**Bore type**  
full flow, smooth bore

**Liner material**  
H<sub>2</sub>S resistant PA

**Operating temperature**  
-4°F to 158°F (-20°C to 70°C)

**Max. available length**  
60m (200 ft)

**FEATURES & COMMENTS**

- › Used in both deepwater, shallow water and onshore MPD systems
- › Fit for purpose hoses and hoses for Dual Gradient Drilling (DGD systems) are also available upon request
- › Further sizes and pressure ratings are available upon request
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition



**TECHNICAL DATA**

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (static)		MBR (dynamic)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
102	4.0	Fire rated c/w st. st. wrap	345	5,000	518	7,500	2.5	191	7.52	1.2	3.94	1.7	5.58	45	30.2
		Fire rated c/w moonpool protection						210	8.27	1.2	3.94	1.7	5.58	63	42.3
127	5.0	Fire rated c/w st. st. wrap	276	4,000	414	6,000	2.5	216	8.5	1.3	4.26	1.8	5.9	52	34.9
		Fire rated c/w moonpool protection						236	9.29	1.3	4.26	1.8	5.9	72	48.4
139	5.5	Fire rated c/w st. st. wrap	250	3,630	376	5,445	2.5	226	8.9	1.55	5.08	1.8	5.9	55	37
		Fire rated c/w moonpool protection						246	9.69	1.55	5.08	1.8	5.9	76	51.1
152	6.0	Fire rated c/w st. st. wrap	230	3,330	345	4,995	2.5	239	9.41	1.55	5.08	1.8	5.9	59	39.6
		Fire rated c/w moonpool protection						259	10.2	1.55	5.08	1.8	5.9	82	55.1

## Managed Pressure Drilling Hose bleed off line

**STANDARD**  
API Spec. 17K

**CONSTRUCTION**  
**Bore type**  
full flow, smooth bore

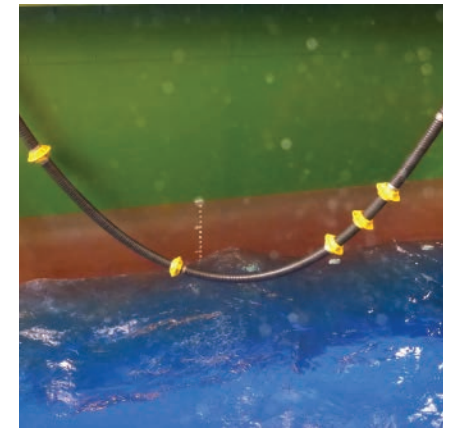
**Liner material**  
H<sub>2</sub>S resistant PA

**Operating temperature**  
-4°F to 158°F (-20°C to 70°C)

**Max. available length**  
60m (200 ft)

**FEATURES & COMMENTS**

- › Used in both deepwater, shallow water and onshore MPD systems
- › Fit for purpose hoses and hoses for Dual Gradient Drilling (DGD systems) are also available upon request
- › Further sizes and pressure ratings are available upon request
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition



**TECHNICAL DATA**

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (static)		MBR (dynamic)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
53	2.0	Fire rated c/w st. st. wrap	345	5,000	517	7,500	2.25	141	5.53	0.8	2.62	1.0	3.28	29.4	19.7
		Fire rated c/w moonpool protection						156	6.14	0.8	2.62	1.0	3.28	38.4	25.8

## Cementing Hose

### STANDARD

API Spec. 7K FSL 0

### CONSTRUCTION

#### Bore type

full flow, smooth bore

#### Liner material

NBR

#### Operating temperature

-13°F to 212°F (-25°C to 100°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- Hoses with a temperature rating of -22°F to 250°F (-30°C to 121°C) and -40°F to 180°F (-40°C to 82°C) are available upon request



### TECHNICAL DATA

Inside Diameter		Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi		mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
54	2.0	345	5,000	690	10,000	2.5	72	2.83	0.6	1.97	0.6	1.97	15	10.0
							104	4.09	0.6	1.97	0.7	2.30		
							72	2.83	0.6	1.97	0.6	1.97	27	18.1
							123	4.84	0.9	2.95	1.0	3.28		
							140	5.51	1.1	3.61	1.4	4.59	40	26.9
64	2.5	345	5,000	690	10,000	2.5	111	4.37	0.6	1.97	0.7	2.30	15	10.1
							136	5.35	1.0	3.28	1.1	3.61	31	20.8
							153	6.02	1.2	3.94	1.5	4.92	45	30.2
76	3.0	345	5,000	690	10,000	2.5	126	4.96	0.7	2.30	0.8	2.62	18	12.1
							148	5.83	1.1	3.61	1.2	3.94	34	22.8
							166	6.54	1.4	4.59	1.6	5.25	53	35.6
							210	8.27	1.6	5.25	1.6	5.25	109	73.2
102	4.0	345	5,000	517	7,500	2.25	166	6.54	1.0	3.28	1.2	3.94	33	22.2
							192	7.56	1.5	4.92	1.7	5.58	61	41
							222	8.74	1.4	4.59	1.4	4.59	108	72.6

## Flexible Choke & Kill Line with Tauroflon™ liner (up to 266°F/130°C)

### STANDARD

API Spec. 16C up to FSL 3

### CONSTRUCTION

#### Bore type

Full flow, rough bore

#### Liner material

H<sub>2</sub>S resistant Tauroflon™

#### Operating temperature

-4°F to 266°F (-20°C to 130°C)

#### Survival temperature

350°F (177°C) for at least 1 hour

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- Suitable for well completion
- Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition
- See Flexible Tauro™Fit Choke & Kill Lines for subsea BOPs and for Flexible Choke & Kill Lines with extremely small MBRs
- See Well Test Hoses for well test applications
- Saudi Aramco approved



### TECHNICAL DATA

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (dynamic)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
54	2.0	Fire rated	345	5,000	517	7,500	2.25	159	6.26	0.9	2.95	0.9	2.95	46	30.9
		Fire rated c/w st. st. wrap						165	6.50	0.9	2.95	0.9	2.95	52	34.9
		Fire rated	690	10,000	1,035	15,000	2.25	159	6.26	0.8	2.62	0.8	2.62	46	30.9
		Fire rated c/w st. st. wrap						165	6.50	0.8	2.62	0.8	2.62	52	34.9
		Fire rated	1,035	15,000	1,552	22,500	2.25	188	7.40	0.8	2.62	0.8	2.62	79	53.1
		Fire rated c/w st. st. wrap						194	7.64	0.8	2.62	0.8	2.62	86	57.8
65	2.5	Standard	1,380	20,000	2,070	30,000	2.25	201	7.91	0.9	2.95	0.9	2.95	92.2	62.0
		Standard c/w st. st. wrap						207	8.15	0.9	2.95	0.9	2.95	99.8	67.1
		Fire rated	345	5,000	517	7,500	2.25	172	6.77	1.0	3.28	1.0	3.28	52	34.9
76	3.0	Fire rated c/w st. st. wrap						178	7.01	1.0	3.28	1.0	3.28	59	39.6
		Fire rated	690	10,000	1,035	15,000	2.25	172	6.77	1.0	3.28	1.0	3.28	52	34.9
		Fire rated c/w st. st. wrap						178	7.01	1.0	3.28	1.0	3.28	59	39.6
		Fire rated	1,035	15,000	1,552	22,500	2.25	202	7.95	0.9	2.95	0.9	2.95	88	59.1
		Fire rated c/w st. st. wrap						207	8.15	0.9	2.95	0.9	2.95	96	64.5
		Standard	1,380	20,000	2,070	30,000	2.25	211	8.31	1.1	3.61	1.1	3.61	99.1	66.6
78	3.0	Standard c/w st. st. wrap						217	8.54	1.1	3.61	1.1	3.61	107	71.9
		Fire rated	345	5,000	517	7,500	2.25	202	7.95	1.0	3.28	1.0	3.28	88	59.1
		Fire rated c/w st. st. wrap						207	8.15	1.0	3.28	1.0	3.28	96	64.5
		Fire rated	690	10,000	1,035	15,000	2.25	202	7.95	1.0	3.28	1.0	3.28	88	59.1
		Fire rated c/w st. st. wrap						207	8.15	1.0	3.28	1.0	3.28	96	64.5
		Fire rated	1,035	15,000	1,552	22,500	2.25	218	8.58	1.0	3.28	1.0	3.28	103	69.2
104	4.0	Fire rated c/w st. st. wrap						223	8.78	1.0	3.28	1.0	3.28	111	74.6
		Standard	1,380	20,000	2,070	30,000	2.25	231	9.09	1.2	3.94	1.2	3.94	118	79.3
		Standard c/w st. st. wrap						237	9.33	1.2	3.94	1.2	3.94	126.6	85.1
		Fire rated	345	5,000	517	7,500	2.25	237	9.33	1.5	4.92	1.5	4.92	104	69.9
		Fire rated c/w st. st. wrap						243	9.57	1.5	4.92	1.5	4.92	112	75.3
		Fire rated	690	10,000	1,035	15,000	2.25	237	9.33	1.5	4.92	1.5	4.92	104	69.9
104	4.0	Fire rated c/w st. st. wrap						243	9.57	1.5	4.92	1.5	4.92	112	75.3

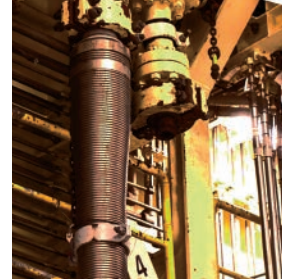
## Flexible Choke & Kill Line with PA liner (up to 266°F/130°C)

**STANDARD**  
API Spec. 16C up to FSL 3

**CONSTRUCTION**  
**Bore type**  
Full flow, rough bore  
**Liner material**  
H<sub>2</sub>S resistant PA  
**Operating temperature**  
-4°F to 266°F (-20°C to 130°C)

**CONSTRUCTION** (Continued)  
**Survival temperature**  
350°F (177°C) for at least 1 hour  
**Max. available length**  
60m (200 ft)

**FEATURES & COMMENTS**  
› Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition  
› See Flexible Tauro™Fit Choke & Kill Lines for subsea BOPs and for Flexible Choke & Kill Lines with extremely small MBRs



### TECHNICAL DATA

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
54	2.0	Standard	345	5,000	517	7,500	2.25	142	5.6	0.8	2.6	0.8	2.6	38	26
		Standard c/w st. st. wrap						152	6.0	0.8	2.6	0.8	2.6	42	28
		Fire rated						155	6.1	0.9	3.0	0.9	3.0	44	30
		Fire rated c/w st. st. wrap	167	6.6	0.9	3.0	0.9	3.0	50	34					
		Standard	690	10,000	1,035	15,000	2.25	142	5.6	0.8	2.6	0.8	2.6	38	26
		Standard c/w st. st. wrap						152	6.0	0.8	2.6	0.8	2.6	42	28
	Fire rated	155						6.1	0.8	2.6	0.8	2.6	44	30	
	Fire rated c/w st. st. wrap	167	6.6	0.8	2.6	0.8	2.6	50	34						
	Standard	1,035	15,000	1,552	22,500	2.25	177	7.0	1.2	3.9	1.2	3.9	69	46	
	Standard c/w st. st. wrap						188	7.4	1.2	3.9	1.2	3.9	76	51	
	Fire rated						190	7.5	1.3	4.3	1.3	4.3	76	51	
	Fire rated c/w st. st. wrap	202	8.0	1.3	4.3	1.3	4.3	84	56						
65	2.5	Standard	345	5,000	517	7,500	2.25	155	6.1	0.9	3.0	0.9	3.0	43	29
		Standard c/w st. st. wrap						167	6.6	0.9	3.0	0.9	3.0	49	33
		Fire rated						169	6.7	1.0	3.3	1.0	3.3	49	33
		Fire rated c/w st. st. wrap	180	7.1	1.0	3.3	1.0	3.3	56	38					
		Standard	690	10,000	1,035	15,000	2.25	155	6.1	0.9	3.0	0.9	3.0	43	29
		Standard c/w st. st. wrap						167	6.6	0.9	3.0	0.9	3.0	49	33
	Fire rated	169						6.7	1.0	3.3	1.0	3.3	49	33	
	Fire rated c/w st. st. wrap	180	7.1	1.0	3.3	1.0	3.3	56	38						
	Standard	1,035	15,000	1,552	22,500	2.25	191	7.5	1.3	4.3	1.3	4.3	77	52	
	Standard c/w st. st. wrap						202	8.0	1.3	4.3	1.3	4.3	85	57	
	Fire rated						204	8.0	1.4	4.6	1.4	4.6	85	57	
	Fire rated c/w st. st. wrap	215	8.5	1.4	4.6	1.4	4.6	94	63						
78	3.0	Standard	345	5,000	517	7,500	2.25	168	6.6	0.9	3.0	0.9	3.0	49	33
		Standard c/w st. st. wrap						180	7.1	0.9	3.0	0.9	3.0	56	38
		Fire rated						182	7.2	1.0	3.3	1.0	3.3	56	38
		Fire rated c/w st. st. wrap	193	7.6	1.0	3.3	1.0	3.3	63	42					
		Standard	690	10,000	1,035	15,000	2.25	168	6.6	0.9	3.0	0.9	3.0	49	33
		Standard c/w st. st. wrap						180	7.1	0.9	3.0	0.9	3.0	56	38
	Fire rated	182						7.2	1.0	3.3	1.0	3.3	56	38	
	Fire rated c/w st. st. wrap	193	7.6	1.0	3.3	1.0	3.3	63	42						
	Standard	1,035	15,000	1,552	22,500	2.25	208	8.2	1.4	4.6	1.4	4.6	90	61	
	Standard c/w st. st. wrap						219	8.6	1.4	4.6	1.4	4.6	98	66	
	Fire rated						218	8.6	1.5	4.9	1.5	4.9	97	65	
	Fire rated c/w st. st. wrap	230	9.1	1.5	4.9	1.5	4.9	106	71						
104	4.0	Standard	345	5,000	517	7,500	2.25	219	8.6	1.4	4.6	1.4	4.6	89	60
		Standard c/w st. st. wrap						230	9.1	1.4	4.6	1.4	4.6	98	66
		Fire rated						232	9.1	1.5	4.9	1.5	4.9	98	66
		Fire rated c/w st. st. wrap	243	9.6	1.5	4.9	1.5	4.9	108	73					
		Standard	690	10,000	1,035	15,000	2.25	219	8.6	1.4	4.6	1.4	4.6	89	60
		Standard c/w st. st. wrap						230	9.1	1.4	4.6	1.4	4.6	98	66
Fire rated	232	9.1						1.5	4.9	1.5	4.9	98	66		
Fire rated c/w st. st. wrap	243	9.6	1.5	4.9	1.5	4.9	108	73							
104	4.0	Standard	1,035	15,000	1,552	22,500	2.25	244	9.6	1.6	5.2	1.6	5.2	126	85
		Standard c/w st. st. wrap						250	9.8	1.6	5.2	1.6	5.2	135	91
		Fire rated	254	10.0	1.7	5.6	1.7	5.6	135	91					
		Fire rated c/w st. st. wrap	260	10.2	1.7	5.6	1.7	5.6	144	97					

## Flexible Choke & Kill Line with PA liner (up to 212°F/100°C)

**STANDARD**  
API Spec. 16C up to FSL 3

**CONSTRUCTION**  
**Bore type**  
Full flow, smooth bore  
**Liner material**  
H<sub>2</sub>S resistant PA  
**Operating temperature**  
-4°F to 212°F (-20°C to 100°C)  
**Survival temperature**  
350°F (177°C) for at least 1 hour  
**Max. available length**  
60m (200 ft)

**FEATURES & COMMENTS**  
› Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition  
› See Flexible Tauro™Fit Choke & Kill Lines for subsea BOPs and for Flexible Choke & Kill Lines with extremely small MBRs



### TECHNICAL DATA

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
51	2.0	Standard	345	5,000	517	7,500	2.25	113	4.5	0.8	2.6	0.8	2.6	24	16
		Standard c/w st. st. wrap						123	4.8	0.8	2.6	0.8	2.6	28	19
		Fire rated						128	5.0	0.9	3.0	0.9	3.0	29	20
		Fire rated c/w st. st. wrap	138	5.4	0.9	3.0	0.9	3.0	33	22					
		Standard	690	10,000	1,035	15,000	2.25	113	4.5	0.8	2.6	0.8	2.6	24	16
		Standard c/w st. st. wrap						123	4.8	0.8	2.6	0.8	2.6	28	19
	Fire rated	128						5.0	0.9	3.0	0.9	3.0	29	20	
	Fire rated c/w st. st. wrap	138	5.4	0.9	3.0	0.9	3.0	33	22						
	Standard	1,035	15,000	1,552	22,500	2.25	136	5.4	1.0	3.3	1.1	3.6	40	27	
	Standard c/w st. st. wrap						146	5.8	1.0	3.3	1.1	3.6	45	30	
	Fire rated						150	5.9	1.1	3.6	1.2	3.9	46	31	
	Fire rated c/w st. st. wrap	162	6.4	1.1	3.6	1.2	3.9	53	36						
64	2.5	Standard	345	5,000	517	7,500	2.25	127	5.0	0.9	3.0	0.9	3.0	28	19
		Standard c/w st. st. wrap						137	5.4	0.9	3.0	0.9	3.0	32	22
		Fire rated						141	5.6	1.0	3.3	1.0	3.3	34	23
		Fire rated c/w st. st. wrap	151	5.9	1.0	3.3	1.0	3.3	38	26					
		Standard	690	10,000	1,035	15,000	2.25	127	5.0	0.9	3.0	0.9	3.0	28	19
		Standard c/w st. st. wrap						137	5.4	0.9	3.0	0.9	3.0	32	22
Fire rated	141	5.6						1.0	3.3	1.0	3.3	34	23		
Fire rated c/w st. st. wrap	151	5.9	1.0	3.3	1.0	3.3	38	26							
Standard	1,035	15,000	1,552	22,500	2.25	149	5.9	1.1	3.6	1.3	4.3	46	31		
Standard c/w st. st. wrap						159	6.3	1.1	3.6	1.3	4.3	51	34		
Fire rated						164	6.5	1.2	3.9	1.4	4.6	53	36		
Fire rated c/w st. st. wrap	175	6.9	1.2	3.9	1.4	4.6	60	40							
76	3.0	Standard	345	5,000	517	7,500	2.25	141	5.6	0.9	3.0	0.9	3.0	32	22
		Standard c/w st. st. wrap						151	5.9	0.9	3.0	0.9	3.0	37	25
		Fire rated						155	6.1	1.0	3.3	1.0	3.3	39	26
		Fire rated c/w st. st. wrap	167	6.6	1.0	3.3	1.0	3.3	45	30					
		Standard	690	10,000	1,035	15,000	2.25	141	5.6	0.9	3.0	0.9	3.0	32	22
		Standard c/w st. st. wrap						151	5.9	0.9	3.0	0.9	3.0	37	25
Fire rated	155	6.1						1.0	3.3	1.0	3.3	39	26		
Fire rated c/w st. st. wrap	167	6.6	1.0	3.3	1.0	3.3	45	30							
Standard	1,035	15,000	1,552	22,500	2.25	164	6.5	1.2	3.9	1.4	4.6	52	35		
Standard c/w st. st. wrap						175	6.9	1.2	3.9	1.4	4.6	59	40		
Fire rated						178	7.0	1.4	4.6	1.7	5.6	59	40		
Fire rated c/w st. st. wrap	190	7.5	1.4	4.6	1.7	5.6	67	45							
102	4.0	Standard	345	5,000	517	7,500	2.25	184	7.2	1.4	4.6	1.4	4.6	54	36
		Standard c/w st. st. wrap						190	7.5	1.4	4.6	1.4	4.6	61	41
		Fire rated						198	7.8	1.5	4.9	1.5	4.9	66	44
		Fire rated c/w st. st. wrap	204	8.0	1.5	4.9	1.5	4.9	70	47					
		Standard	690	10,000	1,035	15,000	2.25	184	7.2	1.4	4.6	1.4	4.6	54	36
		Standard c/w st. st. wrap						190	7.5	1.4	4.6	1.4	4.6	61	41
Fire rated	198	7.8						1.5	4.9	1.5	4.9	66	44		
Fire rated c/w st. st. wrap	204	8.0	1.5	4.9	1.5	4.9	70	47							

## Subsea LMRP Hoses for Choke & Kill and Hydraulic Conduit Application

### STANDARD

API Spec. 16C up to FSL 3

### CONSTRUCTION

#### Bore type

full flow, rough bore

#### Liner material

H<sub>2</sub>S resistant PA or Tauroflon™

#### Shape

Pre-formed hose available if necessary

#### Operating temperature

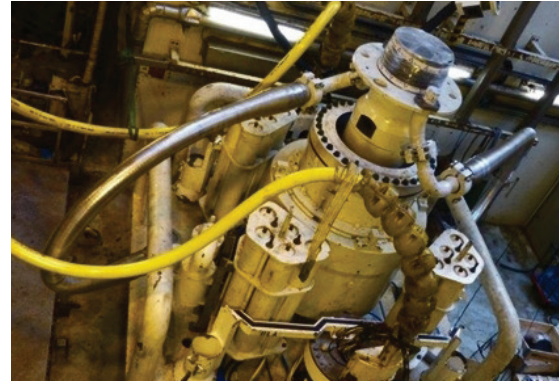
-4°F to 250°F (-20°C to 121°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- › Easy installation in confined spaces  
Used on Lower Marine Riser Package (LMRP) at subsea BOPs
- › 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 pipework
- › New short coupling design increases flexible length with no reduction in bonding strength
- › Opens up new design opportunities to reduce the size and weight of oil field equipment
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition
- › Hose length analysis is available upon request



### TECHNICAL DATA

#### CHOKE & KILL HOSES (TAUROFLON™ LINING)

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
51	2.0	Standard	690	10,000	1,035	15,000	2.25	146	5.75	0.8	2.62	0.8	2.62	40	26.9
		Standard c/w st. st. wrap						151	5.94	0.8	2.62	0.8	2.62	46	30.9
		Standard	1,035	15,000	1,552	22,500	2.25	175	6.89	0.8	2.62	0.8	2.62	72	48.4
		Standard c/w st. st. wrap						181	7.13	0.8	2.62	0.8	2.62	78	52.4
		Standard	1,380	20,000	2,070	30,000	2.25	201	7.91	0.9	2.95	0.9	2.95	92.2	62
		Standard c/w st. st. wrap						207	8.15	0.9	2.95	0.9	2.95	99.8	67.1
65	2.5	Standard	690	10,000	1,035	15,000	2.25	159	6.26	0.9	2.95	0.9	2.95	46	30.9
		Standard c/w st. st. wrap						165	6.50	0.9	2.95	0.9	2.95	52	34.9
		Standard	1,035	15,000	1,552	22,500	2.25	195	7.68	0.9	2.95	0.9	2.95	81	54.5
		Standard c/w st. st. wrap						201	7.91	0.9	2.95	0.9	2.95	88	59.3
		Standard	1,380	20,000	2,070	30,000		211	8.31	1.1	3.61	1.1	3.61	99.1	66.6
		Standard c/w st. st. wrap						217	8.54	1.1	3.61	1.1	3.61	107	71.9
78	3.0	Standard	690	10,000	1,035	15,000	2.25	188	7.40	0.9	2.95	0.9	2.95	80	53.8
		Standard c/w st. st. wrap						194	7.64	0.9	2.95	0.9	2.95	87	58.5
		Standard	1,035	15,000	1,552	22,500	2.25	204	8.03	1.0	3.28	1.0	3.28	95	63.8
		Standard c/w st. st. wrap						210	8.27	1.0	3.28	1.0	3.28	102	68.5
		Standard	1,380	20,000	2,070	30,000	2.25	231	9.09	1.2	3.94	1.2	3.94	118	79.3
		Standard c/w st. st. wrap						237	9.33	1.2	3.94	1.2	3.94	126.6	85.1

## Subsea LMRP Hoses for Choke & Kill and Hydraulic Conduit Application, Cont.

### HYDRAULIC CONDUIT (PA, LINING)

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
54	2.0	Standard	345	5,000	517	7,500	2.25	142	5.6	0.8	2.6	0.8	2.6	38	26
		Standard c/w st. st. wrap						152	6.0	0.8	2.6	0.8	2.6	42	28
		Standard	690	10,000	1,035	15,000	2.25	142	5.6	0.8	2.6	0.8	2.6	38	26
		Standard c/w st. st. wrap						152	6.0	0.8	2.6	0.8	2.6	42	28
		Standard	1,035	15,000	1,552	22,500	2.25	177	7.0	1.2	3.9	1.2	3.9	69	46
		Standard c/w st. st. wrap						188	7.4	1.2	3.9	1.2	3.9	76	51
65	2.5	Standard	345	5,000	517	7,500	2.25	155	6.1	0.9	3.0	0.9	3.0	43	29
		Standard c/w st. st. wrap						167	6.6	0.9	3.0	0.9	3.0	49	33
		Standard	690	10,000	1,035	15,000	2.25	155	6.1	0.9	3.0	0.9	3.0	43	29
		Standard c/w st. st. wrap						167	6.6	0.9	3.0	0.9	3.0	49	33
		Standard	1,035	15,000	1,552	22,500	2.25	191	7.5	1.3	4.3	1.3	4.3	77	52
		Standard c/w st. st. wrap						202	8.0	1.3	4.3	1.3	4.3	85	57
78	3.0	Standard	345	5,000	517	7,500	2.25	168	6.6	0.9	3.0	0.9	3.0	49	33
		Standard c/w st. st. wrap						180	7.1	0.9	3.0	0.9	3.0	56	38
		Standard	690	10,000	1,035	15,000	2.25	168	6.6	0.9	3.0	0.9	3.0	49	33
		Standard c/w st. st. wrap						180	7.1	0.9	3.0	0.9	3.0	56	38
		Standard	1,035	15,000	1,552	22,500	2.25	208	8.2	1.4	4.6	1.4	4.6	90	61
		Standard c/w st. st. wrap						219	8.6	1.4	4.6	1.4	4.6	98	66

## Mud Booster Hose

**STANDARD**  
API Spec. 7K FSL1 - FSL 2 & API Spec. 16C - up to FSL 3

**CONSTRUCTION**  
**API 16C - UP TO FSL 3**                      **API 7K FSL 1 - FSL 2**

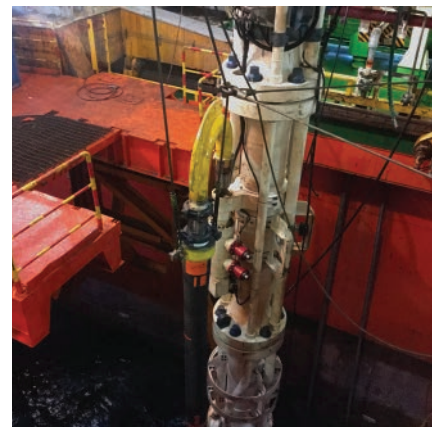
**Bore type**  
full flow, rough bore                      full flow, smooth bore

**Liner material**  
H<sub>2</sub>S resistant Tauroflon™ & PA                      NBR

**Operating temperature**  
-4°F to 250°F (-20°C to 121°C)                      -13°F to 212°F (-25°C to 100°C)

**Max. available length**  
60m (200 ft)                      60m (200 ft)

- FEATURES & COMMENTS**
- › The construction with Tauroflon™ liner is suitable for well completion
  - › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition



### TECHNICAL DATA

#### AS PER API SPEC. 16C WITH TAUROFLON™ LINING

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
104	4.0	Standard	345	5,000	517	7,500	2.25	124	4.88	1.4	4.6	1.4	4.6	94	63
		Standard c/w st. st. wrap						130	5.12	1.4	4.6	1.4	4.6	103	69
		Fire rated						237	9.33	1.5	4.9	1.5	4.9	104	70
		Fire rated c/w st. st. wrap						243	9.57	1.5	4.9	1.5	4.9	112	75

#### AS PER API SPEC. 16C WITH PA LINING

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
104	4.0	Standard	345	5,000	517	7,500	2.25	219	8.6	1.4	4.6	1.4	4.6	89	60
		Standard c/w st. st. wrap						230	9.1	1.4	4.6	1.4	4.6	98	66
		Fire rated						232	9.1	1.5	4.9	1.5	4.9	98	66
		Fire rated c/w st. st. wrap						243	9.6	1.5	4.9	1.5	4.9	108	72

#### AS PER API SPEC. 7K

Inside Diameter		Type	Working Pressure		Test Pressure		API Grade	Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	WP	mm	in.	m	ft.	kg/m	lb./ft.
102	4.0	Standard	345	5,000	517	7,500	D	2.5	159	6.3	1.0	4.0	29	20
		Standard	517	7,500	446	11,250	E	2.5	174	6.9	1.4	4.6	42	28
127	5.0	Standard	345	5,000	517	7,500	D	2.5	213	8.4	1.5	4.9	67	45
		Standard	517	7,500	776	11,250	E	2.5	213	8.4	1.5	4.9	67	45

## Hydraulic Conduit Hose

**STANDARD**  
API Spec. 7K FSL1 - FSL 2 & API Spec. 16C - up to FSL 3

**CONSTRUCTION**  
**API 7K FSL 1 - FSL 2**                      **API 16C - UP TO FSL 3**

**Bore type**  
full flow, smooth bore                      full flow, smooth bore

**Liner material**  
NBR                      H<sub>2</sub>S resistant PA

**Operating temperature**  
-13°F to 212°F (-25°C to 100°C)                      -4°F to 212°F (-20°C to 100°C)

**Max. available length**  
60m (200 ft)                      60m (200 ft)

- FEATURES & COMMENTS**
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition



### TECHNICAL DATA

#### AS PER API SPEC. 7K

Inside Diameter		Working Pressure		Test Pressure		API Grade	Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.	bar	psi	bar	psi	WP	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
51	2.0	345	5,000	517	7,500	D	2.5	104	4.09	0.6	1.97	0.7	2.30	15	10.1
64	2.5	345	5,000	517	7,500	D	2.5	111	4.37	0.6	1.97	0.7	2.30	15	10.1
76	3.0	345	5,000	517	7,500	D	2.5	126	4.96	0.7	2.30	0.8	2.62	18	12.1
89	3.5	345	5,000	517	7,500	D	2.5	140	5.51	0.8	2.62	0.9	2.95	21	14.1

#### AS PER API SPEC. 16C

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
51	2.0	Standard	345	5,000	517	7,500	2.25	113	4.45	0.8	2.6	0.8	2.6	24	16
		Standard c/w st. st. wrap						123	4.84	0.8	2.6	0.8	2.6	28	19
		Fire rated						128	5.04	0.9	3.0	0.9	3.0	29	20
		Fire rated c/w st. st. wrap						138	5.43	0.9	3.0	0.9	3.0	33	22
64	2.5	Standard	345	5,000	517	7,500	2.25	127	5.00	0.9	3.0	0.9	3.0	28	19
		Standard c/w st. st. wrap						137	5.39	0.9	3.0	0.9	3.0	32	22
		Fire rated						141	5.55	1.0	3.3	1.0	3.3	34	23
76	3.0	Standard	345	5,000	517	7,500	2.25	151	5.94	1.0	3.3	1.0	3.3	38	26
		Fire rated c/w st. st. wrap						151	5.94	1.0	3.3	1.0	3.3	39	26
76	3.0	Standard	345	5,000	517	7,500	2.25	141	5.55	0.9	3.0	0.9	3.0	32	22
		Standard c/w st. st. wrap						151	5.94	0.9	3.0	0.9	3.0	37	25
76	3.0	Standard	345	5,000	517	7,500	2.25	155	6.10	1.0	3.3	1.0	3.3	39	26
		Fire rated c/w st. st. wrap						167	6.57	1.0	3.3	1.0	3.3	45	30

## Blowout Preventer Control Hose Fireshield 5000

### CONSTRUCTION

#### Bore type

not full flow, smooth bore

#### Liner material

NBR

#### Reinforcement

2 wire braid (up to 3/8")  
4 or 6 wire spirals (above 3/8")

#### Cover

Red flame retardant CR rubber over layers of heat resistant fiber

#### Operating temperature

-4°F to 212°F (-20°C to 100°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- Used in onshore and offshore drilling operations on the Blow Out Preventer (BOP) to provide hydraulic power to seal the well head in case of a kick or an emergency situation where operation is critical during exposure to fire and high temperature
- Fire rating meets and exceeds Lloyd's Register OD/1000/499 at 1292°F for 5 minutes in accordance to the guidelines of API 16D
- The QR74 Quick Release valved couplings also fully comply to Lloyd's Register OD/1000/499 fire rating
- Stainless steel armor is available upon request to protect the hose against external mechanical damage



### TECHNICAL DATA

Inside Diameter		Working Pressure		Minimum Burst Pressure		Outer Diameter		Minimum Bend Radius		Weight	
mm	in.	bar	psi	bar	psi	mm	in.	mm	in.	kg/m	lb./ft.
6.5	1/4	345	5,000	1,380	20,000	20.0	0.8	110	4.3	0.75	0.50
9.5	3/8	345	5,000	1,380	20,000	24.0	0.9	150	5.9	0.80	0.54
12.7	1/2	345	5,000	1,380	20,000	30.0	1.2	250	9.8	1.22	0.82
19.1	3/4	345	5,000	1,380	20,000	37.0	1.5	330	13.0	1.82	1.22
25.1	1	345	5,000	1,380	20,000	44.0	1.7	375	14.8	2.53	1.70
31.7	1 1/4	345	5,000	1,380	20,000	58.0	2.3	460	18.1	4.20	2.82
38.1	1 1/2	345	5,000	1,380	20,000	63.0	2.5	520	20.5	6.29	4.23
50.8	2	345	5,000	1,380	20,000	77.0	3.0	700	27.6	8.90	5.98

## Well Test Production Hose

### STANDARD

API Spec. 17K & API Spec. 16C - up to FSL 3

### CONSTRUCTION

#### API 16C - UP TO FSL 3

#### Bore type

full flow, rough bore

#### Liner material

H<sub>2</sub>S resistant Tauroflon™

#### Operating temperature

-4°F to 266°F  
(-20°C to 130°C)

#### Max. available length

60m (200 ft)

#### API 17K

full flow, rough bore

H<sub>2</sub>S resistant PA

-4°F to 194°F  
(-20°C to 90°C)

60m (200 ft)



### FEATURES & COMMENTS

- Suitable for both Drill Stem test (DST) and Production Test (PT)
- Designed to withstand continuous periods of operation with a high risk of rapid decompression
- There is no recognized industry standard for Well Test Production Hoses. However, in view of the typical operating conditions, the API specifications for Flexible Choke & Kill Lines (API 16C) or Bonded Flexible Pipes (API 17K) used for production should be considered. Flexible Choke & Kill Lines are designed to withstand short-term high pressure and high temperature operation, while production hoses must withstand continuous periods of operation with a high risk of decompression
- Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition

### TECHNICAL DATA

#### AS PER API SPEC. 16C WITH TAUROFLON™ LINING

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	kg/m	lb./ft.
78	3.0	Fire rated c/w st. st. wrap	690	10,000	1,035	15,000	2.25	207	8.2	1.0	3.3	96	65
		Fire rated c/w st. st. wrap	1,035	15,000	1,552	22,500	2.25	223	8.8	1.5	4.9	111	75
104	4.0	Fire rated c/w st. st. wrap	690	10,000	1,035	15,000	2.25	243	9.6	1.5	4.9	112	75

#### AS PER API SPEC. 16C WITH PA LINING

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	kg/m	lb./ft.
78	3.0	Fire rated c/w st. st. wrap	690	10,000	1,035	15,000	2.25	193	7.6	1.0	3.3	63	42
		Fire rated c/w st. st. wrap	1,035	15,000	1,552	22,500	2.25	230	9.1	1.5	4.9	106	71
104	4.0	Fire rated c/w st. st. wrap	690	10,000	1,035	15,000	2.25	243	9.6	1.5	4.9	108	73

#### AS PER API SPEC. 17K WITH PA LINING

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (static)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	kg/m	lb./ft.
78	3.0	Fire rated c/w st. st. wrap	517	7500	690	11250	2.25	201	7.9	1.5	4.9	67	45
104	4.0	Fire rated c/w st. st. wrap						251	9.9	1.8	5.9	112	75



## Offshore Well Stimulation / Intervention / Acidizing Hose

### STANDARD

API Spec. 16C - up to FSL 3

### CONSTRUCTION

#### Bore type

full flow, rough bore

#### Liner material

H<sub>2</sub>S resistant Tauroflon™

#### Operating temperature

-4°F to 266°F (-20°C to 130°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- › Designed to withstand a large range of acidizing liquids and fracturing solutions
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition
- › Liner suitable for well test/flowback applications



### TECHNICAL DATA

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
54	2.0	Standard	690	10,000	1,035	15,000	2.25	146	5.75	0.8	2.62	0.8	2.62	40	26.9
		Standard c/w st. st. wrap						151	5.94	0.8	2.62	0.8	2.62	46	30.9
		Fire rated						159	6.26	0.9	2.95	0.9	2.95	46	30.9
		Fire rated c/w st. st. wrap	165	6.50	0.9	2.95	0.9	2.95	52	34.9					
		Standard	1,035	15,000	1,552	22,500	2.25	175	6.89	1.2	3.94	1.2	3.94	72	48.4
		Standard c/w st. st. wrap						181	7.13	1.2	3.94	1.2	3.94	78	52.4
		Fire rated						188	7.40	1.3	4.26	1.3	4.26	79	53.1
		Fire rated c/w st. st. wrap	194	7.64	1.3	4.26	1.3	4.26	86	57.8					
		Standard	1,380	20,000	2,070	30,000	2.25	201	7.91	0.9	2.95	0.9	2.95	92	62.0
		Standard c/w st. st. wrap						207	8.15	0.9	2.95	0.9	2.95	100	67.1
		Fire rated						214	8.43	0.9	2.95	0.9	2.95	101	67.5
		Fire rated c/w st. st. wrap	220	8.66	0.9	2.95	0.9	2.95	109	72.9					
78	3.0	Standard	690	10,000	1,035	15,000	2.25	188	7.40	0.9	2.95	0.9	2.95	80	53.8
		Standard c/w st. st. wrap						194	7.64	0.9	2.95	0.9	2.95	87	58.5
		Fire rated						202	7.95	1.0	3.28	1.0	3.28	88	59.1
		Fire rated c/w st. st. wrap	207	8.15	1.0	3.28	1.0	3.28	96	64.5					
		Standard	1,035	15,000	1,552	22,500	2.25	204	8.03	1.4	4.59	1.4	4.59	95	63.8
		Standard c/w st. st. wrap						210	8.27	1.4	4.59	1.4	4.59	102	68.5
		Fire rated						218	8.58	1.5	4.92	1.5	4.92	103	69.2
		Fire rated c/w st. st. wrap	223	8.78	1.5	4.92	1.5	4.92	111	74.6					
		Standard	1,380	20,000	2,070	30,000	2.25	231	9.09	1.2	3.94	1.2	3.94	118	79.3
		Standard c/w st. st. wrap						237	9.33	1.2	3.94	1.2	3.94	127	85.1
		Fire rated						244	9.61	1.2	3.94	1.2	3.94	129	86.3
		Fire rated c/w st. st. wrap	250	9.84	1.2	3.94	1.2	3.94	138	92.5					
104	4.0	Standard	690	10,000	1,035	15,000	2.25	124	4.88	1.4	4.59	1.4	4.59	94	63.2
		Standard c/w st. st. wrap						130	5.12	1.4	4.59	1.4	4.59	103	69.2
		Fire rated						237	9.33	1.5	4.92	1.5	4.92	104	69.9
		Fire rated c/w st. st. wrap						243	9.57	1.5	4.92	1.5	4.92	112	75.3

## Onshore Well Stimulation Hose

### CONSTRUCTION

#### Bore type

full flow, smooth bore

#### Liner material

Erosion resistant elastomer

#### Operating temperature

-22°F to 158°F (-30°C to 70°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- › High pressure hoses used to transport slickwater to enhance onshore shale well performance.
- › Designed to withstand high velocity slickwater for a long period of time
- › Great chemical resistance against HCl
- › Fewer connections than traditional iron and piping, reducing the risk of leaks and assembly time
- › Reduced maintenance and longer service life compared to traditional iron and piping
- › Extends service life of adjacent piping, valves and elbows due to reduced turbulence
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition



### TECHNICAL DATA

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (operation)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
51	2.0	Standard c/w moonpool protection	1,035	15,000	1,552	22,500	2.00	152	5.98	0.7	2.30	0.7	2.30	38	25.7
69	2.7	Standard c/w moonpool protection						156	6.14	0.7	2.30	0.7	2.30	41	27.6

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (static)		MBR (dynamic)		Weight	
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
102	4.0	Standard c/w plastic spiral	1,035	15,000	1,552	22,500	2.00	223	8.78	1.4	4.59	1.5	4.92	87	58.5
127	5.0	Standard c/w plastic spiral						262	10.31	1.8	5.90	1.8	5.90	123	82.5
150	6.0	Standard c/w plastic spiral						302	11.89	1.8	5.90	1.8	5.90	160	107.3

## Burner/Flare Boom Hose

**STANDARD**  
API Spec. 17K

**CONSTRUCTION**

- Bore type**  
full flow, rough bore
- Liner material**  
H<sub>2</sub>S resistant HNBR
- Operating temperature**  
-22°F to 194°F (-30°C to 90°C)
- Max. available length**  
60m (200 ft)

**FEATURES & COMMENTS**

- › Designed to connect the production test manifold to the burner / flare boom
- › Coupling materials meet NACE MR 01-75 / ISO 15156 latest edition
- › Material of the end fittings is either carbon steel or duplex
- › Material of the internal carcass is either 316L or 254 SMO



**TECHNICAL DATA**

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (static)		MBR (dynamic)		Weight												
mm	in.		bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.										
76	3.0	Fire rated	207	3,000	310	4,500	2.25	179	7.05	1.1	3.6	1.5	4.9	46	31											
		Fire rated c/w st. st. wrap						185	7.28							1.1	3.6	1.5	4.9	53	36					
		Fire rated						345	5,000							517	7,500	2.25	197	7.76	1.2	3.9	1.7	5.6	65	44
		Fire rated c/w st. st. wrap																	208	8.19	1.2	3.9	1.7	5.6	73	49
102	4.0	Fire rated	207	3,000	310	4,500	2.25	205	8.07	1.4	4.6	1.8	5.9	57	38											
		Fire rated c/w st. st. wrap						211	8.31							1.4	4.6	1.8	5.9	64	43					
		Fire rated						345	5,000							517	7,500	2.25	223	8.78	1.5	4.9	2.0	6.6	79	53
		Fire rated c/w st. st. wrap																	234	9.21	1.5	4.9	2.0	6.6	88	59
130	5.0	Fire rated	207	3,000	310	4,500	2.25	249	9.80	1.5	4.9	2.0	6.6	92	62											
		Fire rated c/w st. st. wrap						261	10.28							1.5	4.9	2.0	6.6	102	69					
		Fire rated						345	5,000							517	7,500	2.25	252	9.92	1.6	5.3	2.1	6.9	97	65
		Fire rated c/w st. st. wrap																	263	10.35	1.6	5.3	2.1	6.9	107	72
152	6.0	Fire rated	207	3,000	310	4,500	2.25	259	10.20	1.6	5.3	2.1	6.9	79	53											
		Fire rated c/w st. st. wrap						270	10.63							1.6	5.3	2.1	6.9	89	60					
		Fire rated						345	5,000							517	7,500	2.25	279	10.98	1.9	6.2	2.6	8.5	112	75
		Fire rated c/w st. st. wrap																	291	11.46	1.9	6.2	2.6	8.5	124	83

## Riser Tensioner Hose

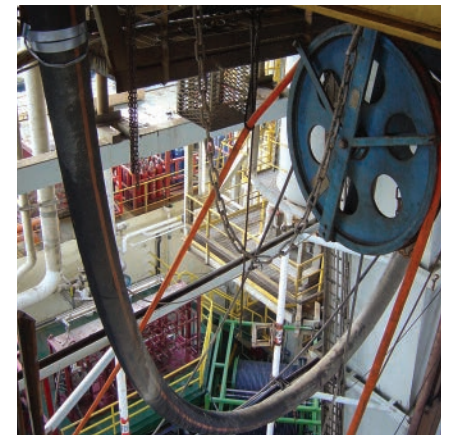
**STANDARD**  
API Spec. 17K

**CONSTRUCTION**

- Bore type**  
full flow, smooth, rough bore
- Liner material**  
H<sub>2</sub>S resistant HNBR
- Operating temperature**  
-22°F to 158°F (-30°C to 70°C)
- Max. available length**  
60m (200 ft)

**FEATURES & COMMENTS**

- › Used for transporting 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. Since API 7K does not include gas exposure testing, it should not be considered for riser tensioner hose applications.
- › Oil and glycol resistant liner



**TECHNICAL DATA**

Inside Diameter		Bore	Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (storage)		MBR (dynamic)		Weight	
mm	in.			bar	psi	bar	psi		WP	mm	in.	m	ft.	m	ft.	kg/m
150	6.0	Smooth	Fire rated	207	3,000	310	4,500	2.5	237	9.33	1.55	5.08	1.8	5.90	53	35.6
207	8.0	Rough	Fire rated	345	5,000	517	7,500	2.25	331	13.0	2.4	7.9	3.2	10.5	139	93

## Drill String Compensator Hose

### STANDARD

API Spec. 17K

### CONSTRUCTION

#### Bore type

full flow, rough bore

#### Liner material

H<sub>2</sub>S resistant HNBR

#### Operating temperature

-22°F to 194°F (30°C to 90°C)

#### Max. available length

60m (200 ft)

### FEATURES & COMMENTS

- Used for hydro-pneumatic medium transport to the drill string compensator cylinder to isolate the heaving motion of the rig from the drill string



### TECHNICAL DATA

Inside Diameter		Type	Rated Working Pressure		Test Pressure		Safety Factor	Outer Diameter		MBR (static)		MBR (dynamic)		Weight	
mm	in.		bar	psi	bar	psi	WP	mm	in.	m	ft.	m	ft.	kg/m	lb./ft.
53	2.0	Standard	207	3,000	310	4,500	2.25	130	5.1	0.8	2.6	1.1	3.6	46	31
		Standard	345	5,000	517	7,500	2.25	148	5.8	0.9	3.0	1.2	3.9	39	26
65	2.5	Standard	207	3,000	310	4,500	2.25	142	5.6	0.9	3.0	1.2	3.9	29	20
		Standard	345	5,000	517	7,500	2.25	159	6.3	0.9	3.0	1.2	3.9	44	30
78	3.0	Standard	207	3,000	310	4,500	2.25	158	6.2	1.0	3.3	1.4	4.6	39	26
		Standard	345	5,000	517	7,500	2.25	176	6.9	1.1	3.6	1.5	4.9	54	36
92	3.5	Standard	207	3,000	310	4,500	2.25	173	6.8	1.1	3.6	1.5	4.9	41	28
		Standard	345	5,000	517	7,500	2.25	190	7.5	1.2	3.9	1.7	5.6	60	40
103	4.0	Standard	207	3,000	310	4,500	2.25	184	7.2	1.2	3.9	1.7	5.6	45	30
		Standard	345	5,000	517	7,500	2.25	202	8.0	1.4	4.6	1.8	5.9	67	45
127	5.0	Standard	207	3,000	310	4,500	2.25	211	8.3	1.4	4.6	1.8	5.9	54	36
		Standard	345	5,000	517	7,500	2.25	231	9.1	1.5	4.9	2.0	6.6	83	56
152	6.0	Standard	207	3,000	310	4,500	2.25	236	9.3	1.6	5.3	2.1	6.9	63	42
		Standard	345	5,000	517	7,500	2.25	257	10.1	1.8	5.9	2.4	7.9	96	65

## Chemical Compatibility Table

MEDIUM	PRODUCT LINING									
	Tauro™Cool		NBR		HNBR		PA		Tauroflon™	
Crude oil	82°C	180°F	100°C	212°F	100°C	212°F	100°C	212°F	130°C	266°F
Diesel oil	82°C	180°F	100°C	212°F	121°C	250°F	130°C	266°F	130°C	266°F
Water based mud	82°C	180°F	90°C	200°F	90°C	200°F	50°C 90°C	122°F 200°F	130°C	266°F
Oil based mud	82°C	180°F	100°C	212°F	121°C	250°F	130°C	266°F	130°C	266°F
Ester based mud	82°C	180°F	90°C	200°F					130°C	266°F
Xylene					66°C	150°F	66°C 100°C	150°F 212°F	130°C	266°F
Methanol	NR	NR	25°C 40°C	75°F 100°F	25°C	75°F	50°C 90°C	122°F 200°F	130°C	266°F
Glycol	70°C	160°F	70°C	160°F	70°C	160°F	70°C	160°F	100°C	212°F
Hydrogen sulphide (<20%)					60°C 90°C	140°F 200°F	130°C	266°F	130°C	266°F
Zinc bromide (40%)	30°C 82°C	90°F 180°F	30°C 90°C	90°F 200°F	30°C	90°F	25°C 50°C	75°F 122°F	130°C	266°F
Zinc bromide (saturated)	30°C	90°F	30°C	90°F	30°C	90°F	25°C 50°C	125°F 122°F	130°C	266°F
Calcium bromide (25%)	30°C 50°C	90°F 122°F	30°C 50°C	90°F 122°F	90°C	200°F	50°C 90°C	122°F 200°F	130°C	266°F
Calcium bromide (saturated)	30°C 50°C	90°F 122°F	30°C 50°C	90°F 122°F	90°C	200°F	50°C 90°C	122°F 200°F	130°C	266°F
Cesium formate (saturated)	82°C	180°F	100°C	212°F	100°C	212°F	50°C 100°C	122°F 212°F	130°C	266°F
Potassium formate (75%)	82°C	180°F	100°C	212°F	100°C	212°F	50°C 100°C	122°F 212°F	130°C	266°F
Acetic acid (20%)	82°C	180°F	90°C	200°F	90°C	200°F	50°C 90°C	122°F 200°F	130°C	266°F
Acetic acid (96%)	50°C	122°F	50°C 90°C	122°F 200°F	50°C 90°C	122°F 200°F	25°C 50°C	75°F 122°F	130°C	266°F
Formic acid	50°C 82°C	122°F 180°F	30°C 50°C	90°F 122°F	50°C 90°C	122°F 200°F	25°C 50°C	75°F 122°F	130°C	266°F
Hydrochloric acid (15%)	60°C 82°C	140°F 180°F	60°C 90°C	140°F 200°F	30°C	90°F	25°C 50°C	75°F 122°F	130°C	266°F
Hydrochloric acid (37%)	30°C	90°F	30°C	90°F	30°C	90°F	NR	NR	130°C	266°F
Hydrofluoric acid (3%)	30°C	90°F	NR	NR	30°C	90°F	25°C 60°C	75°F 140°F	130°C	266°F
Hydrofluoric acid (10%)	NR	NR	NR	NR	30°C	90°F	25°C 60°C	75°F 140°F	130°C	266°F
Sodium hydroxide (20%)							50°C	122°F	66°C	150°F
Produced water	82°C	180°F	100°C	212°F	121°C	250°F	50°C 90°C	122°F 200°F	130°C	250°F

Key: max. operating temperature for unlimited application max. operating temperature for limited application NR - not recommended



## Hose Management Services

Tailored, expert solutions for the maintenance of your flexible hose assemblies.

Ensuring the safe and reliable operation of your flexible hose assemblies, whether in offshore or onshore installations, is essential. Effective hose management not only ensures your operation will continue to run smoothly, but will also eliminate any potential safety or environmental issues and reduce downtime to keep your productivity levels high.

Continental is a world leader in the manufacture of high-pressure drilling and bonded production hoses, crude oil transfer hoses as well as utility and hydraulic assemblies designed specifically for the oil and gas industry. Our expertise and knowledge in this field is unrivaled. With this in-depth capability we have helped to develop the industry standards and guidelines for best practice in the field of integrity management for flexible hose assemblies.

International oil and gas producers and operators across the globe rely on Continental throughout the lifecycle of their flexible hose assemblies, from design and specification through supply to full management of their fluid transfer systems in operation.

We can help you with a number of services, all designed to offer you peace of mind as standard. These are:

### INSPECTION, TESTING & REPAIR

- A complete range of inspection and testing services - including:
  - › inspection and repair of external protection, rubber cover and end fitting painting
  - › high pressure hydrostatic testing,
  - › borescope inspection of the internal carcass or liner
  - › recertification

Test and inspection can be carried out in dedicated facilities in a number of strategic locations worldwide, or we can come to your preferred location. In addition, we inspect and maintain reeling systems, such as bunker stations or off-loading systems.

### INVENTORY MANAGEMENT

An instant overview of all flexible hose assemblies on all of your installations worldwide: ContiConnect is a web-based inventory management program designed for your peace of mind. Being able to see the current status of your FHAs at the click of a button means you can schedule maintenance, order timely replacements and ensure trouble-free operations.

### INSTALLATION AND COMMISSIONING

With our in-depth expertise in all aspects of fluid transfer in the oil and gas industry, we are your first-choice partner for advising and assisting in the specification, installation, commissioning and change-out of flexible hose assemblies and systems, including high-pressure drilling, production, utility, GMPHOM 2009, turret and FPSO seawater intake hoses and also reeling stations.

### HOSE FAILURE ANALYSIS

We carry out various investigations on damaged high-pressure hoses or hose parts at our facility, to reveal the possible causes of damage and propose necessary actions to avoid similar failures in the future.

## Quality

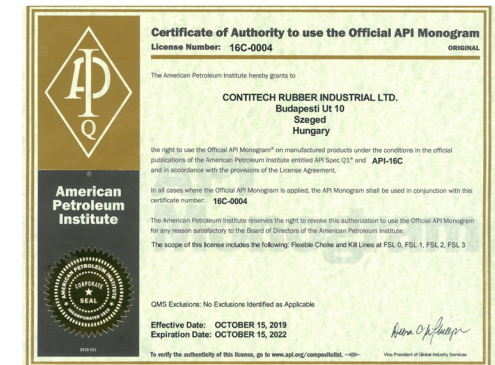
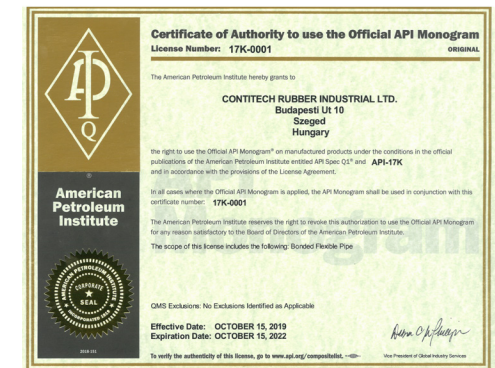
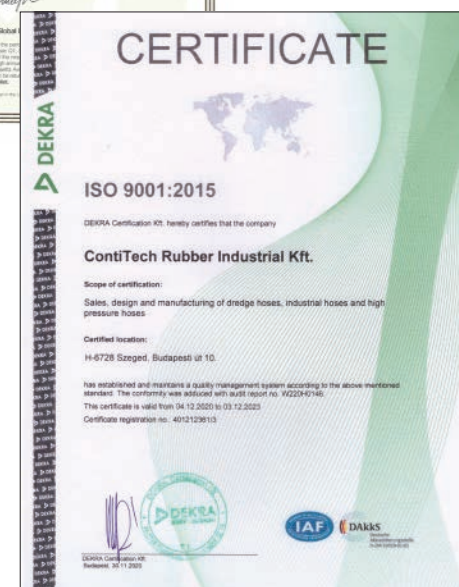
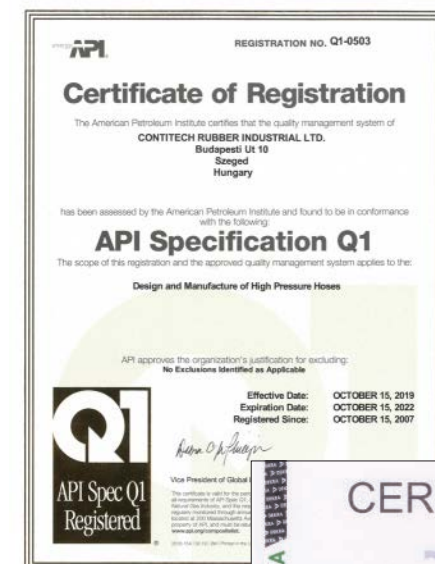
As part of the Continental group, we are committed to quality and respect for the environment. We work closely with customers and approved suppliers to ensure the highest quality standards. The quality management system is in accordance with ISO 9001 and API Spec. Q1. The system's performance is regularly checked and audited by independent auditors.

Currently the Company's Quality Management System is approved and certified by Dekra and API.

Our products fully comply with the latest edition of API Spec. 7K, API Spec. 16C and API Spec. 17K standards.

Continental was the first and for many years the only high pressure bonded hose manufacturer certified for all three relevant standards. Hose sizes range from 2" to 16" with pressure ratings up to 20,000 psi.

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.



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Global Leaders in Hose Solutions



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Hose Management



Industrial Hoses



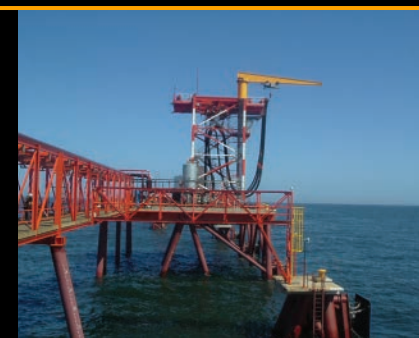
Deep Sea Mining



Intelligent Hoses



Marine Hoses



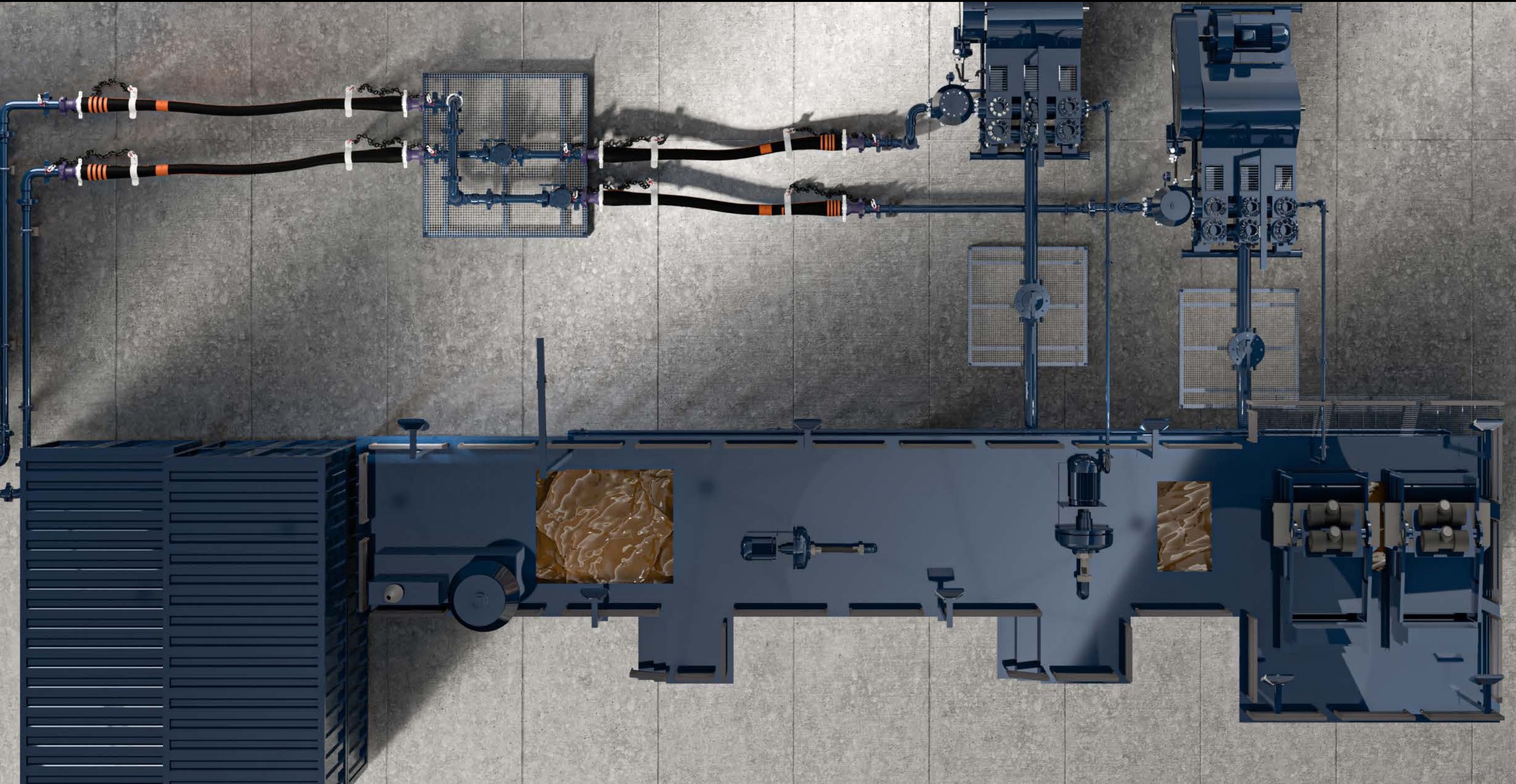
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Our products are created to the very specific needs of our customer's applications in nearly all industries. This results in hoses and hose systems for the construction industry, the food and drinks industry, for chemical and petrochemical production operations, oil & gas exploration, water treatment, mining, steel production and mechanical engineering.

Continental is made up of a host of sites across the globe and together boast an excellent track record in providing customized solutions in the most diverse environmental conditions in the world.

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## Industrial Fluid Solutions

Market segment

Industrial Hose

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Continental

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