

# TYPE APPROVAL CERTIFICATE

Certificate no.:  
**TAP00001WR**  
Revision No:  
**1**

## This is to certify:

that the **Gaskets and Sealings**

with type designation(s)

**TEMAFAST, TEMAFAST ECONOMY, TEMAPLUS, TEMAFLX, TEMASIL, TEMASIL NG, TEMASIL HT**

issued to

**TEMAC, a.s.**

**Zverinek, Czech Republic**

is found to comply with

**DIN 28090-2 Static gaskets for flange connections – Gaskets made from sheets – Part 2: Special test procedures for quality assurance**

**DIN 3535-6 Gaskets for gas supply – Part 6: Gasket materials based on fibres, graphite or polytetrafluoroethylene (PTFE) for gas valves, gas appliances and gas mains**

**ASTM F36:15(2021) Standard Test Method for Compressibility and Recovery of Gasket Materials**

**ASTM F146 Standard Test Methods for Fluid Resistance of Gasket Materials**

## Application:

Refer to section **APPLICATION** in the certificate.

**Temperature range:** Refer to certificate and manufacturer's instruction  
**Max. working press.:** Refer to certificate and manufacturer's instruction  
**Design:** Plate material  
**Sizes:** 1500 x 1000 mm, 1500 x 1500 mm, 1500 x 3000 mm

Issued at **Hamburg** on **2024-11-04**

This Certificate is valid until **2029-09-24**.

DNV local unit: **Prague CMC**

Approval Engineer: **Thilo Pabst**

for **DNV**



Digitally Signed By:  
Sven Klinger  
Location: DNV Hamburg,  
Germany

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.

LEGAL DISCLAIMER: Unless otherwise stated in the applicable contract with the holder of this document, or following from mandatory law, the liability of DNV AS, its parent companies and their subsidiaries as well as their officers, directors and employees ("DNV") arising from or in connection with the services rendered for the purpose of the issuance of this document or reliance thereon, whether in contract or in tort (including negligence), shall be limited to direct losses and under any circumstance be limited to 300,000 USD.



## PRODUCT DESCRIPTION

All mentioned products of the TEMA-Series from TEMAC, a.s. are "Asbestos Free" flat gaskets produced from compressed synthetic fibre.

### Dimensions of plate material:

- Standard sizes: 1500 x 1000 mm, 1500 x 1500 mm, 1500 x 3000 mm (Tolerances:  $\pm 2\%$ )
- Standard thicknesses: 0.4 mm to 6.4 mm (Tolerances: 0,4 to 0,8 mm:  $\pm 0,1$  mm; 1.0 to 6.4 mm:  $\pm 10\%$ )

### TEMAFAST - Organic fibres with NBR binder, colour Red.

#### Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.6 – 1.9	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	10 - 25	%
Recovery	ASTM F36J	--	$\geq 50$	%
Gas leakage	DIN 3535-6	--	$\sim 0.1$	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	$\leq 5$	%
		ASTM Fuel B 5h / 23°C	$\leq 10$	%

### TEMAFAST ECONOMY - Organic fibres with NBR/SBR binder, colour Yellow

#### Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.6 – 1.9	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	5 - 15	%
Recovery	ASTM F36J	--	$\geq 50$	%
Gas leakage	DIN 3535-6	--	$\sim 0.1$	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	$\leq 10$	%
		ASTM Fuel B 5h / 23°C	$\leq 15$	%

### TEMAPLUS - Aramid fibres with special NBR binder, colour Green.

#### Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.7 – 2.0	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	5 - 15	%
Recovery	ASTM F36J	--	$\geq 50$	%
Gas leakage	DIN 3535-6	--	$\sim 0.03$	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	$\leq 3$	%
		ASTM Fuel B 5h / 23°C	$\leq 5$	%

**TEMAFLEX – Aramid/mineral fibres mix with special NBR binder, colour Green**

Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.7 – 2.1	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	5 - 15	%
Recovery	ASTM F36J	--	≥45	%
Gas leakage	DIN 3535-6	--	~0.07	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	≤5	%
		ASTM Fuel B 5h / 23°C	≤5	%

**TEMASIL – Aramid fibre with special NBR binder, colour Blue.**

Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.7 – 2.0	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	5 - 15	%
Recovery	ASTM F36J	--	≥50	%
Gas leakage	DIN 3535-6	--	~0.04	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	≤4	%
		ASTM Fuel B 5h / 23°C	≤5	%

**TEMASIL NG – Fibrous/rubber joint with special filler/NBR mixture, colour Blue.**

Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.7 – 2.0	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	5 - 15	%
Recovery	ASTM F36J	--	≥50	%
Gas leakage	DIN 3535-6	--	~0.06	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	≤3	%
		ASTM Fuel B 5h / 23°C	≤5	%

**TEMASIL HT – Aramid/mineral fibres mix with NBR rubber, colour Light blue**

Values for 2.0 mm thickness:

Technical data	Standard	Conditions	Value	Unit
Density	DIN 28090-2	--	1.7 – 2.0	g/cm <sup>3</sup>
Compressibility	ASTM F36J	--	5 - 15	%
Recovery	ASTM F36J	--	≥50	%
Gas leakage	DIN 3535-6	--	~0.04	mg/s x m
Thickness increase	ASTM F146	IRM 903 Oil 5h / 150°C	≤3	%
		ASTM Fuel B 5h / 23°C	≤5	%

## APPLICATION

This is a Non-Class Type Approval Certificate (TA-NONCL - for products where a Type Approval is not mandatory) on basis of test according to international standards.

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 as follows:  
Ship's piping systems as specified in DNV-RU-SHIP Pt.4 Ch.6 Piping systems and cargo lines on oil tankers.
- The selection of the gaskets for the corresponding application and appropriate installation has to be in accordance with the instructions of the manufacturer.
- Piping/Gaskets shall be hydrostatically tested: 1.5 times of the system design pressure (DNV-RU-SHIP Pt.4 Ch.6 – Piping)
- Piping of cargo handling systems on Oil Tanker shall be electrically bonded. (DNV-RU-SHIP Pt.5 Ch.5 – Oil Tanker)

## LIMITATION / EXCLUSIONS

- Pipelines for LNG, 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

### Renewal 2024\_Rev. 1

Declaration of conformity acc. DIN EN ISO 17050-1, TEMAC a.s. 2024-09-19  
Inspection Certificates acc. EN 10204 of all 7 products, TEMAC 2024  
Test report BS6920 (quality water)\_Temasil Economy\_ KIWA GmbH 2024-01-24  
WRAS Certificate BS6920 (quality water)\_TEMASIL NG\_Water Regulations Approval Scheme Ltd. 2024-03  
WRAS Certificate BS6920 (quality water)\_TEMAFAST ECONOMY\_Water Regulations Approval Scheme Ltd. 2024-01  
Test report BS6920 (quality water)\_ KIWA GmbH\_Temasil NG 2024-03-26  
Hygienic Certificate\_National Institute of Public Health NIH (Poland)\_ Temasil NG 2022-07-12  
Hygienic Certificate\_National Institute of Public Health NIH (Poland)\_ Temafast Economy 2022-07-12  
Prüfprotokoll DIN3535-6\_Prüfanstalt Maschinenbauindustrie, s.U.\_ TEMASIL NG 2024-01-19  
Prüfprotokoll DIN3535-6\_Prüfanstalt Maschinenbauindustrie, s.U.\_ TEMASIL HT 2024-01-19  
DIN-DVGW Type Examination Certificate DIN 3535-6: Temasil NG 2024-02-08  
DIN-DVGW Type Examination Certificate DIN 3535-6: Temasil HT 2023-08-31  
ISO Certificates 9001 valid until 2026-07-24, 14001 valid until 2025-07-21\_TÜV Süd  
Production locations & Status\_2024-09-19

DNV documents:

Type Approval Assessment Report, dated 2024-09-18, DNV Prague

Manufacturing plant(s):

TEMAC, a.s., Nymburska 53, CZ-28913 Zverinek, Czech Republic

Documentation to previous Revisions of this Type Approval Certificate to find in the corresponding Revision and in the GL TA Certificate no.: 20778-04 HH.

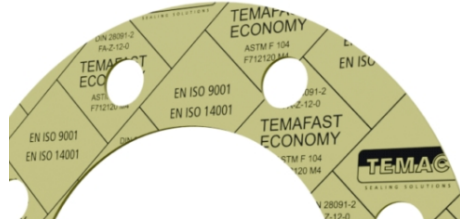
## TESTS CARRIED OUT

Documentation of tests performed are the basis for this Type Approval as referenced in the list above and DNV Ref.-Nos. 262.1-031927.

### MARKING OF PRODUCT

For traceability of products, marking shall be legible and indelible.  
 Products are to be marked at least as follows:

*Marking sample:*

<ul style="list-style-type: none"> <li>- Manufacturer's name / label</li> <li>- Product type / name</li> </ul>	<p>Marking sample:</p> 
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### PERIODICAL ASSESSMENT

For retention of the Type Approval, a DNV Surveyor shall perform periodical assessment to verify that the conditions for the Type Approval are complied with (refer to the Class Programme DNV-CP-0338, Sec. 4).

To check the validity of this certificate, please look it up in <https://approvalfinder.dnv.com>

END OF CERTIFICATE