



Certificate No:
TAF00001RD

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Jet Fire Protection

with type designation(s)
Flexible Jacket (FR Jacket)

Issued to

Mov Limited.
Ulsan, Korea, Republic of

is found to comply with
DNV offshore standards

Application :

Approved for use as jet fire protection of steel pipes.

Issued at **Høvik** on **2022-05-13**

This Certificate is valid until **2027-05-12**.

DNV local station: **Gimhae Station**

for **DNV**

Approval Engineer: **Kristin Grønnæss**

Helene David-Andersen
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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



Form code: TA 251

Revision: 2021-03

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Product description

"Flexible Jacket (FR Jacket)"

Steel pipe with outer diameter 114 mm and wall thick 16 mm ($H_p/A = 73 \text{ m}^{-1}$) insulated as follows:

- Outer layer (outer cloth, mesh, inner cloth)
- 5 layers of ceramic fibre with aluminium sheet in between
- Inner layer (inner cloth, outer cloth)

Total thickness of jacket is 190 mm.

Joints are covered by muffs (300 x 50 mm (W x t)) attached with PVC coated stainless steel wire. The jacket system is also fitted with stainless steel bands every 400 mm.

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

The product may be manufactured at the following locations:

- Mov Limited, Ulsan, Korea

Application/Limitation

Approved for use as a jet fire pipe jacket of rating:

(Type of fire / Type of application / Critical temperature rise ($^{\circ}\text{C}$) / Period of resistance (minutes))

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.

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

Type Approval documentation

Certification in accordance with Class Programme DNV-CP-0338, September 2021.

Test report No. KOSORI-FRC-2201-002 dated 15 March 2022 from Korean Ship and Offshore Research Institute, Gyeongsangnam-do, Korea.

Drawing No. T2202 Rev. A dated 12 January 2022 from maker.

Doc. No. PS2002 Rev. 0, "Product specification" from maker.

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'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 DNV-CP-0338 Section 4.