

TYPE APPROVAL CERTIFICATE

This is to certify:

That the Conduit, Fitting, Cable Pipe, Box, Etc.

with type designation(s)

PARAB & PARNB conduit with PAHOB system supports, PAGOB & VPGRB straight connectors, VPBRB 90 degree elbow, T & Y distributors

Issued to

**REIKU GmbH
WIEHL, 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 :

For use as cable support and protection inside cabinets.

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

This Certificate is valid until **2017-12-31**.

Issued at **Høvik** on **2015-08-27**

for **DNV GL**

DNV GL local station: **Essen CMC Western Germany**

Approval Engineer: **Nicolay Horn**

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**Marit Laumann
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

Protection and support system for cables and wires, consisting of corrugated tubing, system supports, straight connectors, 90 degree arched elbow, T-and Y-distributors.

Corrugated tubing of various colours made from Polyamid 6 (PA-6) and Polyamid 12 (PA-12), self-extinguishing, halogen free. Resistant to alcohol, grease, mineral oil, diesel oil, benzine and UV.

Conduits:

Type	Sizes Outer diameter (mm)	Ingress protection	Temperature range
PARNB*	10 to 54,5	At least IP 54	÷40 °C to +105 °C
PARAB**	13 to 82,5	At least IP 54	÷40 °C to +105 °C

* For detailed information see "Article report".

** For detailed information see "Datenblatt Rohrtype / Datasheet Corr. Tubing PARAB-NW10-NW70"

Application/Limitation

Tubings are for mechanical protection. Tubings shall not to be used as an insulator.

For use as cable support and protection inside cabinets. The conduit must support the cables not vice versa.

When used outside cabinets, the conduit must give added protection to cables – not wires. Conduits with wires are not substitutes for cables.

Not for use through areas where water or gas tightness is required. Nor through areas of different fire or hazardous zones.

Type Approval documentation

Technical info: "Datenblatt Rohrtype / Datasheet Corr. Tubing PARAB-NW10-NW70
Article report including drawings and Reiku datasheet Corr. Tubing PARNB-NW07 – NW48. Rev. 04 Special operational limitations referring to DIN EN 61386-1 :2008.
"Technische Information Polyblac® PA 70043/2. Datenblatt Rohrtype / Datasheet Corr. Tubing PARNG/B-NW07 – NW95

Test certificate: UL no. YDRQ2.E168970 dated 2010-09-16, File E168970 dated 1995-09-15. "DNV - Audit am 26.02.14"

Test reports: Versuchsbegleitprotokoll (Accompanying log-book for testing) dated 2015-07-30 & 2015-08-04. Accompany log-book of pressure test dated 2015-07-30.
Unterlagen zum DNV – Audit am 2014.02.26. Fire behaviour test report nos. 06-P-4010-TZF91-PR-4607/08/09 dated 2006-02-10,

Tests carried out

Type tests in accordance with IEC 61386-1:2008

Conduits passed the following tests carried out witnessed to DNV inspector:

- Compression Test (Druckprüfung)
- Cold Impact Test (Schlagprüfung an gefrorenem Wellrohr)
- Flexibility Test (Flexibilitätsprüfung)

Job Id: **262.1-002128-4**
Certificate No: **TAE000007F**

- Resistance to flame propagation; Light emitting filament check and flame impingement by means of a burner (Widerstand gegenüber Flammausbreitung; Glühdrahtprüfung und beflamung mittels eines Bunsenbrenners)
- External Influences (Äußere Einflüsse)

Following documents were submitted concerning carried out and passed tests of independent testing facilities:

- Tests acc. to UL1696 concerning:
Heat Aging Test, Cold Bend Test, Heat Shock Test, Crush Test, Impact Test, All Tubing Flame Test, Fitting Strain Relief Test
- Test Report of Klöckner Moeller concerning ingress protection (IP67)

Marking of product

REIKU - Type - Size - Ref. no.

Periodical assessment

The scope of the periodical assessment 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)
- 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 to be performed at least every second year.

END OF CERTIFICATE