

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Expansion Joint for Pipe, Slide Type and Flexible Type

with type designation(s)
Sleeve type expansion joint

Issued to

Se-Won Ind. Co., Ltd.
Gyeongsangnam-do, Republic of Korea

is found to comply with
DNV GL rules for classification – Ships Pt.4 Ch.6 Piping systems
DNV GL class programme DNVGL-CP-0185 – Type approval – Mechanical joints

Application :

Product(s) approved by this certificate is/are accepted for installation on all vessels classed by DNV GL.

Temperature range: Maximum 170°C (for 5 bar) & 300°C (for 10 bar)
Max. working press.: 5 bar / 10 bar
Sizes: 50A to 300A

This Certificate is valid until **2021-08-31**.

Issued at **Høvik** on **2016-09-01**

for **DNV GL**

DNV GL local station: **Gimhae MC & FIS**

Approval Engineer: **Adel Samiei**

Marianne Spæren Marveng
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.

Product description

Slip-on mechanical joint (Slip type)

Material:

Body: FCD450/SC410/SCS13/SCS14/SCS16
Gland: SS400/SUS304
Sleeve: SUS304
Sleeve Flange: SS400/SUS304

Sizes: 50/65/80/100/125/150/200/250/300 (For both pressure classes: 5 bar/10 bar)

Application/Limitation

Mechanical joints covered by this certificate are approved for maximum working pressure of 5 and 10 bar.

The slip on joints may be used for piping Class II and III and for the following systems:

- Inert gas: Water seal effluent lines, Scrubber effluent lines,
- Fresh water: Non-essential system
- Sanitary drains
- Sounding and vent: Water tanks/Dry spaces
- Miscellaneous: Service air (non-essential), Brine
Steam (may be used for pipes on deck)

Slip-on joints are not to be used in pipelines in cargo holds, tanks, and other spaces which are not easily accessible.

Slip on joints covered by this certificate shall not be used in systems subject to pressure below atmospheric/vacuum lines.

Each component covered by this certificate to be hydraulic pressure tested to at least 1.5 times maximum allowable working pressure.

Type Approval documentation

Document SW20-15T-008 dated 2015-11-16

Drawing SW-ESW-A001-0 Rev.3 dated 2016 July

Tightness test report dated 2016-05-10 (for both pressure classes) witnessed by DNV GL surveyor

Burst test report dated 2016-05-20 (for both pressure classes) witnessed by DNV GL surveyor

Tests carried out

Tightness test, Burst test

Marking of product

For traceability to this type approval, each product is at least to be marked clearly with:

- Manufacturer's name or trademark
- Type designation

The identification marking shall be located in low stressed areas.

Periodical assessment

For retention of the Type Approval, a DNV GL Surveyor shall perform a periodical assessment – every second year and before the expiry date of this certificate - to verify that the conditions for the type approval are complied with and to witness burst testing of samples of couplings selected at random from stock or from the running production.