

Composite hoses DRAINTEC

Complete HD Tank Roof Draining System



Draining rain water from a floating tank roof is important to prevent building up too much water on top which could cause sinking of the roof. With the **DRAINTEC** type an excellent solution was developed for this application. The major advantage of a hose is that it has a minimum number of connections, therefore eliminating much of the potential problems with other draining systems, like e.g. corroding swivel joints. Constituting a complete system including the connections, ballast cable and suspension system, **DRAINTEC** is easily installed or retrofitted by a contractor crew. Each hose is individually tested prior the shipment, to ensure its performance. As a result of its flexible nature, **DRAINTEC** will even be able to deal with frozen rain water inside.

Being designed for inside tanks installation, special compounded covers are used to resist immersion in high aromatic or corrosive liquids !

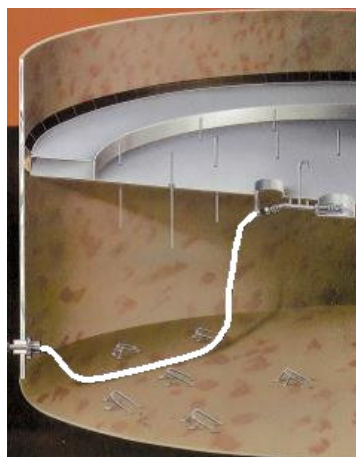
DRAINTEC hoses are designed, manufactured and tested to customer specifications to offer the following features:

- installed to form a single coil repeating lay pattern (360° coil)
- fixed underneath the floating roof by PU support saddles, clevis and chain
- equipped with full bore steel fittings
- system ensures less maintenance, less product loss, reduced shutdowns and maximum service life
- designed for continuous exposure to a wide range of chemicals and PH values both internally and externally
- Internal ballast is provides negative buoyancy of the assembly and needs to be individually adapted to the purpose
- tested at 14 bar for 1 hour and certified acc. to EN 13765:2010



Type
approved

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Product description:

Lining: Polypropylene or PTFE lined hose, depending on the type of hose specified or required

Reinforcement: Textile reinforcement with a double high tensile wire helix to resist collapsing by external pressure when immersed.

Pressure: Although these hoses are rainwater drains experiencing low pressures when in use, the integrity of the hose assemblies is checked after ballasting, by testing to 15 bar with water and vacuum testing to - 1 bar. Full and detailed test and material certificates are supplied as a standard.

Cover: Wrapped fabric finish in following options:

- **ANTISTATIC** Polypropylene fabrics, to resist at 100% aromatic content.
- **NANOTEC®** Pure Teflon Cross laminate film (Deposited Patent) resistant to all solvents, Chemicals and aromatics at any concentration.

Ballast: On request each hose assembly incorporates (inside) a permanently attached stainless steel cable and ballast discs to prevent the hose from floating in the stored product.

Repeatable lay pattern: DRAINTEC hoses are installed to form a single coil repeating lay pattern with a 360° coil.

Antistatic: All hoses are electrically conductive.

Installation: 2 Polyurethane SCUFFRING support saddles and chains for roof attachment are supplied and the roof end of each hose is marked as follows: "ATTACH THIS END TO ROOF"

Flanges: Generally mild steel nipples with fixed ASA150 R/F flanges are supplied. Other flanged drillings and material types are available including swivel flanges and bronze flanges. The ballast connection is a stainless steel wire rope section permanently welded to the hose nipple.

Code	DRAINTEC HD XZ	DRAINTEC HD XX	DRAINTEC SUPERFLEX XZ	DRAINTEC SUPERFLEX XX
Applications	Roof draining hose system		Draining system hinge joints	
Colour	white			
Temperature	-40 +80°C			
Inner wire	st. steel	st. steel	st. steel	st. steel
Outer wire	carbon steel	st. steel	Carbon steel	st. steel

Size		Maximum W.P.		Safety factor	Bend Radius (EN ISO 1746)		Weight	Maximum Length	
mm	Inch	Bar	P.S.I.	Bar	mm	Inch	kg / m	m	Feet
50	2"	14	200	5:1	180	7	2,19	40	132
65	2½"	14	200	5:1	220	8½	3,13	40	132
75/80	3"	14	200	5:1	300	11	3,80	40	132
100	4"	14	200	5:1	400	16	5,29	40	132
150	6"	14	200	5:1	500	20	12,21	40	132
200	8"	14	200	5:1	800	32	17,14	40	132
250	10"	14	200	5:1	1200	40	24,92	25	82
300	12"	14	200	5:1	1500	59	33,82	25	82



Burst pressure indicated is at ambient temperature.
 Maximum temperature rating can only be maintained when working within limits of working pressure.
 We reserve the right to change specification without prior notice !

DRAINTEC SUPERFLEX Hinge Joint Draining System

This system was designed to innovatively provide a better solution to floating roof drainage problems. It combines both the flexibility of composite and hose systems with the strength found in rigid pipe/swivel joint systems. Basically it is a steel pipe drain system with angular flexible joints that withstand an extremely wide range of service conditions.



DRAINTEC HINGE SYSTEM offers Long Maintenance-Free Service and effectively provides positive roof drainage with maintenance-free and worry-free operation. This results in extended service life with no hose kinking or clogging and no stress loading on O-rings, bearings or seals. Instead of costly swivels, this system employs unique flexible joints in a straight-line design, with no offsets to cause unbalanced loading.

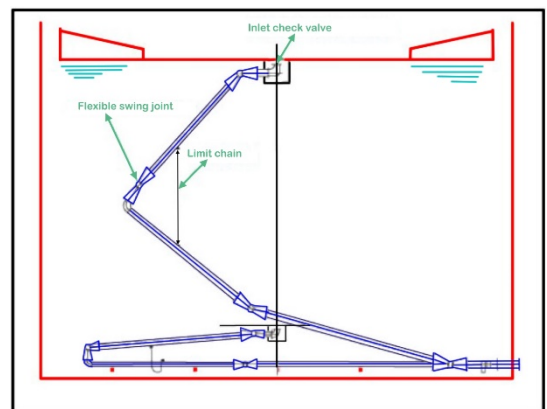
The **DRAINTEC HINGE SYSTEM** is easily installed in a fixed position, requiring a minimal operating area. With a designed continuous slope, the Hinge does not allow sediment to become trapped in the system. It is designed for submerged service with no lubrication required and there are no corrosion freeze-ups. All components are compatible with 100% aromatic products and can withstand high design pressures.

Advantages of **DRAINTEC HINGE SYSTEM** compared to traditional swivel joint systems:

- straight-line design - no offsets to cause unbalanced loading
- no O-rings, bearings or seals
- no moving parts to lubricate
- designed for submerged service
- no flow restrictions
- load stress transferred across joint, not through it
- easy installation

Advantages of **DRAINTEC HINGE SYSTEM** compared to Hose Drain Systems:

- continuous slope design - no sediment traps
- small operating area - no tank layout required, minimizing downtime
- fixed position - no damage due to interference
- 100% aromatic resistant components
- higher design pressure
- no kinking or collapsing
- no dragging or scraping action across tank bottom
- no ballast needed



Other Advantages:

- ease of design and installation
- no measuring of roof legs other internals required prior to design
- immediate delivery of system components reducing tank downtime
- minimal field welding required for system installation
- no piping required on underneath of floating roof
- flexible joints can be used for internal floating suctions
- Roof Drain Systems can be designed for dual use with Fire Fighting Foam Delivery

Construction Features:

The **DRAINTEC HINGE** flexible joint is composed from inner and outer stainless steel wire helixes (maintaining rigidity under internal or external pressures), multiple inner layers of polar and non-polar thermoplastic materials (preventing product permeation through the hose, even from such products as MTBE) and outer layers from antistatic woven fabric (protecting the inner hose materials). Its high design pressure also makes the system suitable for use with fire fighting foam delivery systems.

The design uses stainless steel and PTFE bushings and spacers to eliminate jamming and ensure flexibility – so no lubrication is required. The reinforced side plates transfer the load around the flexible hose, eliminate stress on the hose end connections and thus minimize the possibility of hose end failure. These side plates are available carbon steel (galvanized or prime coated) and stainless steel materials in diameters from 2" to 12".

Relevant regulations:

DNV Det Norske Veritas Cert.N° CERT-04193-99-AQ IND-SINCERT, EN 13765:2010, approved from CEN
Directive 97/23/CE "PED" with operating procedures certified from DNV - CE PED 07.0056.06/2585
Directive 94/9/CE "ATEX" hose for explosive atmospheres, Cert. held by DNV Rec.nr. CE ATE 08.0117.06/2617 - (AS 2430.1-1987) BS 5842:1980 (Conf. 1986) BS 3492:1987
AS 2683-2000 (hose & hose assemblies for distribution of petroleum and petroleum products)
AS 2117-1991 (hose & hose assemblies for petroleum and petroleum products - marine suction and discharge)
NAHAD Guidelines (NAHAD 600/2005)

Test procedures:

BS 5173-102.10:1990 section 102.10 - (EN ISO 1402)
AS1180.5-1999 (method 5)
AS 1180.13B (electrical resistance)
AS1180.13C (electrical continuity)

Type Approval:

Lloyd's Register Type Approved - Cert.N° 13/00002
DNV Det Norske Veritas Type Approval Cert. N° P-12369
RINA - Registro Italiano Navale - Cert. N° AC/81398/1/TO/99
Russian Maritime Register of Shipping
IBC Code Chapter 5 - Ship's Cargo hoses
IMO Chemical Carrier Code - Paragraphs 2:12 and 5:7



Welding Process:

according to EN 15608:2005 - EN 439:1996 - EN 15614-1:2005 - EN 6848:2005 - EN 12072:2001 certified by DNV Det Norske Veritas, according to ASME IX certified by RINA

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