



FH Münster

Center of Sealing
Technologies

Bürgerkamp 3
D-48565 Steinfurt

Certificate

Z14010701

The flat gasket type
KLINGER® soft-chem
of the manufacturer

Rich. Klinger Dichtungstechnik GmbH & Co. KG
Am Kanal 8-10
A-2352 Gumpoldskirchen
Austria

has been tested in compliance with TA Luft in accordance with the VDI-guideline 2200 (2007-06) by the Department of Gasketing Research of the University of Applied Sciences Münster. The test was verified in a first time test with following test conditions:

Initial gasket thickness:	2 mm
Test flange:	DN40/PN40, EN1092-1, type B, welding-neck, 1.4571
Initial gasket stress:	30 MPa
Thermal storage temperature:	230 °C
Thermal storage duration:	48 h
Test conditions:	23 °C

The leak rate, measured at room temperature, with a helium mass spectrometer and a differential pressure of 1 bar resulted in a leak rate of:

$$6.8 \cdot 10^{-7} \frac{\text{mbar} \cdot \text{l}}{\text{s} \cdot \text{m}}$$

Residual gasket stress (Q_R): 7.3 MPa.

The maximum acceptable leak rate of $1.0 \cdot 10^{-4} \frac{\text{mbar} \cdot \text{l}}{\text{s} \cdot \text{m}}$ according to VDI-guideline 2440 (2000-11) has not been exceeded. The above mentioned gasket is in accordance with TA Luft.

The blowout safety test in accordance to VDI-guideline 2200 resulted for

Test step 1 at Q_R :	60 bar, no blowout
Test step 2 at 5 MPa (Q_{Smin}):	60 bar, no blowout

This test certificate is only valid in combination with the test report 14010701.

Steinfurt, 2014-03-12

Prof. Dr. A. Riedl