

# SIGRAFLEX® APX2™ HOCHDRUCK

Multilayer high-strength sealing sheet made from natural graphite with stainless steel foil reinforcement for high-temperature applications

SIGRAFLEX APX2 HOCHDRUCK is a multilayer high-strength graphite sealing sheet – designed for high-temperature applications.

The sheet is comprised of 0.020 inch thick layers of highly oxidation resistant SIGRAFLEX APX2 flexible graphite and 0.002 inch thick layers of stainless steel foil, manufactured with SIGRAFLEX HOCHDRUCK technology.

SIGRAFLEX APX2 HOCHDRUCK was developed for end users in the process industry to cover a broad range of demanding gasket requirements with a reliable and safe product. SIGRAFLEX APX2 HOCHDRUCK is specifically designed for high temperature flat gasket applications.

## Application

- Operating temperatures range from –250 °C [–418 °F] up to 580 °C [1076 °F] depending on chemical resistance. Life time might be limited at high temperatures. Consult the manufacturer when application temperatures exceed 480 °C [896 °F]. Please refer to our technical guideline regarding thermal stability.
- All common pipework and vessel flange designs as well as difficult and highly stressed sealed joints.
- For one-piece gasket designs up to an outside diameter of 1500 mm; for diameters above 1500 mm, for example two-layer structures with segmented sections and staggered joints are recommended.
- For operating pressures from vacuum up to 250 bar
- For corrosive media
- Steam pipework and boilers in power generation plants
- Heat transfer oils and heating equipment
- Inspection glasses, pumps, fittings and valves
- Nuclear power generation plants
- Pulp and paper mills
- Existing plants



↑ Cross-section



## Properties

SIGRAFLEX APX2 HOCHDRUCK combines the outstanding characteristics of both SIGRAFLEX APX2 graphite foil and reinforced sheets manufactured with SIGRAFLEX HOCHDRUCK technology:

- Increased gasket life and improved operational safety due to very high oxidation resistance
- Reliable product characteristics for high plant security and availability
- Outstanding maximum permissible gasket stress
- Very high blow-out resistance and mechanical strength
- Very adaptable sealing material during gasket assembly
- Good chemical resistance
- Long-term stability of assembly load and gasket stress
- No measurable cold or warm flow characteristics up to the maximum permissible gasket stress
- No aging or embrittlement (no adhesives or binders)
- Very easy to cut into required sealing shapes, even with conventional cutting equipment/tools
- Asbestos-free (no associated health risks)

## Approvals/Test reports

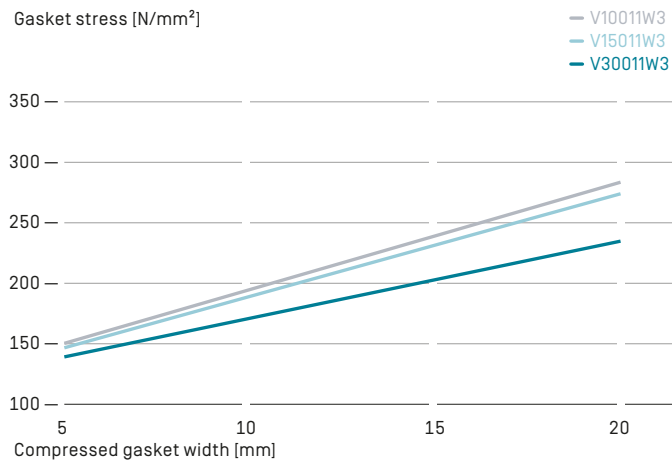
Please see [www.sigraflex.com/downloads](http://www.sigraflex.com/downloads) for details

- Fire safe according to API 607
- Blow-out resistance (TÜV at 2.5 times the nominal pressure)
- BAM oxygen

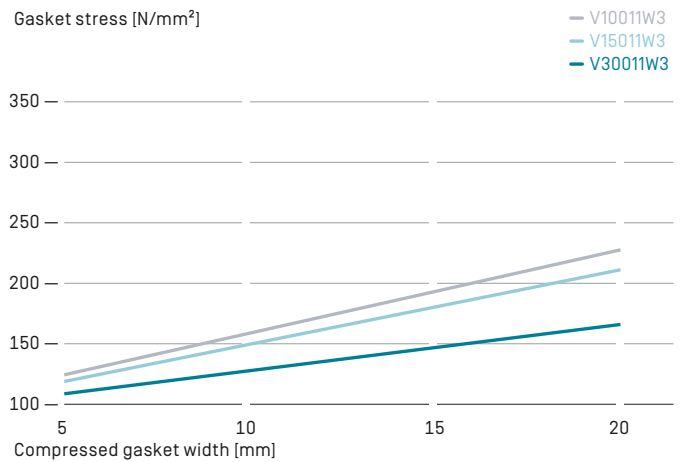
## Assembly instructions

Our detailed assembly instructions are available on request.

### Typical maximum permissible gasket stress of SIGRAFLEX APX2 HOCHDRUCK at 20 °C [68 °F]



### Typical maximum permissible gasket stress of SIGRAFLEX APX2 HOCHDRUCK at 300 °C [572 °F]



### Material data of SIGRAFLEX® APX2™ HOCHDRUCK

Typical properties <sup>1)</sup>	Units	V1001W3	V1501W3	V3001W3
Thickness (ASTM F104)	in	0.040	0.060	0.120
Sheet dimensions	in	59.1 x 59.1	59.1 x 59.1	59.1 x 59.1
Density of graphite (ASTM F1315)	lb/ft <sup>3</sup>	70	70	70
Carbon content (ASTM D5373)	%	≥ 98.0	≥ 98.0	≥ 98.0
Ash content (ASTM C561)	%	≤ 2.0	≤ 2.0	≤ 2.0
Compressibility (ASTM F36)	%	35	35	35
Recovery (ASTM F36)	%	15	15	15
Creep relaxation (ASTM F38)	%	< 4	< 4	< 4
Total sulfur (ASTM D4239)	ppm	< 300	< 300	< 300
Total chloride (ASTM 4208/D4327)	ppm	≤ 25	≤ 25	≤ 25
Oxidation rate in air at 670 °C [1238 °F] (TGA)	%	≤ 1.0	≤ 1.0	≤ 1.0
	Gb		787	
	a		0.4	
PVRC design constants	Gs		0.00287	
Tpmin at 4,500 psi gasket stress			370	
Pmin at 15,000 psi gasket stress			2218	
	„m“-factor	2.5	2.5	2.5
Gasket factors (ASTM F3149)	„y“-factor	psi	3000	3000

<sup>1)</sup> Some data are for graphite foil only



Additional information on our SIGRAFLEX sealing materials can be found under “Download Center” on our homepage. [www.sigraflex.com/downloads](http://www.sigraflex.com/downloads)



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