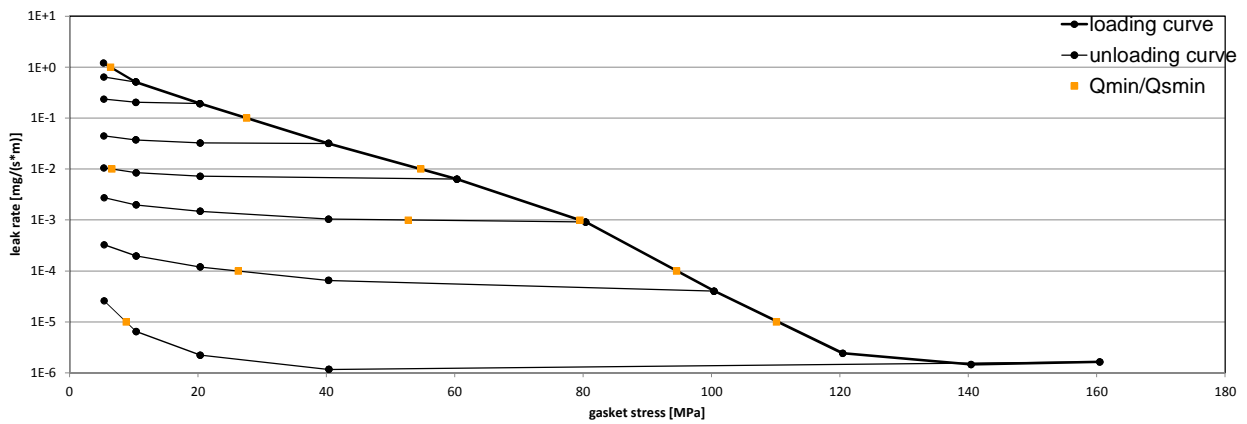


| | |
|---------------------------------|--|
| Company Address | Gambit-Lubawka Sp. z o.o., ul. Wojska Polskiego 16, 58-420 Lubawka, Poland |
| Gasket Type | AF-U |
| Sealing element dimensions [mm] | 92 x 49 x 2 |

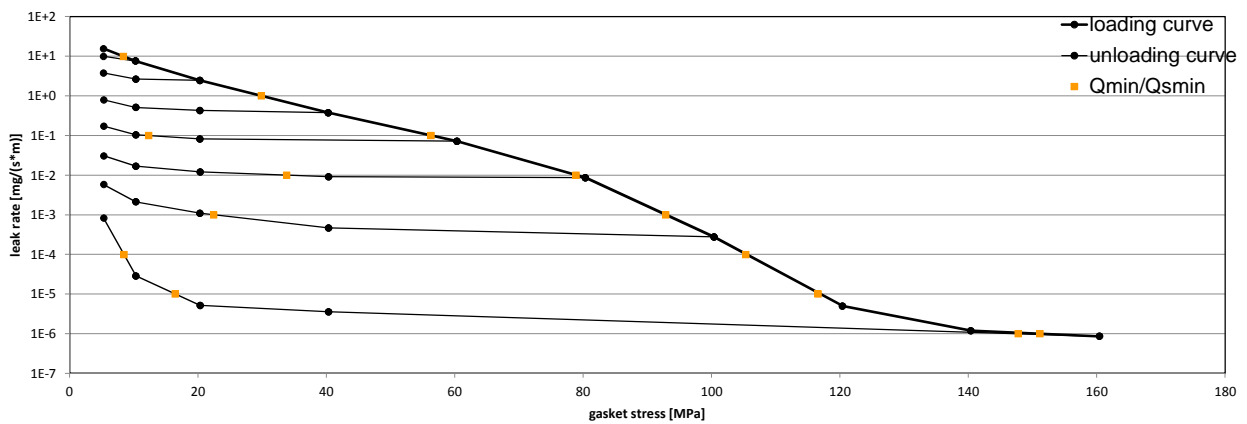
| L [mg/(s*m)] | Q _{min/L} [MPa] | Minimum stress to seal Q _{min/L} (at assembly), Q _{Smin/L} (after off-loading) for p = 10 bar | | | | | | | | | |
|------------------|--------------------------|---|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| | | Q _{Smin/L} [MPa] | | | | | | | | | |
| | | Q _A = 10 MPa | Q _A = 20 MPa | Q _A = 40 MPa | Q _A = 60 MPa | Q _A = 80 MPa | Q _A = 100 MPa | Q _A = 120 MPa | Q _A = 140 MPa | Q _A = 160 MPa | |
| 10 ⁰ | 6 | 5 | 5 | 5 | 5 | 5 | 5 | | | 5 | |
| 10 ⁻¹ | 28 | | | 5 | 5 | 5 | 5 | | | 5 | |
| 10 ⁻² | 55 | | | | 7 | 5 | 5 | | | 5 | |
| 10 ⁻³ | 79 | | | | | 53 | 5 | | | 5 | |
| 10 ⁻⁴ | 95 | | | | | | 26 | | | 5 | |
| 10 ⁻⁵ | 110 | | | | | | | | | 9 | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |

Leakage - ambient temperature / inner pressure = 10 bar



| L [mg/(s*m)] | Q _{min/L} [MPa] | Minimum stress to seal Q _{min/L} (at assembly), Q _{Smin/L} (after off-loading) for p = 40 bar | | | | | | | | | |
|------------------|--------------------------|---|-------------------------|-------------------------|-------------------------|-------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--|
| | | Q _{Smin/L} [MPa] | | | | | | | | | |
| | | Q _A = 10 MPa | Q _A = 20 MPa | Q _A = 40 MPa | Q _A = 60 MPa | Q _A = 80 MPa | Q _A = 100 MPa | Q _A = 120 MPa | Q _A = 140 MPa | Q _A = 160 MPa | |
| 10 ⁻² | 5 | 5 | 5 | 5 | 5 | 5 | 5 | | | 5 | |
| 10 ⁻¹ | 8 | 5 | 5 | 5 | 5 | 5 | 5 | | | 5 | |
| 10 ⁰ | 30 | | | 5 | 5 | 5 | 5 | | | 5 | |
| 10 ⁻¹ | 56 | | | | 12 | 5 | 5 | | | 5 | |
| 10 ⁻² | 79 | | | | | 34 | 5 | | | 5 | |
| 10 ⁻³ | 93 | | | | | | 22 | | | 5 | |
| 10 ⁻⁴ | 105 | | | | | | | | | 8 | |
| 10 ⁻⁵ | 117 | | | | | | | | | 16 | |
| 10 ⁻⁶ | 151 | | | | | | | | | 148 | |

Leakage - ambient temperature / inner pressure = 40 bar



Note: the content of darkened cells was not determined respectively is unnecessary

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21.05.2013

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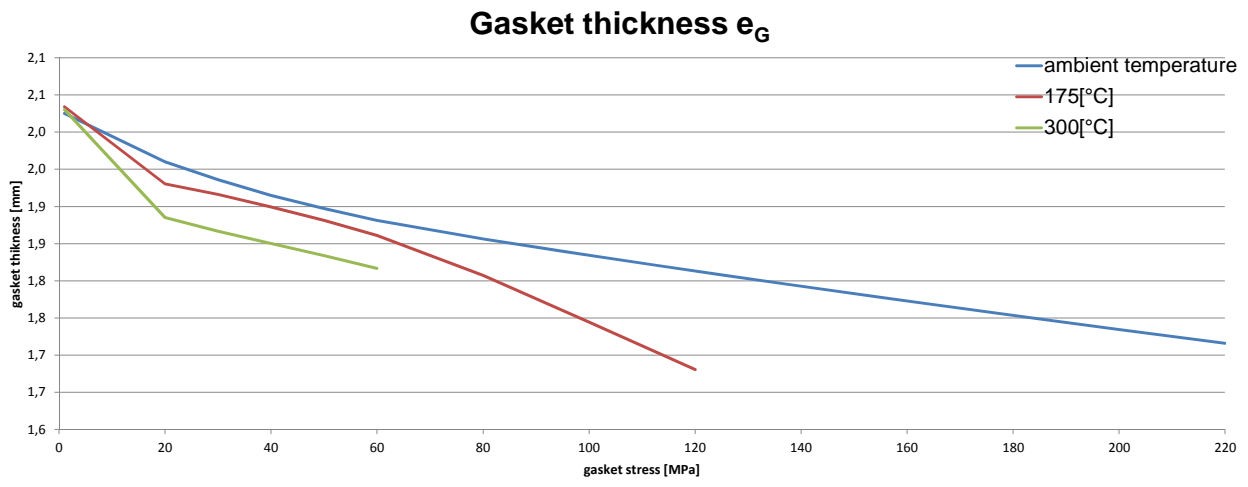
Center of Sealing Technologies, Bürgerkamp 3, 48565 Steinfurt, Germany

| | |
|---------------------------------|--|
| Company Address | Gambit-Lubawka Sp. z o.o., ul. Wojska Polskiego 16, 58-420 Lubawka, Poland |
| Gasket Type | AF-U |
| Sealing element dimensions [mm] | 92 x 49 x 2 |

| Relaxation ratio P_{GR} for stiffness $C = 500$ kN/mm | | | | |
|---|-----------------------|------------------------|------------------------|--|
| Gasket stress [MPa] | temperature 1 [25 °C] | temperature 2 [175 °C] | temperature 3 [300 °C] | |
| Stress level 1 [30 MPa] | 0,95 | 0,83 | 0,55 | |
| Stress level 2 [50 MPa] | 0,97 | 0,85 | 0,58 | |
| | | | | |
| | | | | |
| PQR at Q_{Smax} | 0,99 at 220 MPa | 0,75 at 120 MPa | 0,57 at 60 MPa | |

| Maximal applicable gasket stress Q_{Smax} | | | |
|---|--|--|--|
| Q_{Smax} [MPa] [25 °C] | Q_{Smax} [MPa] – temperature 1 [175 °C] | Q_{Smax} [MPa] – temperature 2 [300 °C] | |
| 220 | 120 | 60 | |

| Sekant unloading modulus of the gasket E_G [MPa] and gasket thickness e_G [mm] | | | | | | |
|--|---------------------|------------|------------------------|------------|------------------------|------------|
| Gasket stress [MPa] | ambient temperature | | temperature 1 [175 °C] | | temperature 2 [300 °C] | |
| | E_G [MPa] | e_G [mm] | E_G [MPa] | e_G [mm] | E_G [MPa] | e_G [mm] |
| 0 | | 2,07 | | 2,07 | | 2,08 |
| 1 | | 2,03 | | 2,03 | | 2,03 |
| 20 | 2028 | 1,96 | 2167 | 1,93 | 7193 | 1,89 |
| 30 | 2671 | 1,94 | 2729 | 1,92 | 4418 | 1,87 |
| 40 | 3404 | 1,91 | 3064 | 1,90 | 4780 | 1,85 |
| 50 | 4146 | 1,90 | 3480 | 1,88 | 4810 | 1,83 |
| 60 | 4724 | 1,88 | 3622 | 1,86 | 5218 | 1,82 |
| 80 | 5776 | 1,86 | 4092 | 1,81 | | |
| 100 | 6601 | 1,83 | 4384 | 1,74 | | |
| 120 | 7080 | 1,81 | 4684 | 1,68 | | |
| 140 | 7575 | 1,79 | | | | |
| 160 | 7904 | 1,77 | | | | |
| 180 | 8254 | 1,75 | | | | |
| 200 | 8486 | 1,73 | | | | |
| 220 | 8722 | 1,72 | | | | |



Note: the content of darkened cells was not determined respectively is unnecessary Rev - No: 1 Creation date of this sheet: 21.05.2013