

*Flexitallic*®

HPG

HIGH PERFORMANCE GASKET



THE NEW STANDARD IN SPIRAL WOUND GASKETS

SEALS **BETTER** LASTS **LONGER**  
MADE **SMARTER**

[FLEXITALLIC\*\*HPG\*\*.COM](https://flexitallic.com/HPG)

# HIGH PERFORMANCE IS NOT JUST A NAME IT'S BY DESIGN

## SEALS BETTER

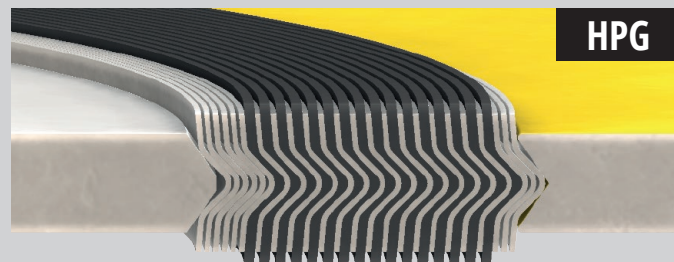
With high performance windings and filler, the Flexitallic HPG is denser than a conventional SWG, consistently providing lower leak rates than industry average. Meeting the very latest ASME B16.20 standards, upon compression, the HPG's design is more forgiving of flange face imperfections and also reduces load loss due to winding tightness.

## LASTS LONGER

Flexitallic's oxidation inhibited graphite filler Flexicarb SEL+ withstands higher temperatures providing longer service life for the HPG. Significantly lower levels of impurities than industry average reduces the likelihood of flange face corrosion. Flexicarb SEL+ contains less than 300ppm sulfur content, a significant upgrade over base industrial grade graphite.

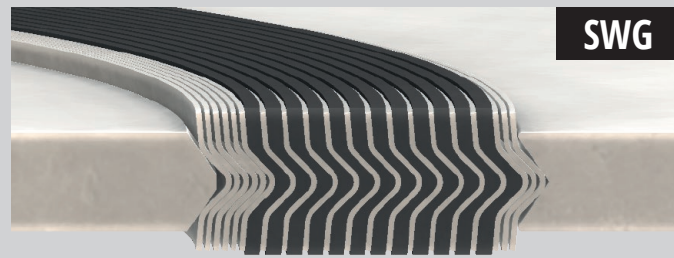
## SMART TECHNOLOGY & TRACEABILITY

Each HPG has a distinct batch number and QR code, giving you quick access to gasket composition and material certificates by scanning the HPG with your phone or entering a batch number in our online web app [www.flexqr.com](http://www.flexqr.com)



HPG

HIGHER DENSITY THAN A  
CONVENTIONAL SWG



SWG

Typical comparison ASME B16.20 NPS 4 inch Class 300

### Physical Properties

Content	Base grade	Flexitallic SEL+
Sulfur	≤ 750ppm	< 300ppm
Chloride	≤ 50ppm	≤ 10ppm
Fluoride	≤ 50ppm	≤ 10ppm
Halogen	≤ 500ppm	≤ 310ppm
Oxidation (typical/hr)	> 18%	< 1.5%

Average Weight Loss % (based on internal test data).  
Oxidation resistance 670°C / 4 hours



Scan to visit



*Flexitallic*

**HPG**  
HIGH PERFORMANCE GASKET

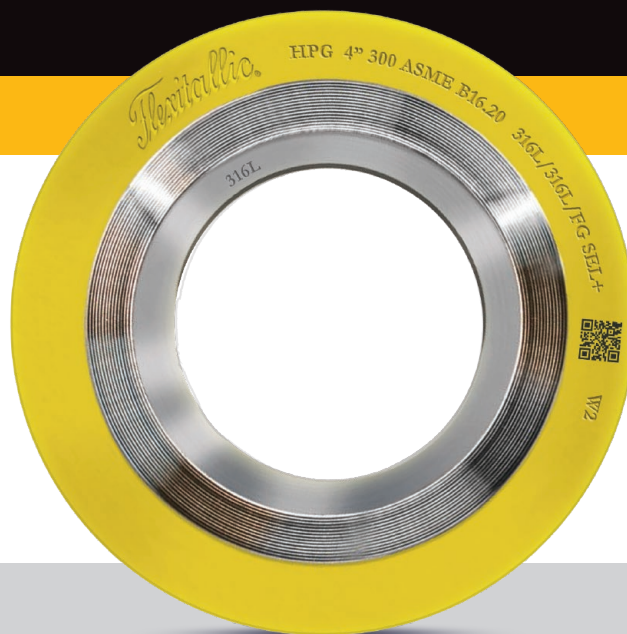
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## PRODUCT DATASHEET

# HIGH PERFORMANCE GASKET (HPG)

The High Performance Gasket is a semi-metallic spiral wound gasket capable of providing class leading sealing performance across a wide range of industrial sealing applications.



### SERVICE

The HPG gasket has been designed as a direct, cost effective replacement for conventional spiral wound gaskets. Sealing element design modifications greatly enhance sealing performance while maintaining full compliance with the industry recognized ASME B16.20 engineering standard. HPG gaskets can be used in all areas where conventional graphite filled spiral wound gaskets are currently in use such as steam, hydrocarbon and chemical service. HPG are particularly suited for use in demanding sealing applications, in critical service duty where enhanced levels of joint integrity are required or as an integral part of an emissions reduction program.

### TEMPERATURE RANGE

Maximum continuous: **842°F (450°C)\***

Minimum continuous: **-40°F (-40°C)\***

*\*For service temperatures outside this range please consult Flexitallic Applications Engineering*

### TECHNICAL FEATURES & BENEFITS

- ▶ High Density Sealing Element – Enhanced sealing performance in load compromised and cyclic service
- ▶ High Purity Flexicarb SEL+ Graphite – Corrosion mitigation and long term stability in elevated temperature service
- ▶ Controlled Filler Protrusion – Enhanced sealing performance under low load and on damaged flange sealing faces
- ▶ QR Code Identification – Full material traceability and unique identification for QA and Joint Management

### TYPICAL PROPERTIES

Density	1.0 – 1.2 g/cc
Carbon	≥ 98.0 %
Ash	≤ 2.0 %
Total Sulfur	< 300 ppm
Total Chloride	≤ 10 ppm
Total Fluoride	≤ 10 ppm
Total Halogen	≤ 310 ppm
Weight loss per hour	< 1.5 % / hour
<i>Measured by TGA, 4 hours @ 670°C (typical)</i>	

### APPLICABLE STANDARDS

ASME B16.20 - 2017  
API 6FB Fire Safe  
NACE Compliant MR0175/MR0103

### ASME CONSTANTS

m 3  
Y 10,000 psi

### IDENTIFICATION & MARKING

In addition to ASME B16.20 marking and color coding requirements each gasket is market with the following:

**QR code:** Material traceability and quick access information

**Batch number:** Durable identifier linked to all traceable information

**Inner ring:** Permanent, stamped identification

### AVAILABILITY

**Gasket Style:** CGI - Spiral wound gasket with inner and outer rings

**Size Range:** NPS ½" through 24"

**Pressure Class:** 150 through 2500

### Material Combinations:

Outer ring – Carbon Steel

Filler material – Flexicarb SEL+

Wire/inner ring – 304 or 316L

# DESIGN FACTORS

## SEALS BETTER

- ▶ High performance windings and filler contributing to superior sealing performance
- ▶ Improve upon compression inconsistencies
- ▶ Consistently lower leak rates than industry average

## LASTS LONGER

- ▶ High Grade Graphite material improvements providing superior sealing capabilities
- ▶ Oxidation Resistant Graphite for longer lasting service levels
- ▶ Lower levels of impurities than industry average providing protection against flange face corrosion

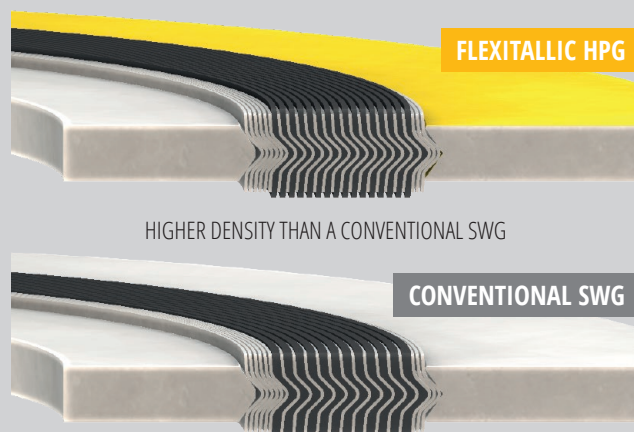
## MADE SMARTER

- ▶ QR Code technology for quick access information
- ▶ Full Material Traceability across all component parts
- ▶ Paperless access of Material Certificates
- ▶ Batch Number identification system for greater level of traceability

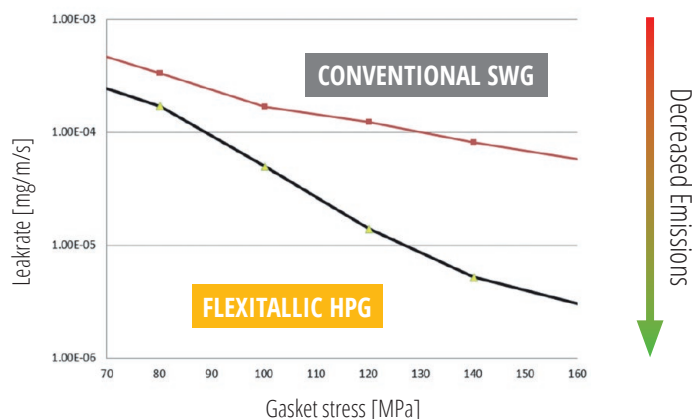
## ADVANTAGES

- |   |  |   |   |  |
|---|--|---|---|--|
| <b>▶ Lower Leak Rate</b><br>Improvement in design leads to lower leak rates | <b>▶ Greater Oxidation Resistance</b><br>Improvement in graphite filler leads to lower oxidation | <b>▶ Reduced Compression Inconsistencies</b><br>Improvement in construction reduces compression inconsistencies | <b>▶ Reduced Load Loss Due to Winding Tightness</b><br>Maintains stress level under bolt load | <b>▶ Material Traceability</b><br>Includes material traceability report as a standard offering |
|---|--|---|---|--|

### GASKET PROFILE:



### EN13555 LEAKAGE TEST:



### FLEX QR

By scanning the QR code or entering the batch number from the gasket, you will gain access the below information:

- ▶ Gasket Description
- ▶ Heat lot for windings
- ▶ Heat lot for rings
- ▶ Material Certifications

This data sheet refers to the material as supplied. The information contained herein is given in good faith, but no liability will be accepted by the Company in relation to same.

We reserve the right to change the details given on this data sheet as additional information is acquired. Customers requiring the latest version of this data sheet should contact our Applications Engineering Department.

The information given and, in particular, any parameters, should be used for guidance purposes only. The company does not give any warranty that the product will be suitable for the use intended by the customer.

**Health & Safety:** For further health and safety information please contact Flexitallic.

**IF YOU WOULD LIKE MORE INFORMATION, SEE BACK COVER FOR GLOBAL CONTACT DETAILS**



Scan to visit  
[www.flexqr.com](http://www.flexqr.com)

# HIGH PURITY FLEXICARB® SEL<sup>+</sup> GRAPHITE

## LASTS LONGER, LOW CORROSION

**SEL<sup>+</sup> is a high purity graphite treated with oxidation inhibitors for superior sealing performance when used as a filler.** All graphite may look the same; but it's the quality of the graphite that has a significant effect on sealing performance. Robust specifications of leading global end-users and international standards such as EN 14772 make the choice of graphite an important decision - and Flexitallic's SEL<sup>+</sup> exceeds all these specifications and more.

SEL<sup>+</sup> is used as a filler for Flexitallic's Spiral Wound Gaskets, Change gaskets, and as facing for Flexpro™ (Kammprofile). The material contains oxidation inhibitors with no binders or resin.

### SEL<sup>+</sup> ADVANTAGES

#### Low Sulfur

Decreased corrosive rate of flange face materials.

#### Greater Oxidation Resistance

Improvement in graphite quality leads to lower oxidation.

#### Low Impurities

Lower levels providing protection against flange face corrosion.

### OXIDATION RESISTANCE

Flexible graphite is more than 98% carbon. If there is any oxygen present, or any trace transition metals which are known oxidation catalysts, then at elevated temperatures the graphite will oxidize. Oxidation causes loss of material which creates leakage, emissions or at worst complete failure of the seal over time.

Flexitallic SEL<sup>+</sup> has significantly lower impurities than the industry average, with less than 300 parts per million of sulphur and less than 10 parts per million of chloride. It is also treated with oxidation inhibitors ensuring high sealing integrity in continuous elevated temperatures.

### TYPICAL PROPERTIES

Density	1.0 – 1.2 g/cc
Carbon	≥ 98.0 %
Ash	≤ 2.0 %
Total Sulfur	< 300 ppm
Total Chloride	≤ 10 ppm
Total Fluoride	≤ 10 ppm
Total Halogen	≤ 310 ppm
Weight loss per hour	< 1.5 % / hour

*Measured by TGA, 4 hours @ 670°C (typical)*

Rated to  
**450°C**  
**842°F**

**FLEXITALLIC**HPG.COM

## PRODUCT DATASHEET

### FLEXICARB® SEL<sup>+</sup>

Flexicarb® SEL<sup>+</sup> is a high purity graphite treated with oxidation inhibitors for superior sealing performance when used as a filler for Spiral Wound Gaskets, CHANGE, and facing for Flexpro™ (Kammprofile). The material contains oxidation inhibitors with no binders or resin.

#### SERVICE

Flexicarb® SEL<sup>+</sup> is suitable for use in general gasket applications and can be used for sealing steam and most chemicals with the exception of oxidizing agents.

Flexicarb® SEL<sup>+</sup> is manufactured from high purity sources of graphite and is treated with oxidation inhibitors ensuring high sealing integrity in long term continuous elevated temperature service.

**Product enhancements:** Higher oxidation resistance leading to lower weight loss for longer lasting life.

#### TYPICAL PROPERTIES

**Density** 1.0 – 1.2 g/cc

**Carbon** ≥ 98.0 %

**Ash** ≤ 2.0 %

**Total Sulfur** < 300 ppm

**Total Chloride** ≤ 10 ppm

**Total Fluoride** ≤ 10 ppm

**Total Halogen** ≤ 310 ppm

**Weight loss per hour** < 1.5 % / hour

*Measured by TGA,*

*4 hours @ 670°C (typical)*

#### RECOMMENDED TEMPERATURE RANGE

##### Oxidizing media:

-328°F to 842°F (-200°C to 450°C)

##### Inert or reducing media:

-328°F to 1830°F (-200°C to 1000°C)

##### Maximum recommended pressure:

Used up to ASME B16.5 class 2500

##### Note:

Recommended for use at maximum continuous temperature of 842°F in presence of oxygen containing environment.

For long term continuous high temperature use in oxidizing environments please consult Flexitallic's Application Engineering department.

#### AVAILABILITY

As a filler material for Spiral Wound Gaskets / CHANGE.

As a material facing for Flexpro™

Thickness 0.015in to 0.040in (0.38 to 1.0mm)

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# UPGRADING TO HPG

Upgrading to the Flexitallic HPG couldn't be easier. There is no need to re-specify because the gasket conforms with all the same requirements for Flexitallic style CGI regarding form, fit, and function.

## COMPLIANCY

- ▶ Compliant with ASME B16.20 – 2017
- ▶ Manufactured to regulated dimensions, tolerances, workmanship, thicknesses, and performance.
- ▶ ASME Constants:  $M = 3$ ,  $Y = 10,000$  psi

## MATERIALS

- ▶ Raw material wire, filler, and sheet metal - all compliant with ASTM standards
- ▶ Component items constant of Inner Ring, Guide Ring, Winding Metal Wire and Graphite Filler intertwined

## MANUFACTURING

- ▶ Manufactured using same equipment as style CGI
- ▶ Manufactured to same Flexitallic Engineering Standards for internal control

## USAGE

- ▶ Suitable for flat face and raised face flanges
- ▶ Recommended bolting and torquing procedures same as "CGI"

If you have any other questions about upgrading, please contact our engineering team

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📠 +1 (281) 604-2415

✉ [DPEngineering@flexitallic.com](mailto:DPEngineering@flexitallic.com)

**NO NEED TO RE-SPEC**





*Flexitallic®*

**HPG**

HIGH PERFORMANCE GASKET

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