

TYPE EXAMINATION CERTIFICATE

This is to certify:

That the Pipeline Clamps

with type designation(s)

Tube Clamp Series A: Light Series, Tube Clamp Series B: Twin-tube Clamps, Tube Clamp Series C: Heavy Series

Issued to

**FKB GmbH Feinwerktechnik Kunststoffverarbeitung
Beleuchtungstechnik
Oberndorf a.N., Germany**

is found to comply with

DIN 3015-1 Fastening clamps – Block clamps – Part 1: Light duty (L)

DIN 3015-2 Fastening clamps – Block clamps – Part 2: Heavy duty (S)

DIN 3015-3 Fastening clamps – Block clamps – Part 3: Double clamps (Z)

DIN 3015-10 Fastening clamps – Block clamps – Part 10: Technical delivery conditions

Application :

The above mentioned pipe clamps are approved for the use in piping systems on board ships and piping systems on ON-Shore / Off-Shore constructions.

Issued at **Hamburg** on **2016-11-22**

for **DNV GL**

This Certificate is valid until **2021-11-21**.

DNV GL local station: **Augsburg**

Approval Engineer: **Christian Kaemmer**

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Olaf Drews
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 Examination Certificate and not to the approval of equipment/systems installed.

Job Id:
Certificate No: **TAP00000M4**

Product description

Materials:

Clamps: Polypropylene PP, Polyamide 6 PA, Thermoplastic Elastomer TPE, Aluminium Al.

Accessories: Steel, Stainless Steel

Outside Pipe: 4 – 101 mm Series A
Diameter: 6 – 42 mm Series B
6 – 406 mm Series C

Temperature Range:

Polypropylene: -30°C to +90°C Polyamide 6: -40°C to +120°C

Aluminium: -40°C to +300 °C Thermoplastic Elastomer: -40°C to +120°C

Limitation

The use of aluminium-clamps is not allowed for pipes containing flammable gases, liquids. Pipe clamps used inside machinery spaces are to be provided with upper and lower steel cover plates.

The selection of the pipe clamps for the corresponding service and right installation are to be in accordance with the instructions of the manufacturer.

Type Examination documentation

Test reports / Assessment reports:

Currenta GmbH Brandtechnologie Test Reports dated 2013 – 2015

Type Approval Assessment report dated 2016-10-27.

Tests carried out

- | | |
|---------------------|------------------------------------|
| • DIN EN ISO 4589-2 | Determination of burning behaviour |
| • EN ISO 5659-2 | Smoke generation |
| • DIN 54837 | Testing of Materials |
| • EN 45545-2 | Fire protection |
| • DIN 5510-2 | Preventive Fire Protection |
| • NF X 70-100-1/-2 | Fire tests |

Marking of product

For traceability to this type examination certificate, each tube clamp is to be marked with:

- "rsb"-logo as registered trademark
- Type designation
- Size

Periodical assessment

For retention of the type examination certificate periodical assessments shall be carried out at production places. The objective of the periodical assessment is to verify that the design and production conditions for the type examination have not been altered.

Main scope of the assessment:

- verification of the production and quality control system
- review of quality control documentation of recent deliveries
- review of drawings in production to verify any design changes which may have an impact on data specified in the type examination certificate, performance and range of application
- verification of the product marking.