



Whatever your clients need or want, you can count on us for immediate service. As professionals in the production and supply of composite hoses for hydrocarbons, chemicals, ship to shore etc., we have invested years of expertise in the development of the right plant and the right products.

Our young and highly sophisticated company is unique in its flexibility, production facilities and high quality approach.

You name it, we make it. Our range of products includes more than 200 different types of composite hoses -from 1" to 12" in standard lengths of 6, 8, 10 and 12 metres, with internal and external wires in stainless steel, galvanized mild steel and polypropylene coated steel and in standard color coding for identification.

But this is merely one facet of our appeal. In addition to these standard items, we shall be pleased to demonstrate our skill in developing and manufacturing- in close cooperation with you - any special type of composite hose. Made to measure ... in 'no time'. Independent of any specific brand of plastics, wires, fittings etc. Simply the best of everything.

You can reach us day and night, for advice and support, for production and supply From our headquarters in the Port of Rotterdam, we look forward to hearing from you.

### **Application**

The wide range of Multi-oil and Multi-chem composite hoses covers a variety of liquid transportation - from water to chemicals, vapour recovery, and from mineral oils to acids. Their strong, lightweight construction and flexibility make them easy to handle in every respect.

### **Construction**

Multi-oil and Multi-chem composite hoses are internally and externally supported by selected wires in stainless steel or galvanised mild steel, aluminium or polypropylene coated steel. Their thermoplastic layers range from polypropylene fabric or film to PTFE, pvc coated polyester fabric and polypropylene coated polypropylene fabric. The covers are distinctively coloured for identification.

### **Safety**

Multi-Oil and Multi-chem composite hoses comply with international standards such as BS 5842, American Coastguard and IMO ect. Depending on the maximum working pressure, their designed safety factor is 5.1. Electrical continuity is guaranteed by connection of the internal and external wires to the fittings during swaging.

### **Identification**

<b>7 bar, light duty</b>	<b>printed tape displaying 7 bar -100 PSI</b>
<b>10,5 bar,- standard duty</b>	<b>printed tape displaying 10,5 bar - 150 PSI</b>

**14 bar, heavy duty      printed tape displaying 14 bar - 200 PSI**  
**Customer name or application tapes are available to requirement.**

### **Temperature**

Multi-oil and Multi-chem composite hoses withstand -20°C to 100°C depending on the product to be transported and the operational pressure - cryogenic hoses are constructed to withstand -50°C to 50°C. Alternative special high temperature construction are also laid down in our specification.

### **Tests**

Multi-oil and Multi-chem composite hoses undergo tests at various stages with respect to their:

- pre-test length
- length during the test (1,5 times working pressure)
- post-test length
- electrical continuity

Production batch testing is regularly carried out to ensure performance criteria is achieved.



### Applications

Multi-oil blue hoses are designed for conveying hydrocarbons, solvents, aromatics, etc. There are three different types, depending of pressure and application namely:

#### Multi-oil blue

light duty	code 07-121-gg	tank truck and railcar.
standard duty	code 10-111-gg	tank truck, railcar and in plant transfer
heavy duty	code 14-111-gg	heavy duty marine operations and ship and barge loading and unloading.

### Construction

Inner wire	Galvanized steel.
Lining	Polypropylene.
Outer cover	Blue
Outer wire	Galvanized steel.

### Temperature range

-20 °C to 100 °C

### Safety factor

Working pressures based on safety factor 5:1.

#### Multi-oil blue light duty, code 07-121-gg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	100	7	4,000	100	0,55	0,85	65	20
1,5	40	100	7	5,125	130	0,75	1,15	65	20
2,0	50	100	7	5,500	140	0,85	1,30	65	20
2,5	65	100	7	6,750	170	1,45	2,20	65	20
3,0	80	100	7	8,000	200	1,80	2,70	65	20
4,0	100	100	7	12,000	300	2,95	4,40	65	20

#### Multi-oil blue standard duty, code 10-111-gg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	150	10,5	4,750	120	0,65	0,95	65	20

1,5	40	150	10,5	5,125	140	1,15	1,70	65	20
2,0	50	150	10,5	7,125	180	1,20	1,80	65	20
2,5	65	150	10,5	8,000	200	1,95	2,90	65	20
3,0	80	150	10,5	10,750	270	2,35	3,50	65	20
4,0	100	150	10,5	15,000	380	3,65	5,50	65	20

#### Multi-oil blue heavy duty, code 14-111-gg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
3,0	80	200	14	12,000	300	3,00	4,50	65	20
4,0	100	200	14	16,000	400	5,25	7,90	65	20
5,0	125	200	14	19,000	475	6,45	9,70	65	20
6,0	150	200	14	22,000	550	8,25	12,40	65	20
8,0	200	200	14	29,000	725	14,55	21,80	65	20
10,0	250	150	10,5	36,000	900	17,80	26,70	40	12
12,0	300	100	10,5	45,200	1150	21,10	32,00	32	10

This information is for guidance only, dimensions and weights shown are approximate.  
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## Multi-chem black

### Applications

Multi-chem black hoses are designed for those chemicals which do not affect the polypropylene lining and the polypropylene coated steel inner wire. There are three different types, depending of pressure and application namely:

#### Multi-chem black:

light duty	code 07-421-pg	tank truck and railcar.
standard duty	code 10-411-pg	tank truck, railcar and in plant transfer
heavy duty	code 14-411-pg	heavy duty marine operations and ship and barge loading and unloading.

### Construction

Inner wire	Polypropylene coated steel
Lining	Polypropylene
Outer cover	Black
Outer wire	Galvanized- or Stainless steel 316

### Temperature range

-20 °C to 100 °C

### Safety factor

Working pressures based on safety factor 5:1.

#### Multi-chem black light duty, code 07-421-pg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	100	7	4,000	100	0,50	0,75	65	20
1,5	40	100	7	5,125	130	0,70	1,05	65	20
2,0	50	100	7	5,500	140	0,80	1,20	65	20
2,5	65	100	7	6,750	170	1,15	1,75	65	20
3,0	80	100	7	8,000	200	1,45	2,20	65	20
4,0	100	100	7	12,000	300	2,55	3,85	65	20

#### Multi-chem black standard duty, code 10-411-pg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m

1,0	28	150	10,5	4,750	120	0,55	0,85	65	20
1,5	40	150	10,5	5,125	140	1,05	1,55	65	20
2,0	50	150	10,5	7,125	180	1,15	1,75	65	20
2,5	65	150	10,5	8,000	200	1,65	2,50	65	20
3,0	80	150	10,5	10,750	270	2,00	3,00	65	20
4,0	100	150	10,5	15,000	380	3,00	4,50	65	20

#### Multi-chem black heavy duty, code 14-411-pg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
3,0	80	200	14	12,000	300	2,35	3,55	65	20
4,0	100	200	14	16,000	400	4,85	7,25	65	20
5,0	125	200	14	19,000	475	6,50	9,05	65	20
6,0	150	200	14	22,000	550	8,45	12,65	65	20
8,0	200	200	14	29,000	725	13,65	20,50	65	20
10,0	250	150	10,5	36,000	900	16,75	25,10	40	12
12,0	300	100	10,5	45,200	1150	21,80	33,00	32	10

This information is for guidance only, dimensions and weights shown are approximate. We reserve the right to alter or amend specifications as deemed necessary.



## Multi-chem green

### Applications

Multi-chem green hoses are designed for those chemicals which do not affect the polypropylene lining and the stainless steel inner wire. There are three different types, depending of pressure and application namely:

#### Multi-chem green:

light duty	code 07-321-sg	tank truck and railcar.
standard duty	code 10-311-sg	tank truck, railcar and in plant transfer
heavy duty	code 14-311-sg	heavy duty marine operations and ship and barge loading and unloading.

### Construction

Inner wire	Stainless steel 316
Lining	Polypropylene
Outer cover	Green
Outer wire	Galvanized- or Stainless steel 316

### Temperature range

-20 °C to 100 °C

### Safety factor

Working pressures based on safety factor 5:1.

#### Multi-chem green light duty, code 07-321-sg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	100	7	4,000	100	0,55	0,85	65	20
1,5	40	100	7	5,125	130	0,75	1,15	65	20
2,0	50	100	7	5,500	140	0,85	1,30	65	20
2,5	65	100	7	6,750	170	1,45	2,20	65	20
3,0	80	100	7	8,000	200	1,80	2,70	65	20
4,0	100	100	7	12,000	300	2,95	4,40	65	20

#### Multi-chem green standard duty, code 10-311-sg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
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inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	150	10,5	4,750	120	0,65	0,95	65	20
1,5	40	150	10,5	5,125	140	1,15	1,70	65	20
2,0	50	150	10,5	7,125	180	1,25	1,80	65	20
2,5	65	150	10,5	8,000	200	1,95	2,90	65	20
3,0	80	150	10,5	10,750	270	2,35	3,50	65	20
4,0	100	150	10,5	15,000	380	3,65	5,50	65	20

#### Multi-chem green heavy duty, code 14-311-sg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
3,0	80	200	14	12,000	300	3,00	4,50	65	20
4,0	100	200	14	16,000	400	5,25	7,90	65	20
5,0	125	200	14	19,000	475	6,45	9,70	65	20
6,0	150	200	14	22,000	550	8,25	12,40	65	20
8,0	200	200	14	29,000	725	14,55	21,80	65	20
10,0	250	150	10,5	36,000	900	17,80	26,70	40	12
12,0	300	100	10,5	45,200	1150	21,10	32,00	32	10

This information is for guidance only, dimensions and weights shown are approximate. We reserve the right to alter or amend specifications as deemed necessary.





## Multi-chem red

### Applications

Multi-chem red hoses are designed for those chemicals and acids which do not affect the PTFE lining and the stainless steel inner wire. There are three different types, depending of pressure and application namely:

#### Multi-chem red:

light duty	code 07-331-sg	tank truck and railcar.
standard duty	code 10-331-sg	tank truck, railcar and in plant transfer
heavy duty	code 14-331-sg	heavy duty marine operations and ship and barge loading and unloading.

### Construction

Inner wire	Stainless steel 316
Lining	PTFE, Fep and Hostaflon
Outer cover	Red
Outer wire	Galvanized- or Stainless steel 316

### Temperature range

-20 °C to 100 °C

### Safety factor

Working pressures based on safety factor 5:1.

#### Multi-chem red light duty, code 07-331-sg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	100	7	4,000	100	0,55	0,85	65	20
1,5	40	100	7	5,125	130	0,75	1,15	65	20
2,0	50	100	7	5,500	140	0,85	1,30	65	20
2,5	65	100	7	6,750	170	1,45	2,20	65	20
3,0	80	100	7	8,000	200	1,80	2,70	65	20
4,0	100	100	7	12,000	300	2,95	4,40	65	20

#### Multi-chem red standard duty, code 10-331-sg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,0	28	150	10,5	4,750	120	0,65	0,95	65	20
1,5	40	150	10,5	5,125	140	1,15	1,70	65	20
2,0	50	150	10,5	7,125	180	1,25	1,80	65	20
2,5	65	150	10,5	8,000	200	1,95	2,90	65	20
3,0	80	150	10,5	10,750	270	2,35	3,50	65	20
4,0	100	150	10,5	15,000	380	3,65	5,50	65	20

#### Multi-chem red heavy duty, code 14-331-sg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
3,0	80	200	14	12,000	300	3,00	4,50	65	20
4,0	100	200	14	16,000	400	5,25	7,90	65	20
5,0	125	200	14	19,000	475	6,45	9,70	65	20
6,0	150	200	14	22,000	550	8,25	12,40	65	20
8,0	200	200	14	29,000	725	14,55	21,80	65	20
10,0	250	150	10,5	36,000	900	17,80	26,70	40	12
12,0	300	100	10,5	45,200	1150	21,10	32,00	32	10

This information is for guidance only, dimensions and weights shown are approximate. We reserve the right to alter or amend specifications as deemed necessary.



## Multi-vapor yellow

### Applications

Multi-vapor yellow is designed specifically for chemicals as well as for hydrocarbon vapor recovery service on ships, barges and in marine terminals. It can also be used to recover vapors in tank truck and railcar applications.

### Construction

Inner wire	Stainless steel 316 or PP coated
Lining	Polypropylene
Outer cover	Yellow
Outer wire	Galvanized- or Stainless steel 316

### Temperature range

-20 °C to 100 °C

### Safety factor

Working pressures based on safety factor 5:1.

#### Multi-vapor yellow vapor recovery service, code 05-421-pg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
2	50	100	7	5,50	140	0,80	1,20	65	20
3	80	100	7	8,00	200	1,45	2,20	65	20
4	100	100	7	12,00	300	2,55	3,80	65	20
6	150	100	7	16,00	410	4,70	7,00	65	20
8	200	100	7	22,00	560	8,00	12,00	65	20
10	250	100	7	30,00	765	10,70	16,00	40	12
12	300	100	7	37,00	1000	17,30	26,00	33	10

#### Multi-vapor yellow vapor recovery service, code 05-321-pg

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
2	50	100	7	5,50	140	0,80	1,20	65	20
3	80	100	7	8,00	200	1,45	2,20	65	20

4	100	100	7	12,00	300	2,55	3,80	65	20
6	150	100	7	16,00	410	4,70	7,00	65	20
8	200	100	7	22,00	560	8,00	12,00	65	20
10	250	100	7	30,00	765	10,70	16,00	40	12
12	300	100	7	37,00	1000	17,30	26,00	33	10

This information is for guidance only, dimensions and weights shown are approximate. We reserve the right to alter or amend specifications as deemed necessary.

# Multi-cryogenics white



## Applications

Multi-cryogenics is designed specifically for use with fully refrigerated conveyants down to -50°C on ships, barges and in marine terminals. This application is including the following medie:

Ammonia, Acetaldehyde, Butadiene, Butane, Propane, Butylene, Dimethylamide, Ethylamine, Ethyl Chloride, Methyl Acetylene, Methyl Bromide Propane, Propadiene, Propylene, Vinyl Chloride, Refrigerant Gases. Multi-cryogenics is also suitable for:

Liquid Ethylene at -105°C, Liquid Ethane at -88°C.

## Construction

Inner wire	Stainless steel 316
Lining/carcass	Polyamide films, fabrics and BOPP
Outer wire	Galvanized- or Stainless steel 316

## Temperature range

-50 °C to 50 °C

## Safety factor

Working pressures based on safety factor 5:1.

## Multi-cryogenics white - cryogenics service, code 393-ss

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,5	40	300	21	6,3	160	1,1	1,60	65	20
2	50	300	21	8,1	205	1,6	2,40	65	20
2,5	65	300	21	9,1	230	2,1	3,20	65	20
3	80	300	21	12,8	325	3,3	4,90	65	20
4	100	300	21	17,1	435	6,0	9,00	65	20
6	150	300	21	24,2	615	8,4	12,60	20	20
8	200	200	14	30,5	775	13,5	20,10	20	20

10	250	150	10,5	38,4	975	16,0	23,90	40	12
12	300	150	10,5	52,2	1325	24,1	36,00	32	10

#### Multi-cryogenics white - cryogenics service, code 25-393-ss

Bore diameter		Max. work. pressure		Bend radius		Weight		Maximum length	
inches	mm	PSI	bar	inches	mm	lbs/Ft	Kg/m	Ft	m
1,5	40	360	25	6,5	165	1,3	1,90	65	20
2	50	360	25	8,5	215	1,7	2,50	65	20
2,5	65	360	25	9,4	240	2,2	3,30	65	20
3	80	360	25	13,2	335	3,6	5,30	65	20

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# Slings



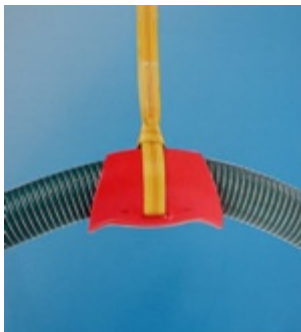
## Hose handling slings

In the case of Gutteling 'Heavy Duty' loading and unloading hoses (ship to shore applications), the use of at least one wide support sling is recommended for hoses with a maximum length of 6 mtr and an inner diameter between 100 m/m and 300 m/m. For longer hoses, at least two

wide support slings per hose must be used and in the case of diameters above 200 m/m the use of a so-called 'saddle' is required.

**Never use rope slings as severe hose damage will result.**

Code number	HHS-1	HHS-2	HHS-3	HHS-4	HHS-5
Hose diameter	4"	6"	8"	10"	12"
Max. hose length	6m/20 ft	6m/20 ft	6m/20 ft	6m/20 ft	6m/20 ft



## Wide support hosebuns

Gutteling hosebuns are composed of a red polymer and are used with latex-treated yellow web slings uniquely engineered for each specific model of hosebun. Sling rated capacities are established using a 5:1 safety factor. All slings are used in a choker hitch position to eliminate hose slippage.

**Never use rope slings as severe hose damage will result.**

Hose size	3"	4"	6"	8"	10"
Hosebun model	HB300	HB400	HB600	HB800	HB1000
Length (inches)	9,8	11,5	21,5	30,0	41,0
Weight (lbs.)	2,50	3,75	13,75	29,75	53,00
Sling width (inches)	1,75	1,75	4,00	6,00	8,00
Sling length (inches)	30,5	34,5	39,0	50,0	62,0
Rated capacity (lbs.)	1500	1500	8000	12000	15000

# Fittings



## Large bore

### Fixed Flanges ASA or DIN or TTMA

Size: 1" to 12"  
 Material: Carbon Steel  
 Stainless Steel  
 Attachment: Carbon Steel Ferrule



### Floating Flanges ASA or DIN or TTMA

Size: 1" to 12"  
 Material: Stub End Carbon Steel  
 Stub End Stainless Steel  
 Flange Carbon Steel  
 Flange Stainless Steel  
 Attachment: Carbon Steel Ferrule



## Small bore

### Male threaded nipple NPT or BSP

Size: 1" to 4"  
 Material: Carbon Steel  
 Stainless Steel  
 Attachment: Carbon Steel Ferrule



### Female threaded swivel nut coupling NPT or BSP

Size: 1" to 4"  
 Material: Carbon Steel  
 Stainless Steel  
 Attachment: Carbon Steel Ferrule

All Gutteling end fittings are reusable and are attached with the superior external swaging method.