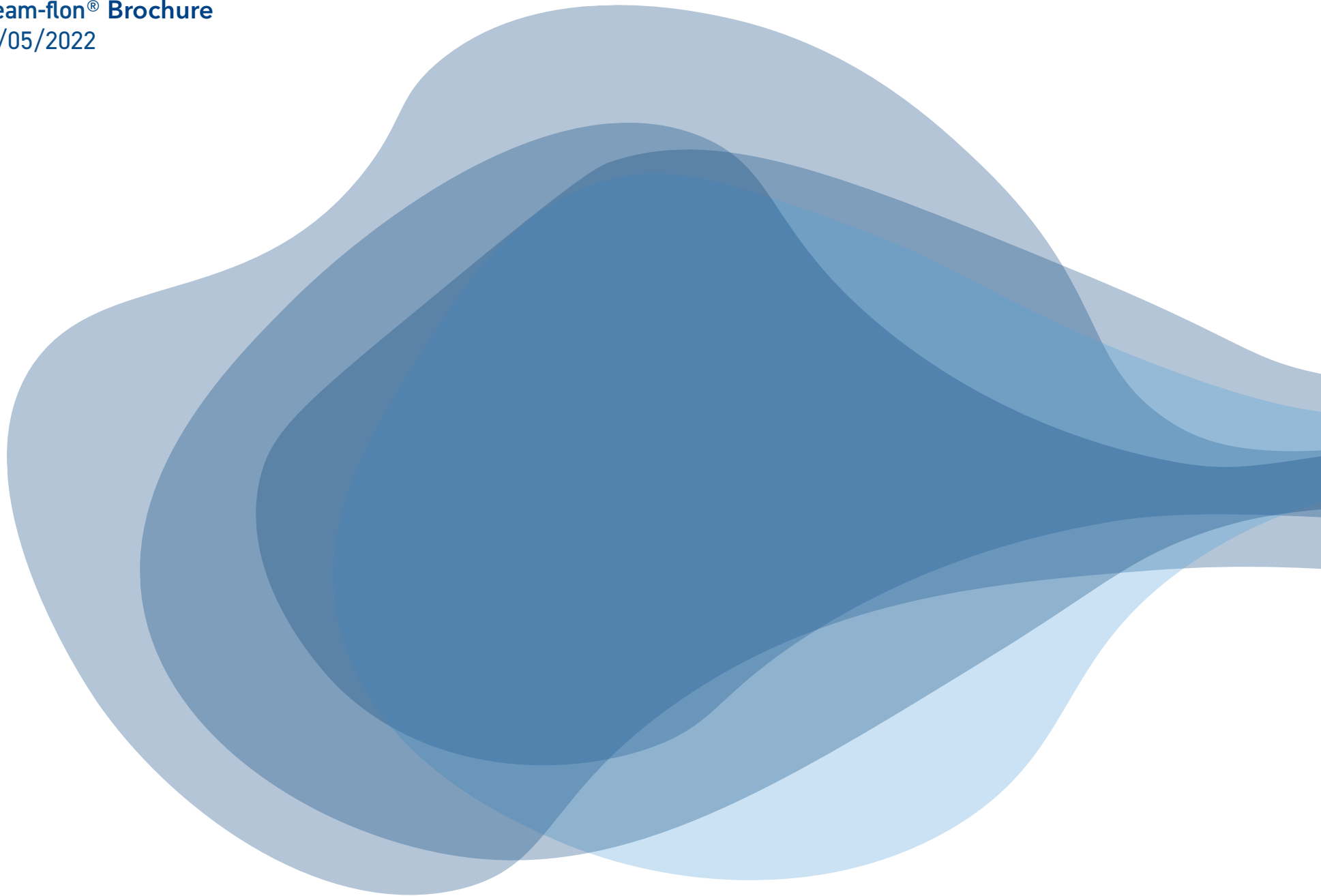




UP

**Steam-flon®**

Property of Ultrapharma BV



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Steam-Flon® is a registered trademark of Ultrapharma BV

## 1. Introduction

Ultrapharma has developed "Steam-Flon®" for sanitary gaskets and some special products. This material is a unique blend of non pigmented PTFE and 316L stainless steel powder.

The mechanical properties of this compound are very interesting, because it eliminates the cold flow problems we experience with for example virgin PTFE.

## 2. Cold flow

Cold flow is the term we use for movement of plastic under permanent load/stress, a state that is used with static seals. At elevated temperatures cold flow increases. Material of the gasket is slowly moving towards the inside of the fitting and creates a beat. This beat leads to flow restriction and is a potential area for particles/bacterial entrapment. The Steam-Flon® material takes the cold flow out of the equation, creating a very stable seal with no leaks even at large temperature fluctuations.

### 3. Compliance

|                    |                                                                                                                                                        |
|--------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------|
| Material:          | TFM/316L                                                                                                                                               |
| Compound number:   | CMD-1019                                                                                                                                               |
| Colour:            | Bronze                                                                                                                                                 |
| Temperature range: | -195°C to 288°C                                                                                                                                        |
| Odor:              | None                                                                                                                                                   |
| Storage stability: | Indefinitely                                                                                                                                           |
| Meets:             | FDA CFR 177.1550<br>USP 35 Cytotoxicity Testing <87><br>USP 35 Class VI 121°C <88><br>USP 35 Physicochemical Testing <661><br>EC10/2011 Migration test |
| Conform with:      | ADIF (Animal Derived Ingredient Free) BSE/TSE                                                                                                          |

### 4. General advice

|                        |           |
|------------------------|-----------|
| SIP:                   | excellent |
| CIP:                   | excellent |
| Mineral oils & grease: | excellent |
| WFI:                   | excellent |
| Sterilization:         | excellent |
| Steam Sterilization:   | excellent |

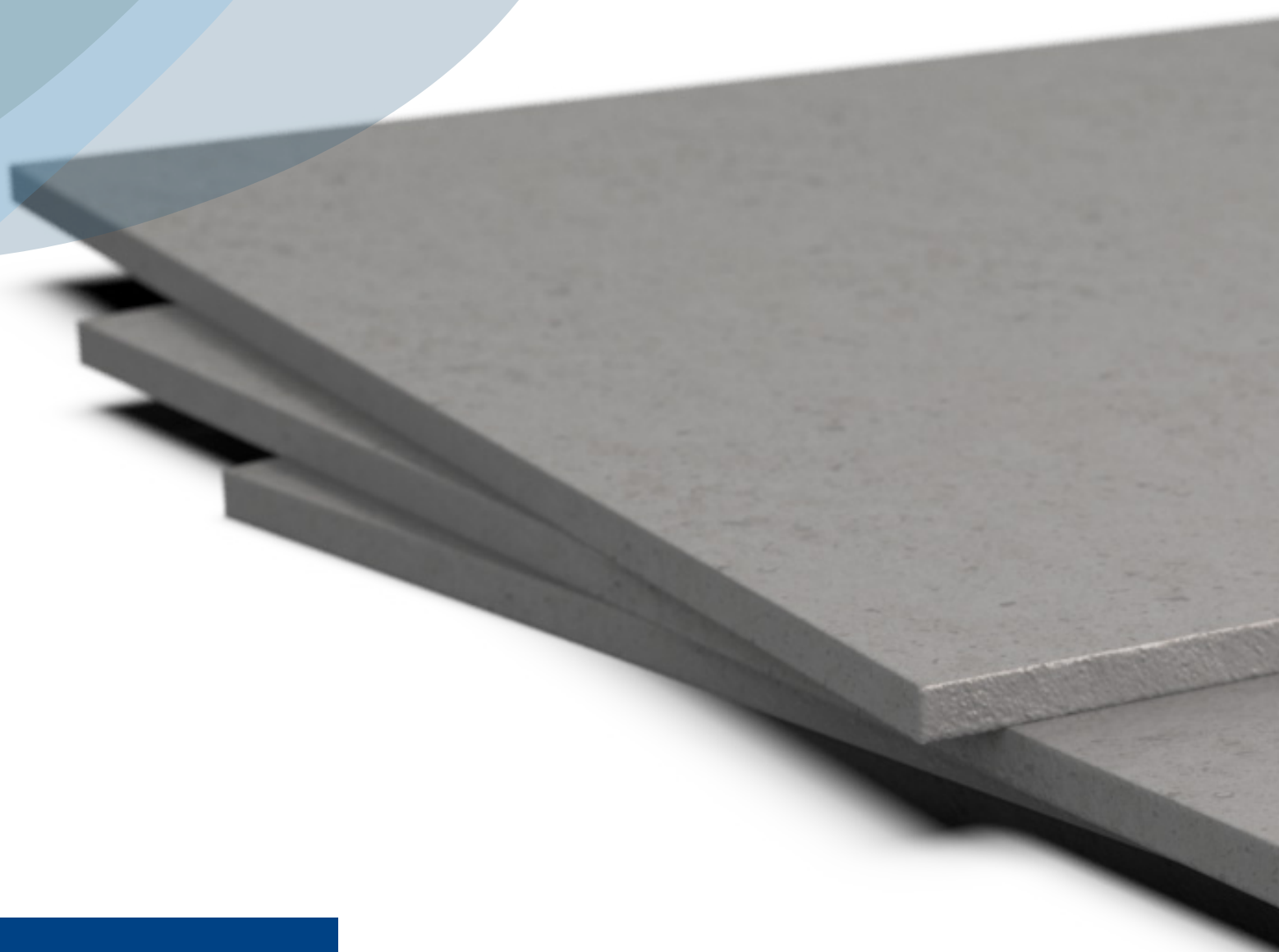
For more information and all the results of the individual compliance testing, our Validation guide is available upon request or sign up for our members hub on the website; [www.ultrapharma.com](http://www.ultrapharma.com).

### 5. Removable Steam-Flon®

The removable Steam-Flon® is a gasket that we developed because of these unique mechanical properties. The gasket is made out of two mating parts. In between these two parts you can place any kind of product as long as it is not thicker than 1,00 mm. Products like orifice plates, screens and perforated discs can be used.

The removable Steam-Flon® gasket can be dismantled after use, cleaned and reassembled again without any problem. Perfect if a screen needs to be cleaned. Orifice plates can be exchanged rapidly and Sock screens can now be equipped with a Steam-Flon® seal.





## 6. Steam-flon® Sheet

Not all applications can be fitted with standard Tri-Clamp style gaskets. Heat exchangers for example sometimes require odd shape flat gaskets which can be waterjet cut from sheet.

Steam-Flon® is available in 3,00 mm sheet.

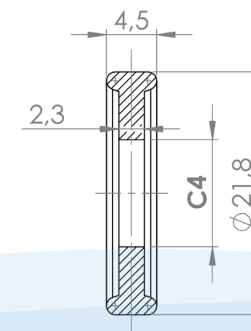
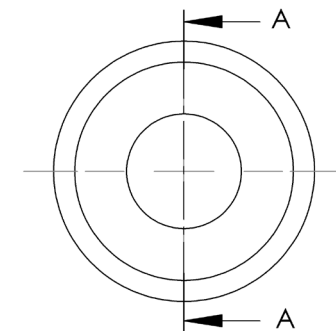


## 7. Available sizes

### Mini

| ASME BPE size | C4 mm (inch) | Recommended Torque | Recommended Clamp |
|---------------|--------------|--------------------|-------------------|
| ½"            | 9.6 (0.38)   | 1,5 Nm             | 13LAH             |
| ¾"            | 16.0 (0.63)  | 1,5 Nm             | 13LAH             |

| DIN 32676 size | C4 mm (inch) | Recommended Torque | Recommended Clamp |
|----------------|--------------|--------------------|-------------------|
| DN06           | 4 (0.16)     | 1,5 Nm             | 13LAH             |
| DN08           | 6 (0.24)     | 1,5 Nm             | 13LAH             |
| DN10           | 8 (0.31)     | 1,5 Nm             | 13LAH             |
| DN12           | 10 (0.39)    | 1,5 Nm             | 13LAH             |
| DN14           | 12 (0.47)    | 1,5 Nm             | 13LAH             |
| DN16           | 14 (0.55)    | 1,5 Nm             | 13LAH             |
| DN18           | 16 (0.63)    | 1,5 Nm             | 13LAH             |



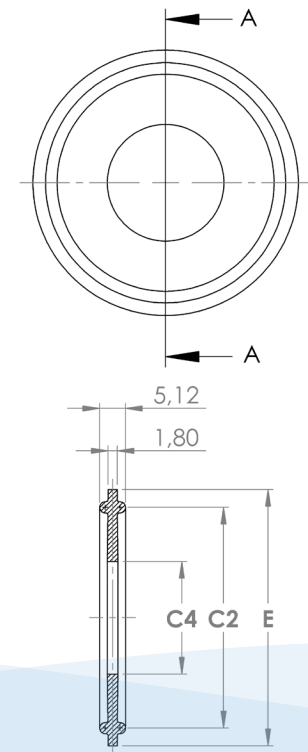
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## Type 1

| ASME BPE size | E mm (inch)  | C4 mm (inch) | C2 mm (inch) | Recommended Torque | Recommended Clamp |
|---------------|--------------|--------------|--------------|--------------------|-------------------|
| 1"            | 50.5 (1.99)  | 22.2 (0.87)  | 43.5 (1.71)  | 2 Nm               | 13LAH             |
| 1½"           | 50.5 (1.99)  | 35.0 (1.38)  | 43.5 (1.71)  | 2 Nm               | 13LAH             |
| 2"            | 64.0 (2.52)  | 47.6 (1.87)  | 56.5 (2.22)  | 4 Nm               | 13LAH             |
| 2½"           | 77.5 (3.05)  | 60.3 (2.37)  | 70.5 (2.78)  | 6 Nm               | 13LAH             |
| 3"            | 91.0 (3.58)  | 72.9 (2.87)  | 83.5 (3.29)  | 8 Nm               | 13LAH             |
| 4"            | 119.0 (4.69) | 97.4 (3.83)  | 110.0 (4.33) | on request         | 13MHP             |
| 6"            | 167.0 (6.57) | 146.9 (5.78) | 156.4 (6.16) | on request         | 13MHP             |

| SMS 3017 size | E mm (inch)  | C4 mm (inch) | C2 mm (inch) | Recommended Torque | Recommended Clamp |
|---------------|--------------|--------------|--------------|--------------------|-------------------|
| DN25          | 50.5 (1.99)  | 22.8 (0.90)  | 43.5 (1.71)  | 2 Nm               | 13LAH             |
| DN38          | 50.5 (1.99)  | 35.8 (1.41)  | 43.5 (1.71)  | 2 Nm               | 13LAH             |
| DN51          | 64.0 (2.52)  | 48.8 (1.92)  | 56.5 (2.22)  | 4 Nm               | 13LAH             |
| DN101.6       | 119.0 (4.69) | 97.9 (3.85)  | 110.0 (4.33) | on request         | 13MHP             |



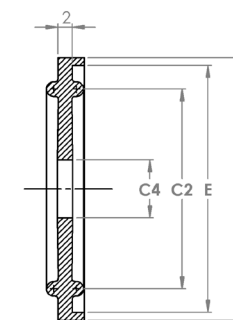
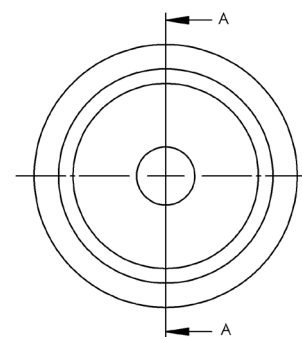
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## Type 2

| DIN 32676 A | E mm (inch)  | C4 mm (inch) | C2 mm (inch) | D mm (inch)  | Recommended Torque | Recommended Clamp |
|-------------|--------------|--------------|--------------|--------------|--------------------|-------------------|
| DN08        | 34.0 (1.34)  | 8.0 (0.31)   | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN10        | 34.0 (1.34)  | 10.0 (0.39)  | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN15        | 34.0 (1.34)  | 16.0 (0.63)  | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN20        | 34.0 (1.34)  | 20.0 (0.79)  | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN25        | 50.5 (1.99)  | 26.0 (1.02)  | 43.5 (1.71)  | 52.7 (2.07)  | 4 Nm               | 13LAH             |
| DN32        | 50.5 (1.99)  | 32.0 (1.26)  | 43.5 (1.71)  | 52.7 (2.07)  | 4 Nm               | 13LAH             |
| DN40        | 50.5 (1.99)  | 38.0 (1.50)  | 43.5 (1.71)  | 52.7 (2.07)  | 4 Nm               | 13LAH             |
| DN50        | 64.0 (2.52)  | 50.0 (1.97)  | 56.5 (2.22)  | 66.2 (2.61)  | on request         | 13LAH             |
| DN65        | 91.0 (3.58)  | 66.0 (2.60)  | 83.5 (3.29)  | 93.2 (3.67)  | on request         | 13MHP             |
| DN80        | 106.0 (4.17) | 81.0 (3.19)  | 97.0 (3.82)  | 108.2 (4.26) | on request         | 13MHP             |
| DN100       | 119.0 (4.69) | 100.0 (3.94) | 110.0 (4.33) | 121.2 (4.78) | on request         | 13MHP             |
| DN125       | 155.0 (6.10) | 125.0 (4.92) | 146.0 (5.75) | 157.2 (6.19) | on request         | 13MHP             |
| DN150       | 183.0 (7.20) | 150.0 (5.91) | 174.0 (6.85) | 185.2 (7.29) | on request         | 13MHP             |

| ISO 1127 SIZE | E mm (inch)  | C4 mm (inch) | C2 mm (inch) | D mm (inch)  | Recommended Torque | Recommended Clamp |
|---------------|--------------|--------------|--------------|--------------|--------------------|-------------------|
| DN08*         | 34.0 (1.34)  | 10.3 (0.41)  | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN10*         | 34.0 (1.34)  | 14.0 (0.55)  | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN15*         | 34.0 (1.34)  | 18.1 (0.71)  | 27.5 (1.08)  | 36.2 (1.43)  | on request         | 13LAH             |
| DN15          | 50.5 (1.99)  | 18.1 (0.71)  | 43.5 (1.71)  | 52.7 (2.07)  | 2 Nm               | 13LAH             |
| DN20          | 50.5 (1.99)  | 23.7 (0.93)  | 43.5 (1.71)  | 52.7 (2.07)  | 2 Nm               | 13LAH             |
| DN25          | 50.5 (1.99)  | 29.7 (1.17)  | 43.5 (1.71)  | 52.7 (2.07)  | 2 Nm               | 13LAH             |
| DN32*         | 50.5 (1.99)  | 38.4 (1.51)  | 43.5 (1.71)  | 52.7 (2.07)  | 2 Nm               | 13LAH             |
| DN32          | 64.0 (2.52)  | 38.4 (1.51)  | 56.5 (2.22)  | 66.2 (2.61)  | 4 Nm               | 13LAH             |
| DN40          | 64.0 (2.52)  | 44.3 (1.74)  | 56.5 (2.22)  | 66.2 (2.61)  | 4 Nm               | 13LAH             |
| DN50          | 77.5 (3.05)  | 56.3 (2.22)  | 70.5 (2.78)  | 79.7 (3.17)  | 4 Nm               | 13LAH             |
| DN65          | 91.0 (3.58)  | 72.1 (2.84)  | 83.5 (3.29)  | 93.2 (3.67)  | 6 Nm               | 13MHP             |
| DN80          | 106.0 (4.17) | 84.3 (3.32)  | 97.0 (3.82)  | 108.2 (4.26) | on request         | 13MHP             |
| DN100         | 130.0 (5.12) | 109.7 (4.32) | 122.0 (4.80) | 132.2 (5.20) | on request         | 13MHP             |
| DN125         | 155.0 (6.10) | 134.5 (5.30) | 146.0 (5.75) | 157.2 (6.19) | on request         | 13MHP             |
| DN150         | 183.0 (7.20) | 150.0 (5.91) | 174.0 (6.85) | 185.2 (7.29) | on request         | 13MHP             |

Note: sizes indicated with an asterisk (\*) is not a norm standard.



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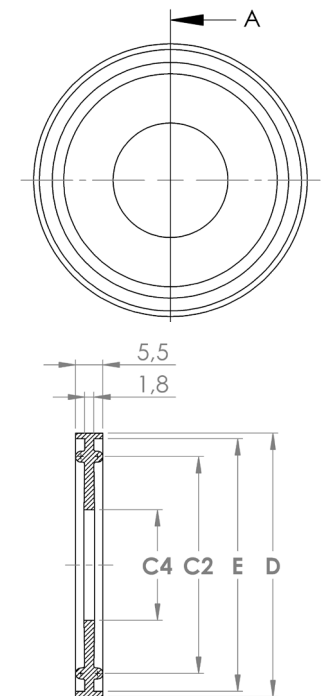
## Type 3

| ASME BPE size | E mm (inch)   | C4 mm (inch)  | C2 mm (inch)  | D mm (inch)   | Recommended Torque | Recommended Clamp |
|---------------|---------------|---------------|---------------|---------------|--------------------|-------------------|
| 1"            | 50.7 (2.00)   | 22.2 (0.87)   | 43.5 (1.71)   | 52.9 (20.8)   | 2 Nm               | 13LAH             |
| 1½"           | 50.7 (2.00)   | 34.9 (1.37)   | 43.5 (1.71)   | 52.9 (20.8)   | 2 Nm               | 13LAH             |
| 2"            | 64.2 (2.53)   | 47.6 (1.87)   | 56.5 (2.22)   | 66.4 (2.61)   | 4 Nm               | 13LAH             |
| 2½"           | 77.7 (3.06)   | 60.3 (2.37)   | 70.5 (2.78)   | 79.9 (3.15)   | 4 Nm               | 13LAH             |
| 3"            | 91.2 (3.59)   | 73.0 (2.87)   | 83.5 (3.29)   | 93.4 (3.68)   | 6 Nm               | 13MHP             |
| 4"            | 119.2 (4.69)  | 97.5 (3.84)   | 110.0 (4.33)  | 121.4 (4.78)  | 16 Nm              | 13MHP             |
| 6"            | 167.2 (6.58)  | 147.0 (5.79)  | 156.4 (6.16)  | 169.4 (6.67)  | on request         | 13MHP             |
| 8"            | 217.4 (8.56)  | 197.7 (7.78)  | 207.0 (8.15)  | 219.6 (8.65)  | on request         | 13MHP             |
| 10"           | 268.5 (10.57) | 247.2 (9.73)  | 257.8 (10.15) | 270.7 (10.66) | on request         | 13MHP             |
| 12"           | 319.3 (12.57) | 298.0 (11.73) | 308.6 (12.15) | 321.5 (12.66) | on request         | 13MHP             |

The Steam-Flon® material is a relatively hard material and can therefore cause problems with sealing when misalignment of pipelines is eminent.

We are therefore introducing a solution to fix the misalignment issue and therewith improve the sealing ability at lower torque levels. The Steam-Flon® Type-III gasket has not one, but two lips: one on either side. So whereas the Type I unlippped competition gasket allows for large side way movement of the ferrules, making the misalignment even more imminent, the Type-III gasket doesn't allow for any leeway and therefore creates the ultimate condition for a perfect seal.

The new Steam-Flon® Type-III gasket seals 10 bar pressure at approximately half the torque level of standard Type-I seals in larger diameters.



SECTION A-A



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