

TYPE APPROVAL CERTIFICATE

This is to certify:**That the Gaskets and Sealings**

with type designation(s)

Flat Gasket - KLINGER®PSS130, KLINGER®PSS150, KLINGER®PSS200, KLINGER®PSS300

Issued to

**Klinger AG Egliswil
Egliswil, AG, Switzerland**

is found to comply with

DIN 52913**DIN 52910****ASTM F152****ASTM F36****Application :****Products approved by this certificate are accepted for installation on all vessels classed by DNV GL****Temperature range:** see manufacturer's instructions**Max. working press.:** see manufacturer's instructions**Design:****Sizes:**Issued at **Hamburg** on **2019-05-06**for **DNV GL**This Certificate is valid until **2024-05-05**.DNV GL local station: **Augsburg**Approval Engineer: **Guido Friederich****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 Approval Certificate and not to the approval of equipment/systems installed.



PRODUCT DESCRIPTION

KLINGERmilam®PSS

Asbestos free flat gasket material. Material composition based on a phlogopite mica fiber-free lamellar structure with a perforated stainless steel reinforcement of 0,1 mm.

Stainless steel material types: EN 1.4401 / AISI 316

Dimensions:

Sizes: 1200 x 1000 mm
 Tolerances: Thickness acc. DIN 28091-1
 Length ± 5 mm, width ± 5 mm

Technical data for KLINGERmilam®PSS gaskets :

Technical data	Standard	PSS130	PSS150	PSS200	PSS300	Unit
Compressibility	ASTM F36A	12-20	12-20	15-23	18-26	%
Recovery	ASTM F36A	30-45	35-45	32-42	28-38	%
Ignition loss	DIN 52911	≤ 5	≤ 5	≤ 5	≤ 15	%
Stress relaxion	DIN 52913	≥ 33	≥ 33	≥ 33	≥ 30	MPa
Stress relaxion	BS 7531	≥ 28	≥ 28	≥ 28	≥ 20	MPa
Tang insert material/thickness		AISI 316 / 0,10				mm
Continuous Service temperature		max. 900 °C	max. 900°C	max. 900°C	max. 900°C	°C
Gas leakage He @ [test conditions]		≤ 0,10 [30/6]	≤ 0,10 [30/6]	≤ 0,15 [30/6]	≤ 1,50 [30/6]	mg/s*m ⁻¹ MPa/bar
Stress		≤ 100	≤ 90	≤ 80	≤ 80	MPa
Thickness		1.3	1.5	2.0	3.2	mm

APPLICATION

The above listed gasket material sheet type may be used under consideration of the mechanical and technical characteristics as well as physical and chemical properties for the following applications:

On board ships and other structures classed by DNV GL as follows:
 Ship's piping systems, pressurized items and machinery containing e.g. the following fluids:
 non flammable gases, oil, fuel oil, water.

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

LIMITATION / EXCLUSIONS

- Pipe lines for LNG and flammable gas systems and cryogenic fluids.
- Cargo lines on chemical and gas tankers carrying flammable and/or noxious media, propylene oxide and mixtures of ethylene and propylene oxide.

TYPE APPROVAL DOCUMENTATION

Klinger Stauchversuch Stress, PSS 130 to PSS 300, dated 2013-10-17
Klinger Test Reports gas leakage, PSS130,PSS150,PSS200,PSS300, dated 2013-12-10
Druckstandversuch DIN52913, PSS130,PSS150,PSS200,PSS300, dated 2013-11-20
Test Report 2.2 EN 10204, PSS130,PSS150,PSS200,PSS300, dated 2019-01-23
EN 10204 3.1 Inspection Certificate EN 10204 for PSS130,PSS200,PSS300, dated 2018-08-28
Specification sheets for Klinger Milam Laminate gasket sheets, types
PSS130, Edition 02-2019; PSS150, Edition 09/2016
PSS200; Edition 06/2018; PSS300, Edition 09/2016
Klinger Egliswil_PSM + PSS Data comparing, dated 2019-01-29
EN 10204 3.1 Inspection Certificate for PSS200
Klinger Ash content analysis of different graphit laminate materials, dated: 2019-01-29
Klinger Ash content analysis of materials PSS 130, PSS150, PSS200, PSS300, dated 2013-11-12
SWISO Audit Report, Standards ISO 9001(2015); ISO 14001(2015), dated 2016-10-27
Klinger Test Report gas leakage measurement, compressive stability, dated 2013-11-12
Type Approval Assessment Report (Audit Report), dated 2019-01-11

MARKING OF PRODUCT

For traceability of products, marking shall be legible and indelible.

The flat gasket shall be clearly marked with the following minimum signs:

- Manufacturer's name / label
- Product type

PERIODICAL ASSESSMENT

A condition for retention of the type approval certificate in its validity period is that periodical assessments are successfully carried out. The objective of the periodical assessment is to verify that the conditions for the type approval have not been altered. Regulations for the periodical assessment of the type approval certificate are to be found in the DNVGL Class Programme CP-0338.

It is further to be noted that the Society shall be informed of any:

- Modifications to the product which are liable to affect its characteristics and functions, as originally specified and tested;
- Shifting of the production site and additional production site.

If such notifications are not made, the validity of the type approval certificate terminates.

END OF CERTIFICATE