



DET NORSKE VERITAS

TYPE APPROVAL CERTIFICATE

CERTIFICATE NO. E-10451

This is to certify that the
Electric Heating Cable

with type designation(s)
PLEXO, TWISTO, Heat-Shrink Connection 27-1680, 27-1780, 07-5801 & Junction box 07-51**

Manufactured by
BARTEC GmbH
BAD MERGENTHEIM, Germany

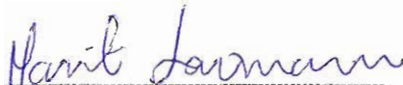
is found to comply with
Det Norske Veritas' Rules for Classification of Ships, High Speed & Light Craft and Det Norske Veritas' Offshore Standards

Application

Voltage (V) up to 254
Max. Maintain Temp. (°C) T6 & T5

Høvik, 2010-11-03
for Det Norske Veritas AS

This Certificate is valid until
2013-12-31


Marit Laumann
Head of Section


DNV local office:
Essen


Kjersti Bakke
Surveyor

S. U. 2011

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.
If any person suffers loss or damage which is proved to have been caused by any negligent act or omission of Det Norske Veritas, then Det Norske Veritas shall pay compensation to such person for his proved direct loss or damage. However, the compensation shall not exceed an amount equal to ten times the fee charged for the service in question, provided that the maximum compensation shall never exceed USD 2 million. In this provision "Det Norske Veritas" shall mean the Foundation Det Norske Veritas as well as all its subsidiaries, directors, officers, employees, agents and any other acting on behalf of Det Norske Veritas.

Product description

1. HSB Heating System 27-1780-****/**** for use in hazardous area:

with Connection kit for HSB: 05-0091-0096, 05-0091-0129, 05-0091-0135 or PLEXO H

Type name:	27-1780-****/****
Voltage:	110 -120 and 208-254 V AC
Ambient temperature:	+120 °C heating switched on +185 °C heating switched off
Ex class:	II 2G Ex e II 200 °C (T2), T3, T4

Type name:	PLEXO H
Voltage:	AC /DC 254 V
Ambient temperature:	+120 °C with heating switched on +160 °C with heating switched off
Ex class:	II 2G Ex e II
Protection class:	IP 66/68
Material:	High temperature thermo plast

2. PSB Heating System 27-1680-****/**** for use in hazardous area:

with Connection kit for PSB: 05-0091-0130, 05-0091-0136 or PLEXO P

Type name:	27-1680-1*00/****
Voltage:	110-120 and 208-254 V AC
Ambient temperature:	+65 °C (heating switched on) +85 °C (heating switched off)
Ex class:	II 2G Ex e II T5,T6

Type name:	PLEXO P
Voltage:	AC /DC 254 V
Ambient temperature:	+65 °C (heating switched on) +85 °C (heating switched off)
Ex class:	II 2G Ex e II
Protection class:	IP 66/68
Material:	High temperature thermo plast

3. Connection system TWISTO-B for safe area:

Type name:	TWISTO
Voltage:	AC 250 V
Ambient temperature:	+80 °C (Permanent) +100 °C (Short time)
Ex class:	Safe area only
Protection class:	IP 66/68
Material:	High temperature thermo plast

4. Heat-shrink connection kit 07-5801-0000 98** for safe area.:

Type name:	07-5801-0000 98**, 07-5801-0000 9560
Voltage:	110, 120 and 230 V AC
Ambient temperature:	+65 °C (heating switched on) +85 °C (heating switched off)

5. Heat Circuit junction boxes for PSB/HSB:

Type name:	07-5103/****, 07-5452-4****/****
Voltage:	AC 250 V
Material:	Polyester glass-fibre reinforced
Ex class:	II 2G Ex e II T6
Protection class:	IP 65/67/54

5. Heat Circuit junction boxes for PSB/HSB for safe area:

Type name:	07-5177-****, 07-5452-****/****
Voltage:	AC 250 V
Material:	Polyester glass-fibre reinforced, aluminium and stainless steel
	IP 6X

Application/Limitation

The information related to Ex certification from recognised test institution is given as information only. Applications where Ex Certified equipment is required will in general be subject to approval case by case based on documentation as required in the DNV Rules.

The installation has to be done in accordance with the manufacturer instructions.

Type Approval documentation

Tests carried out

Ref to ATEX certificates

KEMA 02ATEX2327 U	Parallel circuit HSB heating tape
KEMA 08 ATEX 0110	The HSB heating system type 27-1780-***0/****
KEMA 02ATEX2326 U	Parallel circuit PSB heating tape
KEMA 08 ATEX 0111	The PSB heating system type 27-1680-***0/****
PTB 08 ATEX 1064	Distr. Box 07-5103
PTB 08 ATEX 1062 U	Ex enclosure 07-5185

Marking of product

BARTEC and type designation

Certificate Retention Survey

The scope of the retention/renewal survey 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 survey are:

- Inspection on factory samples, selected at random from the production line (where practicable)
- Results from Production Sample Tests (PST) and Routines (RT) checked (if not available tests according to PST and RT to be carried out)
- 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.

Survey shall be performed at least every second year.

END OF CERTIFICATE