DNV·GL

Certificate No:
TAE00002H7

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Conduit, Fitting, Cable Pipe, Box, Etc.

with type designation(s)
HFT Pliable Conduits and HFT Rigid Conduits

Issued to
Henning Aass A/S
Oslo, Norway

is found to comply with
DNV GL rules for classification – Ships, offshore units, and high speed and light craft

Application :

Products approved by this certificate are accepted for installation on all vessels classed by DNV GL.

Issued at **Høvik** on **2018-01-18**

This Certificate is valid until **2022-06-30**.
DNV GL local station: **Oslo Maritime and CAP**

Approval Engineer: **Nicolay Horn**

for **DNV GL**

Digitally Signed By: Andreas Kristoffersen
Location: DNV GL Høvik, Norway

Andreas Kristoffersen
Head of Section

This Certificate is subject to terms and conditions overleaf. Any significant change in design or construction may render this Certificate invalid.
The validity date relates to the Type Approval Certificate and not to the approval of equipment/systems installed.

Manufactured by

Diezel Ges.m.b.H
Vienna, Austria

Product description

Protection and support system for cables and wires, consisting of tubing, 90 degree arched elbow and accessories as gland, elbow gland and junction box.

Corrugated tubing of various colours made from PA-6, PP or PC-Blend, non-flame progagating, halogen free. Resistant to alcohol, grease, mineral oil, diesel oil, benzine [does not apply for PC-Blend] and [in black colour stabilised against Solar radiation].

Conduits:

Type HFX: Pliable conduit light gauge, corrugated (PP)

	Sizes outer diameter (mm)	Sizes inner diameter (mm)	Ingress protection	Temperature range
HFX 16	16	10,7	At least IP 40*	÷25 °C to +105 °C
HFX 20	20	14,1		
HFX 25	25	18,3		
HFX 32	32	24,3		
HFX 40	40	30,0		
HFX 50	50	38,0		
HFX 63	63	54,1		

Type HFXP-Turbo: Pliable conduit medium gauge, corrugated (PP)

	Sizes outer diameter (mm)	Sizes inner diameter (mm)	Ingress protection	Temperature range
HFXP -Turbo 16	16	11,2	At least IP 40*	÷25 °C to +105 °C
HFXP -Turbo 20	20	14,4		
HFXP -Turbo 25	25	18,2		
HFXP -Turbo 32	32	25,2		
HFXP -Turbo 40	40	33,0		
HFXP -Turbo 50	50	42,0		

Type HFXP-HT Turbo: Pliable conduit medium gauge, corrugated (PC-Blend)

	Sizes outer diameter (mm)	Sizes inner diameter (mm)	Ingress protection	Temperature range
HFXP-HT 12	12	9,0	At least IP 40*	÷45 °C to +150 °C
HFXP-HT 16	16	11,0		
HFXP-HT 20	20	14,1		
HFXP-HT 25	25	18,3		
HFXP-HT 32	32	24,3		
HFXP-HT 40	40	30,0		
HFXP-HT 50	50	38,5		
HFXP-HT 63	63	42,0		

Type HFXS: Flexible protective conduit light gauge, corrugated (PA-6)

	Sizes outer diameter (mm)	Sizes inner diameter (mm)	Ingress protection	Temperature range
HFXS 12	12	9,2	At least IP 40*	÷25 °C to +105 °C
HFXS 16	16	10,7		
HFXS 20	20	14,1		
HFXS 25	25	18,3		
HFXS 32	32	24,3		
HFXS 40	40	31,0		
HFXS 50	50	38,3		
HFXS 63	63	50,2		

Type HFIR Turbo: Rigid conduit light gauge, plain ends with sectional corrugation (PP)

	Sizes outer diameter (mm)	Sizes inner diameter (mm)	Ingress protection	Temperature range
HFIR -Turbo 16	16	13,0	At least IP 40*	÷25 °C to +105 °C
HFIR -Turbo 20	20	16,6		
HFIR -Turbo 25	25	21,7		
HFIR -Turbo 32	32	28,0		
HFIR 40	40	36,0		
HFIR 50	50	45,4		

Type HFPRM Turbo: Rigid conduit medium gauge with plain ends and sectional corrugation

	Sizes outer diameter (mm)	Sizes inner diameter (mm)	Ingress protection	Temperature range
HFPRM -Turbo	16	11,0	At least IP 40*	÷25 °C to +105 °C
HFPRM -Turbo	20	15,0		
HFPRM -Turbo	25	20,0		
HFPRM -Turbo	32	27,0		
HFPRM -Turbo	40	34,0		
HFPRM -Turbo	50	44,0		
HFPRM -Turbo	63	55,0		

Type HFBS-Turbo: Rigid conduit heavy gauge, with plain ends (PP-Blend)

	Sizes Outer diameter (mm)	Sizes Outer diameter (mm)	Ingress protection	Temperature range
HFBS-Turbo 16	16	11,0	At least IP 40*	÷25 °C to +120 °C
HFBS-Turbo 20	20	14,2		
HFBS-Turbo 25	25	18,2		
HFBS-Turbo 32	32	25,2		
HFBS-Turbo 40	40	32,0		
HFBS-Turbo 50	50	42,7		

Accessories: SVG, SVV, SLG, SKGL, SEG, SKEG, SFL, HGL, HEG, HFCL, HM, HFSM, HFSBS, HFS, HFSB, HFAFT/MBS PKGH, KM, HM & HFNB.

* The IP protection is depending of the whole installation including the accessories for the end of the conduits. Higher IP degree than IP 40 can be delivered. The end user is responsible for correct IP degree wrt. to installation. For detailed information see manufacturer datasheet.

Application/Limitation

Tubings are for mechanical protection. Tubings shall not to be used as an insulator.

For use as cable support and protection inside cabinets. The conduit must support the cables not vice versa.

When used outside cabinets, the conduit must give added protection to cables – not wires. Conduits with wires are not substitutes for cables.

Not for use through areas where water or gastightness is required. Nor through areas of different fire or hazardous zones.

Type Approval documentation

Technical info:
"Halogenfree Electric Conduits and accessories" Patrs of catalogue from Diezel Univolt.

Test certificates & test reports:

Type	Test report Nr.	CCA	ÖVE Nr.	Date of issue
HFX	TGM-VA EE 33168 SFT	NTR/AT 1836	69-204-01	2012-09-23
HFXP-TURBO	TGM-VA EE 33167 SFT	NTR/AT 1835	69-203-01	2012-09-23
HFXP-HT	TGM-VA EE 32294 SFT	NTR/AT 1735	69-165-12	2012-06-30
HFXS	TGM-VA EE 32293 SFT	NTR/AT 1747	69-183-08	2012-06-30
HFIR-TURBO	TGM-VA EE 33165 SFT	NTR/AT 1832	69-202-01	2012-06-30
HFPRM-TURBO	TGM-VA EE 34134 SFT	NTR/AT 1831	69-201-01	2012-06-30
HFBS-TURBO	TGM-VA-EE 35528 ECS	NTR/AT 1881	69-210-00	2014-07-01

Tests carried out

Type tests in accordance with IEC 61386-1:1996+A1: 2000, IEC 61386-21: 2002 (1st Edition), IEC 61386-22: 2002 (1st Edition) and IEC 61386-23: 2003 (1st Edition) used in conjunction with IEC 61386-1. IEC / EN 60670-22:206 with IEC / EN 60670-1:2005

Marking of product

Dietzel Univolt - Type - Size - Ref. no.

Periodical assessment

The scope of the periodical assessment is to verify that the conditions stipulated for the Type approval is complied with and that no alterations are made to the product design or choice of materials.

The main elements of the assessment are:
- Inspection on factory samples, selected at random from the production line (where practicable)
- Review of type approval documentation
- Review of possible change in design, materials and performance
- Ensuring traceability between manufacturer's product type marking and Type Approval Certificate.

Assessment to be performed at 2 and 3.5 years and at renewal.

END OF CERTIFICATE