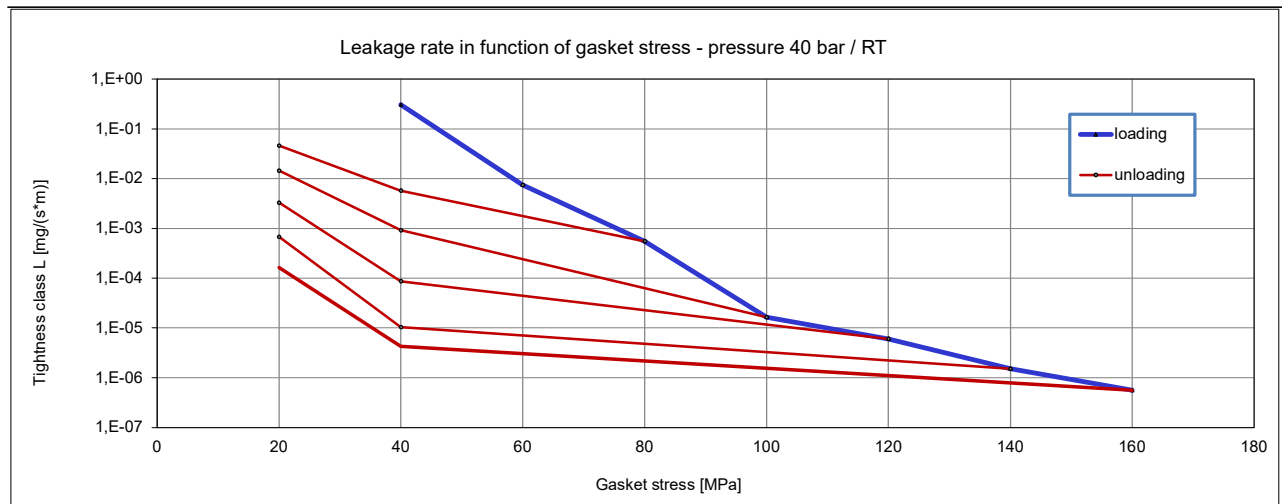


|                                                                                   |                                                                                                                                                                   |           |                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  | <b>LABORATORY OF SEALING MATERIALS</b><br>43-382 Bielsko-Biała, ul. Szyprów 17<br>tel. +48 33 8184133    e-mail: lbmu@spetech.com.pl    www.laboratory.spetech.eu |           | <br><br>LB – 124/02 |
| Company                                                                           | Centrum Specjalistycznych Usług Technicznych "Spetech" Sp. z o.o.                                                                                                 |           |                                                                                                                                                                                           |
| Gasket Type                                                                       | DRYFLEX® ALLOY C276 TUI 910                                                                                                                                       |           |                                                                                                                                                                                           |
| Dimensions [mm]                                                                   | 69 x 53 x 4                                                                                                                                                       |           |                                                                                                                                                                                           |
| Stiffness (kN/mm)                                                                 | 500                                                                                                                                                               |           |                                                                                                                                                                                           |
| Calculation type EN 1591-1                                                        | a) flat gasket;                                                                                                                                                   | EN 1514-6 |                                                                                                                                                                                           |

#### Factors acc. to EN 13555 to use in calculation standard EN 1591-1:2009/ :2013

Minimum level of surface pressure required for leakage rate class L on assembly  $Q_{min/L}$  and after off-loading  $Q_{Smin/L}$  at room temperature (RT)

| Internal pressure [bar] |                   | 40                                             |                  |                  |                  |                  |                   |                   |                   |                   |                   |  |  |
|-------------------------|-------------------|------------------------------------------------|------------------|------------------|------------------|------------------|-------------------|-------------------|-------------------|-------------------|-------------------|--|--|
| L [mg/(s*m)]            | $Q_{min/L}$ [MPa] | $Q_{Smin/L}$ [MPa] for effective gasket stress |                  |                  |                  |                  |                   |                   |                   |                   |                   |  |  |
|                         |                   | $Q_A = 20$ [MPa]                               | $Q_A = 30$ [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] | $Q_A = 200$ [MPa] |  |  |
| $10^{-0}$               | 20                |                                                |                  |                  |                  | 20               | 20                | 20                | 20                | 20                |                   |  |  |
| $10^{-1}$               | 46                |                                                |                  |                  |                  | 20               | 20                | 20                | 20                | 20                |                   |  |  |
| $10^{-2}$               | 58                |                                                |                  |                  |                  | 35               | 23                | 20                | 20                | 20                |                   |  |  |
| $10^{-3}$               | 75                |                                                |                  |                  |                  | 70               | 39                | 27                | 20                | 20                |                   |  |  |
| $10^{-4}$               | 90                |                                                |                  |                  |                  |                  | 73                | 39                | 29                | 23                |                   |  |  |
| $10^{-5}$               | 110               |                                                |                  |                  |                  |                  |                   | 105               | 42                | 35                |                   |  |  |
| $10^{-6}$               | 149               |                                                |                  |                  |                  |                  |                   |                   |                   | 126               |                   |  |  |
| $10^{-7}$               |                   |                                                |                  |                  |                  |                  |                   |                   |                   |                   |                   |  |  |
| $10^{-8}$               |                   |                                                |                  |                  |                  |                  |                   |                   |                   |                   |                   |  |  |



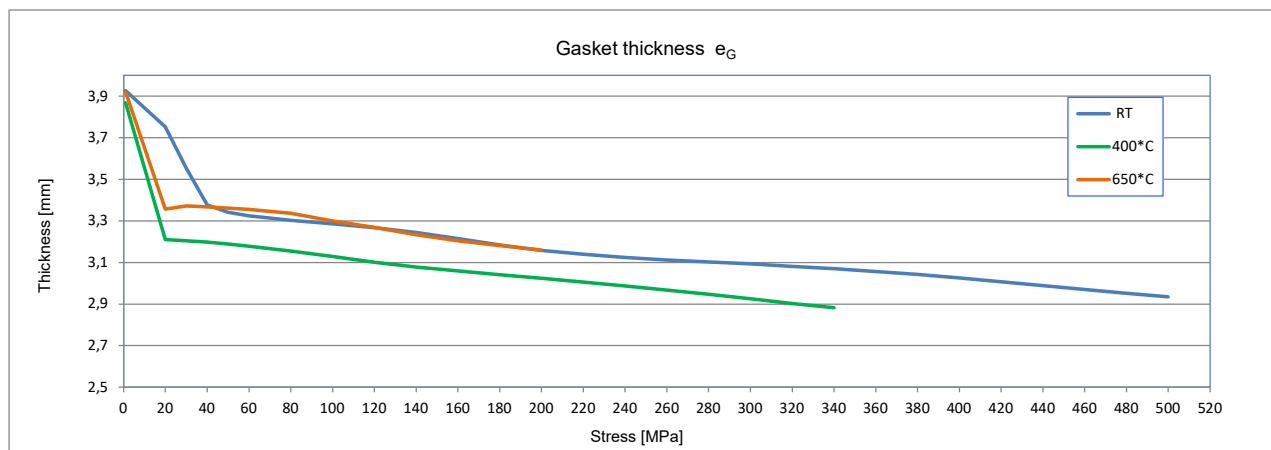
| Temperature   | RT    |       |               |                |            |         |
|---------------|-------|-------|---------------|----------------|------------|---------|
| Gasket stress | $E_G$ | $e_G$ | $C=500$ kN/mm |                | $Q_{smax}$ | $\mu_G$ |
|               |       |       | $P_{QR}$      | $\Delta_{eGc}$ |            |         |
| [MPa]         | [MPa] | [mm]  | [ - ]         | [mm]           | [MPa]      | [ - ]   |
| 1             |       | 3,926 |               |                | 500        | NDA     |
| 20            | 3773  | 3,753 |               |                |            |         |
| 30            | 8170  | 3,553 |               |                |            |         |
| 40            | 11488 | 3,378 |               |                |            |         |
| 50            | 13335 | 3,342 |               |                |            |         |
| 60            | 14249 | 3,324 |               |                |            |         |
| 80            | 14997 | 3,302 |               |                |            |         |
| 100           | 15561 | 3,285 | 0,94          | 0,017          |            |         |
| 120           | 16194 | 3,267 |               |                |            |         |
| 140           | 17073 | 3,244 |               |                |            |         |
| 160           | 18289 | 3,214 |               |                |            |         |
| 180           | 20279 | 3,184 |               |                |            |         |
| 200           | 22178 | 3,158 | 0,97          | 0,020          |            |         |
| 220           | 24354 | 3,139 |               |                |            |         |
| 240           | 27596 | 3,125 |               |                |            |         |
| 260           | 29534 | 3,112 |               |                |            |         |
| 280           | 31883 | 3,102 |               |                |            |         |
| 300           | 32178 | 3,092 |               |                |            |         |
| 320           | 35153 | 3,082 |               |                |            |         |
| 340           | 36130 | 3,070 |               |                |            |         |
| 360           | 37445 | 3,057 |               |                |            |         |
| 380           | 38142 | 3,042 |               |                |            |         |
| 400           | 39070 | 3,025 |               |                |            |         |
| 420           | 39799 | 3,007 |               |                |            |         |
| 440           | 40493 | 2,988 |               |                |            |         |
| 460           | 41268 | 2,970 |               |                |            |         |
| 480           | 42528 | 2,951 |               |                |            |         |
| 500           | 43131 | 2,934 | 0,99          | 0,023          |            |         |

| Temperature   | 400°C |       |              |                 |            |
|---------------|-------|-------|--------------|-----------------|------------|
| Gasket stress | $E_G$ | $e_G$ | C= 500 kN/mm |                 | $Q_{smax}$ |
|               |       |       | $P_{QR}$     | $\Delta e_{Gc}$ |            |
| [MPa]         | [MPa] | [mm]  | [ - ]        | [mm]            | [MPa]      |
| 1             |       | 3,868 |              |                 | 500        |
| 20            | 6803  | 3,209 |              |                 |            |
| 30            | 9670  | 3,204 |              |                 |            |
| 40            | 10991 | 3,198 |              |                 |            |
| 50            | 11031 | 3,189 |              |                 |            |
| 60            | 11494 | 3,178 |              |                 |            |
| 80            | 12861 | 3,155 |              |                 |            |
| 100           | 13903 | 3,128 | 0,66         | 0,104           |            |
| 120           | 15875 | 3,101 |              |                 |            |
| 140           | 18153 | 3,079 |              |                 |            |
| 160           | 18693 | 3,058 |              |                 |            |
| 180           | 20643 | 3,041 |              |                 |            |
| 200           | 24095 | 3,024 | 0,89         | 0,068           |            |
| 220           | 24241 | 3,005 |              |                 |            |
| 240           | 26644 | 2,987 |              |                 |            |
| 260           | 27759 | 2,967 |              |                 |            |
| 280           | 28698 | 2,947 |              |                 |            |
| 300           | 29249 | 2,925 |              |                 |            |
| 320           | 29569 | 2,902 |              |                 |            |
| 340           | 30481 | 2,881 |              |                 |            |
| 360           | 31228 | 2,860 |              |                 |            |
| 380           | 31890 | 2,841 |              |                 |            |
| 400           | 32777 | 2,823 |              |                 |            |
| 420           | 33313 | 2,805 |              |                 |            |
| 440           | 34381 | 2,786 |              |                 |            |
| 460           | 34716 | 2,768 |              |                 |            |
| 480           | 35479 | 2,750 |              |                 |            |
| 500           | 36205 | 2,731 | 0,91         | 0,137           |            |

NDA

| Temperature   | 650°C |       |              |                 |            |
|---------------|-------|-------|--------------|-----------------|------------|
| Gasket stress | $E_G$ | $e_G$ | C= 500 kN/mm |                 | $Q_{smax}$ |
|               |       |       | $P_{QR}$     | $\Delta e_{Gc}$ |            |
| [MPa]         | [MPa] | [mm]  | [ - ]        | [mm]            | [MPa]      |
| 1             |       | 3,920 |              |                 | 200        |
| 20            | 1694  | 3,356 |              |                 |            |
| 30            | 9707  | 3,372 |              |                 |            |
| 40            | 11283 | 3,367 |              |                 |            |
| 50            | 12662 | 3,362 |              |                 |            |
| 60            | 13845 | 3,356 |              |                 |            |
| 80            | 15077 | 3,336 |              |                 |            |
| 100           | 15974 | 3,299 | 0,72         | 0,085           |            |
| 120           | 16649 | 3,269 |              |                 |            |
| 140           | 16540 | 3,234 |              |                 |            |
| 160           | 19711 | 3,204 |              |                 |            |
| 180           | 21605 | 3,181 |              |                 |            |
| 200           | 21495 | 3,159 | 0,88         | 0,070           |            |

NDA



|              |                 |                                      |            |                          |
|--------------|-----------------|--------------------------------------|------------|--------------------------|
| Description: | $E_G$           | Modulus of elasticity                | $Q_{smax}$ | Maximum surface pressure |
|              | $e_G$           | Gasket or sealing element thickness  | $\mu_G$    | Static friction factor   |
|              | $P_{QR}$        | Creep relaxation factor              | $C$        | Stiffness                |
|              | $\Delta e_{Gc}$ | Gasket thickness change due to creep |            |                          |