

Dr.-Ing. T. Bäumer

Prüflabor - Ingenieurbüro - Prüfstände

TEADIT Deutschland GmbH
Schanzenstr. 35

51063 Köln

TEST Report

Flame - resistance tests according to ISO 19921 Report IBB 2274

This report confirms the testing of a representative flange seal in compliance with ISO 19921, 2005.

Manufacturer	TEADIT Deutschland GmbH Schanzenstr. 35 51063 Köln
Test Sample	Flange seal: TEADIT type NA-1002 107 mm x 61 mm x 1,5 mm Nominal bore: DN 50 (Test) Pressure rating: PN 16 Sealing material: Aramid fiber / NBR
Date of Testing	08 October 2019
Test Report	3 pages
Testing location	Laboratory of Dr.-Ing. T. Bäumer GmbH, Altensenner Weg 75, D - 32052 Herford
Test requirements	The tests were carried out strictly in accordance with ISO 19921, 2005.
Participants	Mr. Dr. T. Bäumer Dr.-Ing. T. Bäumer GmbH

Test examination

The test sample was subjected to fire for 30 minutes at a temperature of 800°C (+/- 50°C), while water circulated inside the sample at a pressure of 5 barg (+/- 0,2 bar). The temperature of the water at the inlet was 80 °C (+/- 2 °C) and at the outlet max. 85 °C. The flames were created by gas burners. After the flame application the sample was subjected to a pressure of 1,5 times of nominal pressure for 5 minutes.

Instrumentation

Temperature: 3 Thermocouples, Ni Cr Ni, accuracy 1 K.

Pressure: Pressure transmitter, accuracy 0,5 %.

PC-system: AD converter board, software for measuring, Personal Computer

The measuring devices are controlled by an accredited calibration service.

Test results

Time of test start (ignition of burners): 09.20 am

Temperatures and pressure during burn period

Time	p	T ₁	T ₂	T _{Fire1}
[s]	[barg]	[°C]	[°C]	[°C]
.0	4.9	78.3	78.8	814.8
120.0	4.9	78.7	79.7	775.9
240.0	5.0	79.0	80.2	846.9
360.0	4.9	79.4	80.6	788.9
480.0	5.0	79.5	80.7	797.1
600.0	5.0	79.5	80.8	817.2
720.0	5.1	79.6	80.7	790.0
840.0	5.0	79.6	80.6	787.0
960.0	5.0	79.5	80.7	767.4
1080.0	5.1	79.5	80.7	812.7
1200.0	5.0	79.3	80.6	784.8
1320.0	5.0	79.6	80.6	793.7
1440.0	5.0	79.6	80.8	822.5
1560.0	5.1	79.7	80.8	816.4
1680.0	5.0	79.7	80.9	807.9
1800.0	5.0	79.7	81.0	802.3

Gas consumption (Propan): $m = 3,7 \text{ kg}$

Proof pressure after flame application: $p = 24 \text{ barg}$

Volumetric flow rate of water: $V = 4,1 \text{ m}^3/\text{h}$

Comments on the results

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Conclusion

The test sample fulfilled the test requirements according to ISO 19921, 2005.
No leakages were observed during the test.

Herford, 08 October 2019

Dr.-Ing. T. Bäumer
GmbH



Mr. Dr. T. Bäumer
Consultant engineer