DNV·GL

Certificate No:
TAF000000S

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Jet Fire Protection

with type designation(s)
ProSol FP

Issued to
Protective Concepts Inc.
Pinehurst, United States

is found to comply with
Det Norske Veritas' Offshore Standards

Application :

Approved for use as jet fire protection of steel pipes assemblies.

This Certificate is valid until **2019-07-29**.

Issued at **Høvik** on **2015-07-30**

for **DNV GL**

DNV GL local station: **Certification & Inspection Services**

Approval Engineer: **Ragnar Tonjer**

Petter Langnes
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.

© DNV GL 2014. DNV GL and the Horizon Graphic are trademarks of DNV GL AS.

Job Id: **262.1-019607-1**
Certificate No: **TAF000000S**

Product description

"ProSol FP"
Steel pipe configuration composed of a OD 215,9 mm (8 ½") (Hp/A=107), wall thickness 9,8 mm, steel pipe. A OD 304 mm (12") (Hp/A=110), wall thickness 9,8 mm, 400 mm long steel pipe is slid over the first pipe and welded onto it by steel plates on both sides of the pipe.

The construction is insulated with "ProSol FP" multilayer protection system.

Total thickness of the system is approximately 51 mm.

The layers are joined in the longitudinal direction by a 50 mm wide overlapping part incorporating a "hook and loop" system. The system is fastened by circumferential steel straps each 250 mm along the pipe.

In the circumferential direction the layers are joined by a 50 mm wide overlap fastened by steel straps.

For further details see drawing mentioned under Type Approval documentation below.

Application/Limitation

Approved for use as a jet fire pipe jacket of rating (Type of fire/Type of application/Critical temperature rise (°C)/Period of resistance (minutes)):

JF/pipe assemblies/200/60
JF/pipe assemblies/400/120

Any project specific design solutions arrived at on basis of this certificate are to be further validated by project specific approvals carried out by the appointed verifying authority for each project in each case at the detail engineering stage.

The approval refers only to the jet fire resistance properties of the system.

The jacket is not defined as non-combustible, and should not be used in accommodation or in enclosed areas.

The effect of unprotected valve spindles penetrating the protection system is not accounted for, and must be evaluated for each case.

Each product is to be supplied with its manual for application and maintenance.

Type Approval documentation

Certification in accordance with Standard for Certification No. 1.2, Type Approval, January 2013.

Test report no. 101702063SAT-001_Rev.1 dated 2015-03-20 from Intertek, Elmendorf, United States.

Drawing no. "DNV TA Jacket Layup.idw" Rev. 2 dated 2015-07-27 and no. "Jacket Layer Construction.dwg" Rev. 2 dated 2015-07-27 from Protective Concepts Inc.

Tests carried out

Tested according to ISO 22899-1.

Marking of product

The product or packing is to be marked with name of manufacturer, type designation and fire technical rating.

Periodical assessment

DNV GL's surveyor is to be given permission to perform Periodical Assessments at any time during the validity of this certificate and at least every second year. The arrangement is to be in accordance with procedure described in Standard for certification No. 1.2 Type Approval Item 4.