



amtec

**Gasket tests according to
ASTM, Shell, EN 13555,
VDI 2440, VDI 2200, DIN 3535
DIN 28090, DIN 52913,**



Determination of gasket characteristics

SERVICE OFFER

valid from 2013-08

American Standards ASTM

Room Temperature Tightness Test (ROTT) – ASTM WK10193 Draft 10.2 (dated October 2006)

- leakage test
 - single test (High Pressure)
 - single test (Low Pressure)
 - double test (High Pressure)
 - double test (Low Pressure)

Hot Blow-Out Test (HOBT) – ASTM WK18046 (dated March 2008)

- leakage test
 - single test
 - double test
 - single test (with thermal cycles)
 - double test (with thermal cycles)

ASTM F36-99 (dated 2003)

- compressibility and recovery test
 - single test
 - triple test

ASTM F37-06 (dated 2006)

- sealability test – test method B
 - single test
 - triple test

ASTM F38-00 (dated 2006)

- creep relaxation test – test method B
 - single test
 - triple test

ASTM F2837-11 (dated 2011)

- hot compression test
 - single test
 - triple test



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American Standards ASTM

ASTM F1574-03a (dated 2009)

- compressive strength test
 - single test (one gasket stress level)
 - triple test (one gasket stress level)
 - single test (6 gasket stress levels)
 - Triple test (6 gasket stress levels)

Hot Mechanical Test (HOMT)

- creep test (thermal cycles)
 - single test
 - double test

API 6FB (dated 1998)

- fire test – leakage test

FSA-G-605-11 (dated 2011)

- leakage test
 - determination γ -Factor
 - determination m -Factor



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Shell-Type Acceptance Testing

MESC SPE 85/300 (dated September 2012)

- 3.3.2 Fugitive Emissions
 - leakage test – RT
 - leakage test - T (≤ 400 °C)
- 3.3.3 Fire Test
 - API 6FB (dated 1998)
- 3.3.4 Room Temperature Operation Tightness Test (ROTT)
 - DIN EN 13555 (dated February 2005)
 - compression test - RT
 - compression test – T (≤ 400 °C)
 - creep-/ relaxation test – RT
 - creep-/ relaxation test – T (≤ 400 °C)
 - leakage test
- 3.3.5 High Temperature Operational Tightness Test (HOTT)
 - leakage test with thermal cycles ($T \leq 400$ °C)
- 3.3.6 Hot Blowout Test
 - leakage test ($T \leq 400$ °C)
- 3.3.11 Cold Compression / Hot Recovery Test
 - Compression test ASTM F36-99 (dated 2003)
- 3.3.12 Leak Test
 - leakage test ASTM F37-06 (dated 2006 – test method B)
- 3.3.13 Gasket Adhesion



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European Standards EN

DIN EN 13555 (dated February 2005)

- compression test at ambient temperature
determination of compression curve at ambient temperature
- compression test at ambient temperature
determination of the characteristics Q_{SMAX} and E_G at ambient temperature
- compression test at elevated temperature $T (\leq 400 \text{ }^\circ\text{C})$
determination of the characteristics Q_{SMAX} and E_G at elevated temperature
- creep-/relaxation test at ambient temperature
determination of the characteristic P_{QR}
- creep-/relaxation test at elevated temperature – $T (\leq 400 \text{ }^\circ\text{C})$
determination of the characteristic P_{QR}
- leakage test
1 internal pressure level
diagram for increasing gasket stress ($Q_{MIN/L}$)
diagram for decreasing gasket stress ($Q_{SMIN/L}$)

- gasket characteristics for one gasket material:
Leakage test at 1 pressure level,
Compression tests at ambient and 2 elevated temperatures,
creep relaxations tests at 3 different stress levels and 3 temperatures
single test (13 tests)
double test (26 tests)

BS 7531 (dated 2006)

- compressibility test
Triple test
- residual stress test
Double test
- gas permeability test
Triple test



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German Standards DIN and VDI

DIN 28090-1 (dated September 1995)

- compression test at ambient temperature
 - max. initial compressive stress at room temperature (σ_{VO})
 - modulus of elasticity (E_D)
- compression test at elevated temperature ($T \leq 400 \text{ °C}$)
 - modulus of elasticity (E_D)
- creep compression test at elevated temperature $T(\leq 400 \text{ °C})$
 - max. initial compressive stress at ambient temperature (σ_{VO})
- creep-/relaxation test
 - creep factor (Δh_D)
- leakage test
 - 1 internal pressure level
 - diagram for increasing stress ($\sigma_{VU,L}$)
 - diagram for decreasing stress ($\sigma_{BU,L}$)

DIN 28090-2 (dated September 1995)

- compressive creep test
 - compression modulus at ambient temperature (ϵ_{KSW})
 - percentage creep relaxation at ambient temperature (ϵ_{KRW})
 - compression modulus at elevated temperature ($\epsilon_{WSW,T}$)
 - percentage creep relaxation at elevated temperature ($\epsilon_{WRW,T}$)
- leakage test
 - leak rate

DIN 3535-6 (dated January 2011)

- leakage test
 - leak rate

DIN 52913 (dated April 2002)

- compression creep test
 - compression creep strength ($\sigma_{dE/16}$)

VDI 2440 (dated November 2000)

- leakage test – TA-Luft

VDI 2200 (dated June 2007)

- leakage test – safety against blow-out



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High temperature tests (up to 600 °C) on request.

High pressure test up to 500 bar on request.

Special tests, leakage tests and long term tests on request.

Tests according to API 6FB, FAS-G-605-11, ASTM F1574-03a und ASTM F2837-11 are not part of the accreditation.