# GORE® Sealant Technologies

***TORQUING RECOMMENDATIONS***

## For reliable sealing of standard EN flanges

**EN**

In order to achieve a reliable seal, it is essential that as much surface pressure as possible is exerted. However, it is important that the maximum permissible surface pressure $Q_{smax}$ (see product data sheet) and the torque recommendations of the flange manufacturer are not exceeded. Our torquing recommendations for customary standard flange types are listed below. Please note that, if applicable, proof of tightness and strength (for example as defined by EN1591-1) is to be documented by the user.

### Installation Instructions

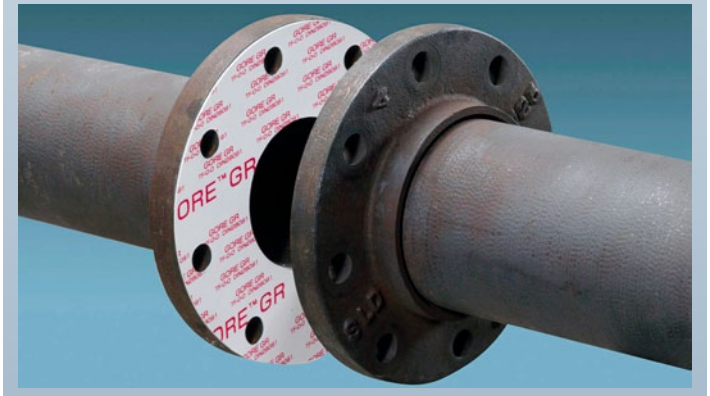
- choose the correct gasket size for the nominal diameter and nominal pressure of the flange
- ensure that the sealing surfaces are clean, dry and free of grease
- position the gasket so that it is exactly at the center of the flange (use the position of the bolts to help you)
- lubricate the bolts, nuts and washers well
- first tighten the nuts so that they are finger-tight, then apply the torque in a star pattern sequence by means of three incremental adjustments:

| | |
|---|---|
| 1st adjustment: | 30 % |
| 2nd adjustment: | 60 % |
| 3rd adjustment: | 100 % |
| 4th adjustment: | check all bolts in a circular sequence, retorquing where necessary. |

Please consult the latest FSA/ESA* guidelines for more details on installation. These are available on request.

### Gasket Types

GORE® Universal Pipe Gasket (Style 800)



GORE® GR Sheet Gasketing

* FSA, Fluid Sealing Association/ESA, European Sealing Association e.V.

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*TORQUING RECOMMENDATIONS*

**GORE® Universal Pipe Gasket** (Style 800)
**GORE® GR** Sheet Gasketing

**EN**

| Steel flanges | Bolt Torque | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | PN6 | | PN10 | | PN16 | | PN25 | | PN40 | |
| DN | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs | Nm | ft-lbs |
| 10 | 20 | 10 | 35 | 30 | 35 | 30 | 35 | 30 | 35 | 30 |
| 15 | 20 | 10 | 35 | 30 | 35 | 30 | 35 | 30 | 35 | 30 |
| 20 | 20 | 10 | 35 | 30 | 35 | 30 | 35 | 30 | 35 | 30 |
| 25 | 20 | 10 | 35 | 30 | 35 | 30 | 35 | 30 | 35 | 30 |
| 32 | 40 | 30 | 90 | 70 | 90 | 70 | 90 | 70 | 90 | 70 |
| 40 | 45 | 30 | 90 | 70 | 90 | 70 | 90 | 70 | 90 | 70 |
| 50 | 45 | 30 | 90 | 70 | 90 | 70 | 90 | 70 | 90 | 70 |
| 65 | 65 | 50 | 90 | 70 | 90 | 70 | 90 | 70 | 90 | 70 |
| 80 | 130 | 100 | 90 | 70 | 90 | 70 | 90 | 70 | 90 | 70 |
| 100 | 130 | 100 | 90 | 70 | 90 | 70 | 170 | 130 | 170 | 130 |
| 125 | 90 | 70 | 110 | 80 | 100 | 70 | 300 | 220 | 300 | 220 |
| 150 | 90 | 70 | 180 | 130 | 170 | 130 | 300 | 220 | 300 | 220 |
| 200 | 120 | 90 | 190 | 140 | 170 | 130 | 320 | 240 | 430 | 320 |
| 250 | 120 | 90 | 170 | 130 | 300 | 220 | 440 | 320 | 600 | 440 |
| 300 | 180 | 130 | 170 | 130 | 300 | 220 | 440 | 320 | 600 | 440 |

## Torque values require:

- Use of well lubricated bolts, Grade 5.6 or better
- Use of any available gasket thickness
- Installation practices that follow Fluid Sealing Association (FSA/ESA) guidelines

## Torque Estimation Conditions:

- Gasket dimensions per EN1514-1 Form IBC
- Flange dimensions per EN 1092-1 Type 11 Form B
- For the applicable pressure please perform knowledgeable calculation.
- Suggested torque values are based on best practices. In general, 70% bolt yield is targeted.
- Friction Factor $\mu = 0.12$ (Nut Factor $K = 0.15$)
- Follows Gore global torque estimation method.

# GORE® Sealant Technologies

*TORQUING RECOMMENDATIONS*

**GORE® Universal Pipe Gasket** (Style 800)

**EN**

| Glass-lined steel flanges | Bolt Torque | | |
|---|---|---|---|
| DN | bolts | Nm | ft-lbs |
| 25 | 4x M12 | 30 | 20 |
| 32 | 4 x M16 | 50 | 40 |
| 40 | 4 x M16 | 60 | 40 |
| 50 | 4 x M16 | 80 | 60 |
| 65 | 4 x M16 | 95 | 70 |
| 80 | 8 x M16 | 65 | 50 |
| 100 | 8 x M16 | 70 | 50 |
| 125 | 8 x M16 | 85 | 60 |
| 150 | 8 x M20 | 120 | 90 |
| 200 | 8 x M20 | 165 | 120 |
| 250 | 12 x M20 | 130 | 100 |
| 300 | 12 x M20 | 150 | 110 |

## Torque Values Require:

- Use of well lubricated bolts, Grade 5.6 or better
- Use of any available gasket thickness (recommended: 6mm (1/4”))
- Installation practices that follow Fluid Sealing Association (FSA/ESA) guidelines

## Torque estimation conditions:

- Gasket dimensions per EN1514-1 Form IBC with reduced inner diameter according to Gore specification.
- Flange dimensions per DIN 2873, PN10
- For the applicable pressure please perform knowledgeable calculation.
- Suggested torque values are based on best practices. In general, 20MPa average gasket stress is targeted.
- Friction Factor μ = 0.12 (Nut Factor K = 0.15)
- Follows Gore global torque estimation method.

# GORE® Sealant Technologies

***TORQUING RECOMMENDATIONS***

EN

## GORE® Universal Pipe Gasket (Style 800)

| | Bolt Torque | | |
|---|---|---|---|
| | DN | Nm | ft-lbs |
| Plastic flanges | 25 | 15 | 10 |
| | 32 | 25 | 20 |
| | 40 | 30 | 20 |
| | 50 | 40 | 30 |
| | 65 | 50 | 40 |
| | 80 | 30 | 20 |
| | 100 | 35 | 25 |
| | 125 | 45 | 30 |
| | 150 | 60 | 40 |
| | 200 | 85 | 60 |
| | 250 | 65 | 50 |
| | 300 | 75 | 60 |

### Torque Values Require:

- Use of well lubricated bolts, Grade 5.6 or better
- Use of any available gasket thickness
- Installation practices that follow Fluid Sealing Association (FSA/ESA) guidelines

### Torque estimation conditions:

- Gasket dimensions per EN1514-1 Form IBC
- Flange dimensions per EN 1092-1 Type 11 Form B (sealing surfaces)
- For the applicable pressure please perform knowledgeable calculation.
- Suggested torque values are based on best practices. In general, 10MPa average gasket stress is targeted.
- Friction Factor μ = 0.12 (Nut Factor K = 0.15)
- Follows Gore global torque estimation method.

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**North America / South America**
**W. L. Gore & Associates Inc. (USA)**
Tel.: +1.800.654.4229
Fax: +1.410.506.8585
E-mail: *sealants@wlgore.com*

**Europe / Middle East / Russia / Africa**
**W. L. Gore & Associates GmbH (Germany)**
Tel.: +49.89.4612.2215
Fax: +49.89.4612.43780
E-mail: *sealants_EU@wlgore.com*

**Asia / Australia**
**W. L. Gore & Associates (China)**
Tel.: +86.21.5172.8299
Fax: +86.21.6247.9199
E-mail: *sealants_AP@wlgore.com*


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