

13 October 2021  
IIG/AS-SR  
Expert: Strauß  
File-No.: 21-00581-AB01  
DVGW CERT File-No.: 21-0420-GNE

## R E P O R T

on type test  
of the gasket material based on graphite  
"Tensograph B-P1"

according to DIN 3535-6 "Gaskets for gas supply - Part 6: Gasket materials based on synthetic fibres, graphite or polytetrafluorethylene (PTFE) for gas valves, gas applicances and gas mains" (April 2019)

### **Applicant:**

TENSOGRAPH LLC / Unichimtek Group  
2, Zavodskaya street  
mkr. Klimovsk, Podolsk  
142181 Moscow region  
Russia



(This report includes 3 pages and 3 attachments)

## **I. General**

The company TENSOGRAF LLC / Unichimtek Group, Moscow region, Russia, assigned the DVGW-Forschungsstelle, Test Laboratory Gas, at the Engler-Bunte-Institut of the Karlsruher Institute of Technology (KIT) to test the gasket-material „Tensograph B-P1" according to DIN 3535-6.

The necessary test samples have been placed at the disposal of the test laboratory on 18 June 2021.

## **II. Test basis**

Basis for testing is DIN 3535-6 "Gaskets for gas supply - Part 6: Gasket materials based on synthetic fibres, graphite or polytetrafluorethylene (PTFE) for gas valves, gas appliances and gas mains (April 2019)".

## **III. Description of the gasket material**

According to the information of the manufacturer the material "Tensograph B-P1" is a gasket material based on graphite. A stainless steel foil is covered with extrafoliated graphite on both sides. The material is used to produce gaskets for gas fittings, gas appliances and gas mains.

The standard indication of the gasket material is:

DIN 3535-GR

## **IV. Testing**

Testing was performed according to paragraph 7.3 of the standard DIN 3535-6. The results of this test only refer to samples provided by the manufacturer. In attachment 2 the results are compared with the requirements according to paragraph 6, table 2 of the standard for a gasket material based on graphite.

**V. List of documents**

This test report contains the following one-sided attachments:

Attachment 1: Data sheet	1 page
Attachment 2: Test results	1 page
Attachment 3: Measuring tools and testing equipment	1 page

**VI. Summary**

The gasket material "Tensograph B-P1", based on graphite, of the company TENSOGRAF LLC / Unichimtek Group, Moscow region, Russia, was type tested according to DIN 3535-6 (April 2019). The comparison shows the required and actual values. As far as the requirements had to be tested according to paragraph 7.2 of the standard, they are fulfilled.

A duplication of the test report in parts requires the written approval of the test laboratory. Only the complete test report is allowed to be duplicated and handed over.

Karlsruhe, 13 October 2021

DVGW-FORSCHUNGSSTELLE  
Test Laboratory Gas

(Head of test laboratory)

(Expert)



(Dr. J. Hoffmann)



(A. Strauß)

**Report on type test of a gasket material based on graphite**

Applicant: TENSOGRAF LLC / Unichimtek Group  
2, Zavodskaya street  
mkr. Klimovsk, Podolsk  
1215 Moscow region  
Russia

Standard reference: DIN 3535-6 (April 2019)

**Purpose of testing: DIN-DVGW-Certification**

Method of surveillance: Annual inspection test

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Manufacturer: Applicant

Product: Gasket material based on graphite

Indication: Tensograph B-P1

Class: GR

Standard indication: 3535-GR

The requirements of the above mentioned standard are fulfilled.

Karlsruhe, 13 October 2021

(Head of test laboratory)


(Expert)



(Dr. J. Hoffmann)



(A. Strauß)

Attachment to the test report, dated 13. October 2021, on type test of the gasket material "Tensograph B-P1"			DIN 3535-6 (2019)	
File-No.: 21-00581-AB01			DVGW CERT File-No.: 21-0420-GNE	
Gasket material based on graphite			class: GR	
No.	Property	Unit	Requirement	Test result
1	Appearance of the surface		faultless	faultless
2	Thickness	mm	1,5 + 0,15	
3	Total thickness	mm	2,0 + 0,15	2,00
4	Density	g/cm <sup>3</sup>	1,4 ± 0,05	1,42
5	Test of deformation behaviour			
5.1	Compression modulus at room temperature	%	30 to 45	32,4
5.2	Percentage creep relaxation at room temperature	%	-	4,0
5.3	Compression modulus at elevated temperature (300 °C/16 h)	%	≤ 5	1,1
6	Leak rate λ <sub>1,5</sub>	mgs <sup>-1</sup> m <sup>-1</sup>	≤ 0,1	0,078
7	Change of mass after immersion in test-liquid and drying - Delamination	% -	≤ 1,5 no delamination	-0,3 no delamination
<p><b>Applicant:</b> TENSOGRAF LLC / Unichimtek Group 2, Zavodskaya street mkr. Klimovsk, Podolsk 1215 Moscow region Russia</p>			 <p>DVGW-Forschungsstelle Prüflaboratorium Gas Engler-Bunte-Ring 1-7 D - 76131 Karlsruhe</p>	



Attachment to the test report, dated 13 October 2021, on type test of the gasket material "Tensograph B-P1"

File-No.: 21-00581-AB01

DVGW CERT File-No.: 21-0420-GNE

Type: GR

Product code: 5123/5124/5125

Test Standard: DIN 3535-6 (April 2019) "Gaskets for gas supply - Part 6: Gasket materials based on synthetic fibres, graphite or poly-tetrafluorethylene (PTFE) for gas valves, gas appliances and gas mains".

Used measuring tools:

IIG/2701	IIG/2704	Thickness gauge
IIG/2207		Compressive creep testing instrument
IIG/2802		Analytical balance
IIG/2207		Leakage testing instrument

Used testing equipment:

IIG/6702	Eccentric-press
IIG/6237	Heat treating furnace

Date: 11.10.21 Examiner: Thauer

**Applicant:** TENSOGRAF LLC / Unichimtek Group  
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mkr. Klimovsk, Podolsk  
1215 Moscow region  
Russia

 **DVGW-Forschungsstelle**  
**DVGW** Prüflaboratorium Gas  
Engler-Bunte-Ring 1-7 D - 76131 Karlsruhe