

Type Approval Certificate



This is to certify that the undernoted product(s) has/have been tested in accordance with the relevant requirements of the GL Type Approval System.

Certificate No. 47 704 - 03 HH

Company Rich. Klinger Dichtungstechnik GmbH & Co. KG
Am Kanal 8 - 10
2352 Gumpoldskirchen, AUSTRIA

Product Description FLAT GASKETS

Type KLINGERSIL C-4408 / C-4500 / 4509 / 4530

Environmental Category None

Technical Data / TECHNICAL DATA

Range of Application

Type KLINGERSIL C-4408
Density 1.9 [g/cm³]
Compressibility 8% { ASTM F 36 J }
Recovery \geq 50% { ASTM F 36 J }
Tightness 2.5 [ml/min] { DIN 3535-6 }
Soluble chloride content 150 [ppm]
Klinger cold / hot compression, 50 MPa thickness decrease at 23 [°C]: 10%
thickness decrease at 300 [°C]: 22%

RANGE OF APPLICATION

The gaskets may be used under consideration of the mechanical and physical properties as well as the chemical resistance as follows:

- Ship's piping systems excluding cargo lines on Chemical and Gas Tankers carrying propylene oxide and mixtures of ethylene / propylene oxide.
- Maximum allowable working pressure and temperature according to the specification of the manufacturer.

Test Standard • ASTM and DIN

Documents • Test Reports
• Technical Data
• Audit Report

Remarks None

Valid until 2013-11-20

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Type Approval Symbol



File No. II.C.09

Hamburg, 2008-11-20

Germanischer Lloyd

Hanspeter Raschle
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Peter Gierhan
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TECHNICAL DATA

| | |
|--|---|
| Type | KLINGERSIL C-4500 |
| Density | 1.4 [g/cm ³] |
| Compressibility | 12% { ASTM F 36 J } |
| Recovery | =/ > 60% { ASTM F 36 J } |
| Tightness | < 1.0 [ml/min] { DIN 3535-6 } |
| Soluble chloride content | 150 [ppm] |
| Klinger cold / hot compression, 50 MPa | thickness decrease at 23 [°C]: 10% thickness decrease at 300 [°C]: 15% |

| | |
|--|---|
| Type | KLINGERSIL C-4509 |
| Density | 2.0 [g/cm ³] |
| Compressibility | 12% { ASTM F 36 J } |
| Recovery | =/ > 70% { ASTM F 36 J } |
| Soluble chloride content | 150 [ppm] |
| Klinger cold / hot compression, 50 MPa | thickness decrease at 23 [°C]: 9% thickness decrease at 300 [°C]: 7% |

| | |
|--|---|
| Type | KLINGERSIL C-4530 |
| Density | 1.55 [g/cm ³] |
| Compressibility | 10% { ASTM F 36 J } |
| Recovery | =/ > 55% { ASTM F 36 J } |
| Tightness | < 0.1 [mg/sm] { DIN 28090-2 } |
| Klinger cold / hot compression, 50 MPa | thickness decrease at 23 [°C]: 10% thickness decrease at 300 [°C]: 15% |

The selection of the gaskets for the corresponding application and the appropriate installation is to be in acc. with the instructions of the manufacturer.

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This certificate is issued on the basis of "Guidelines for the Performance of Type Approvals Part 1, Procedure".