novapress® 880

Maximum adaptability for the chemical industry.

Perfect for designs that comply with VDI 2290.

First gasket for Industry 4.0.

GASKETS

TECHNICAL TEXTILES

EXPANSION JOINTS

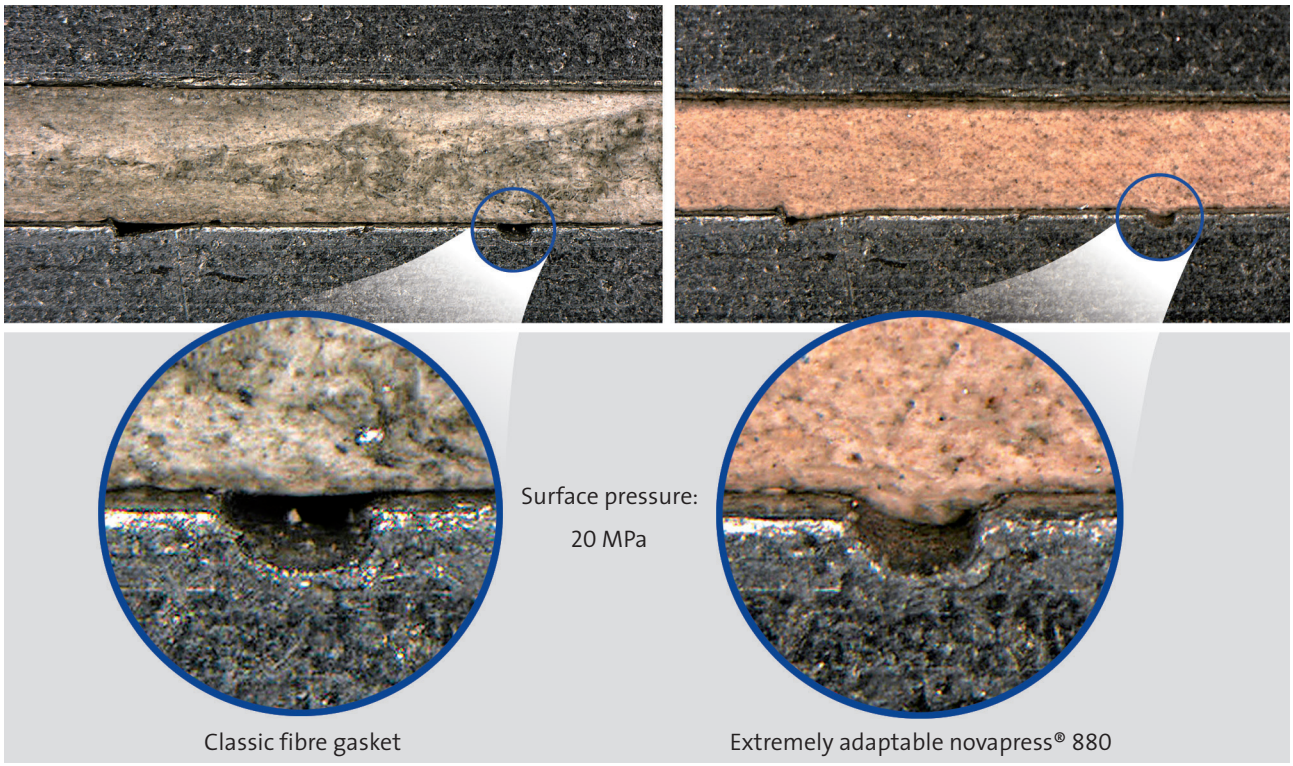
INSULATION

NEW MATERIALS

Frenzelit

creating hightech solutions

Maximum adaptability for the chemical industry



Classic fibre gasket

Extremely adaptable novapress® 880

Leakage sources

Numerous leakage tests have shown that most of the leakage experienced with fibre gaskets is via the surfaces. There are as a result differences – considerable in some cases – between the leakage levels measured in the laboratory and with real flange connections. Substantially higher leakage levels are recorded in particular with flanges that are no longer new, that show standard signs of wear or are even damaged. The restrictions on surface pressure that are dictated by the design of the flange-screw combination used make it difficult to satisfy legally stipulated sealing criteria in practical applications. This challenge can only be met successfully by making the gasket significantly more adaptable to flange unevenness.

Enhanced adaptability

With a compressibility level of 18 % in accordance with ASTM F36J, novapress® 880 performs three times better than standard materials. This means that the flange unevenness mentioned above is already compensated for reliably at comparatively low surface pressure levels.

Thanks to new process technology and an optimised material composition, such proven properties as media resistance and mechanical stability under temperature stress are combined with high adaptability. The benefits of more efficient sealing properties in everyday practical maintenance conditions are obvious.

If you have any application engineering questions,
we will be delighted to answer them. Just contact:

gaskets@frenzelit.de

Perfect for designs that comply with VDI 2290

Gasket constants according to DIN EN 13555 on a new level

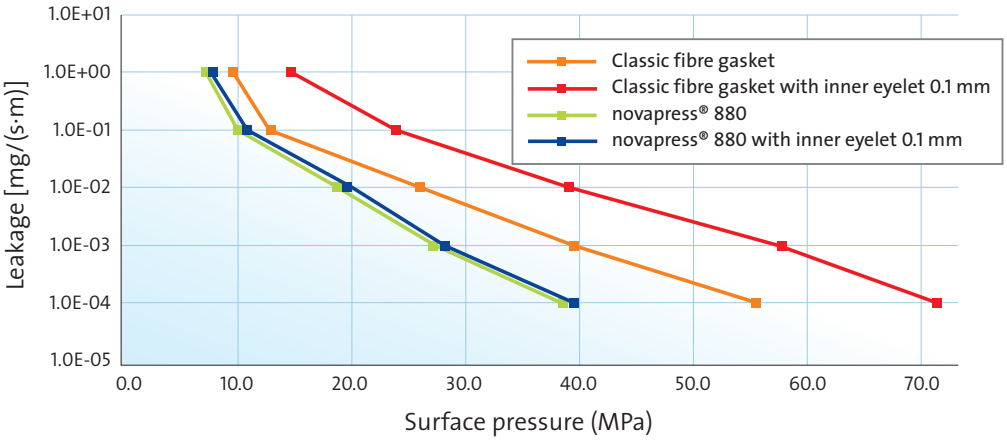
Practically all plants in modern process industry are required to satisfy the requirements of TA Luft (German Clean Air Act). What are needed are implementable gasket connection designs that meet the specifications of sealing category $L_{0,01}$ indicated in VDI directive 2290. This is only possible when an exceptionally good leakage performance is already achieved at relatively low surface pressure levels. Classic fibre gasket materials have failed to satisfy this criterion up to now. novapress® 880 allows technically sensible gasket system designs, that provide greater security with respect to screw and flange stress, and is significantly less sensitive to unavoidable tolerances during installation too.

Put in simple terms: a gasket connection with novapress® 880 operates within the limits demanded by TA Luft and VDI 2290, even in the case of manual installation - including all tightening tolerances attributable to the system. Less than 20 MPa for the parameter $Q_{min\ (L0,01)}$ at an internal pressure level of 40 bar are convincing proof. The Q_{smin} figure for the same sealing performance of 5 MPa is impressive for calculations as specified by DIN EN 1591-1. The requirements made in the guide issued by VCI for the establishment of flange connections are also satisfied reliably with regard to the P_{QR} readings.

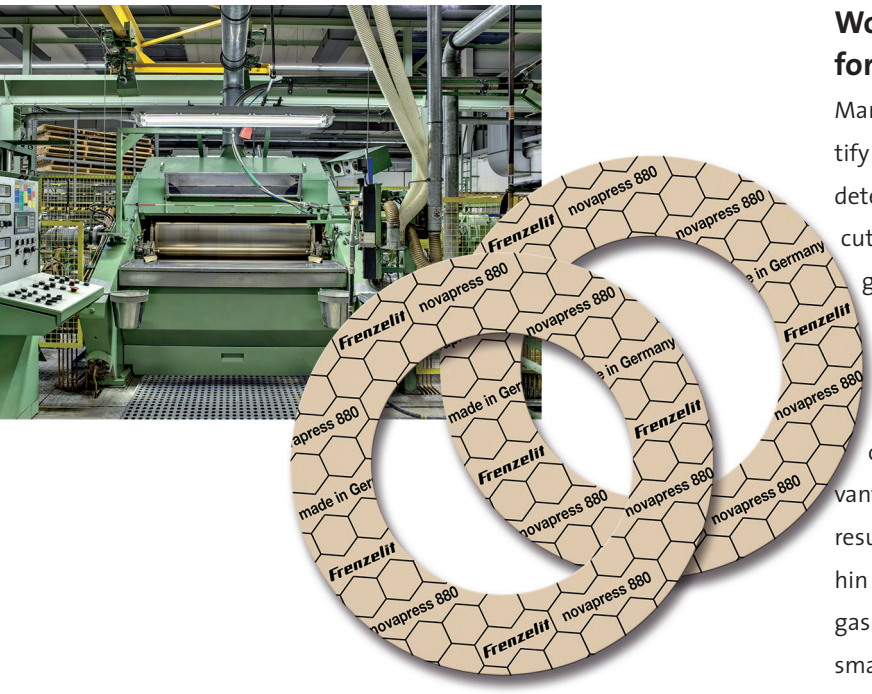
Impact of an inner eyelet

A special feature of this extremely adaptable gasket: the sealing performance is achieved to the same extent with and without inner eyelet. The user is free to buy novapress® 880 simply punched out of a sheet or - with almost identical parameters - finished with stainless steel inner eyelet. This reduces storage and logistics in production of the gasket and takes full advantage of the potential savings associated with this.

Leakage comparison / 40 bar



World premiere: fibre gaskets for Industry 4.0 – Gasket Code Technology



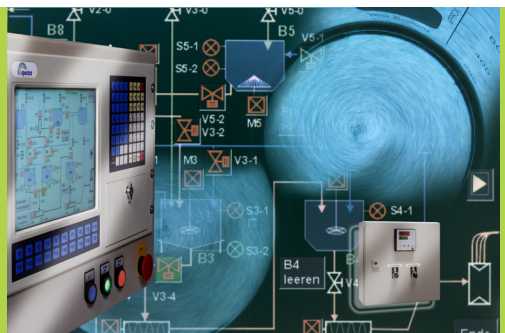
Quality monitored and maintained by using a process control system for the entire manufacturing process.

novapress® products represent the latest state of the art for gasket sheets manufactured by the calendering process. The blends consist exclusively of high-quality raw materials obtained from well-known suppliers. All the batches of raw material delivered are not merely in line with precise specifications; they are also subjected to strict incoming goods testing. This means that only tested and approved raw materials reach production.

A process control system monitors and controls preparation of the formulations, the blending operation and, finally, the calendering process itself. Consistently high quality is always guaranteed as a result. Every production batch is identified uniquely, which makes uninterrupted traceability of the gasket sheet possible.

World premiere: Gasket Code Technology for punched gaskets

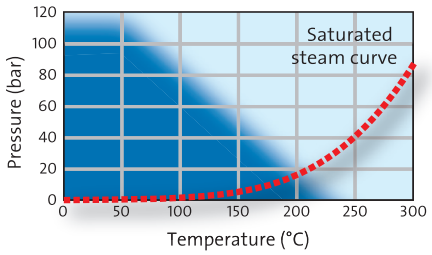
Manufacturers of high-quality fibre gasket materials identify every gasket sheet. Any identifications are no longer detectable on the component after the first punching or cutting operation, however. This means that the finished gasket cannot be traced back any more. The new Gasket Code Technology for novapress® 880 makes identification (type, manufacturing period and production batch) possible via a unique "fingerprint" of the material. Not only the identity of the material but also the relevant production batch can be determined exactly as a result. The information is available, for example, within the framework of incoming goods testing of new gaskets. It can also be obtained reliably from even the smallest of gasket residue. The same is true of gaskets that have been removed after they have been subjected to the effects of temperature and media. novapress® 880 is therefore the first gasket material anywhere in the world that provides the transparency of all plant components that is required in the context of "Industry 4.0". This represents the first step towards "articulate" gasket connections.



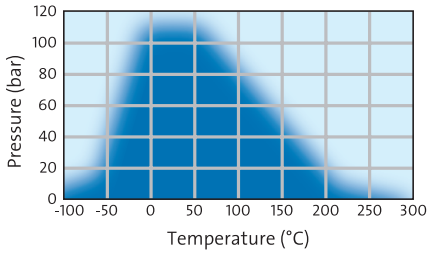
Recommendations for use

Depending on pressure and temperature levels

Water/ water vapour



Other media*



Material data			novapress® 880
Non-stick coating			PTFE as standard
Identification colour			beige (pigment-free)

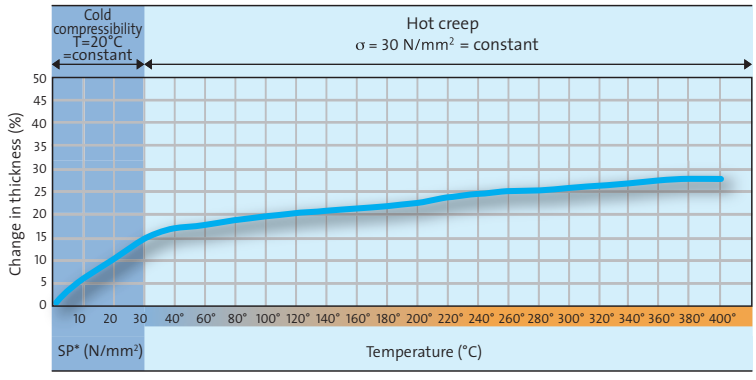
Physical properties Sample thickness 2.0 mm	Test standard	Unit	Value*
Density	DIN 28 090-2	[g/cm³]	1.30
Residual stress 300 °C	DIN 52 913	[N/mm²]	20
Compressibility	ASTM F 36 J	[%]	18
Recovery	ASTM F 36 J	[%]	65
Cold compressibility ε_{KSW}	DIN 28 090-2	[%]	16
Cold recovery ε_{KRW}	DIN 28 090-2	[%]	7
Hot creep $\varepsilon_{WSW/200}$	DIN 28 090-2	[%]	19
Hot recovery $\varepsilon_{WRW/200}$	DIN 28 090-2	[%]	2
Specific leakage rate	DIN 3535-6	[mg/(s·m)]	0.01
Tensile strength transverse	DIN 52 910	[N/mm²]	6
Media resistance	ASTM F 146		
IRM 903	5 h/ 150 °C		
Weight change		[%]	6
Thickness change		[%]	2
Fuel B	5 h/ 23 °C		
Weight change		[%]	7
Thickness change		[%]	6
Leachable chloride content	QS-001-133	[ppm]	≤ 150
Approvals and compliance	DVGW, TA Luft, EG 1935/2004, FDA		

*Modal value (typical value)

Product data (tolerances according to DIN 28 091-1)	
Dimensions [mm]	1,000 x 1,500 / 1,500 x 1,500 / 3,000 x 1,500
Thicknesses [mm]	0.5 / 0.75 / 1.0 / 1.5 / 2.0 / 3.0

Temp-Test

at 30 MPa - sample thickness: 2.0 mm



* surface pressure

Explanatory notes about the temperature test:
The purpose of the temperature test is to determine how the gasket deforms under certain conditions. It is a special Frenzelit development that represents what is effectively a "fingerprint" of major gasket properties.

The compression set of the gasket at room temperature is determined in the first part of the test. This curve indicates the adaptability of the gasket during installation.

In the second part of the test, the temperature is increased at a specified speed, while the surface pressure level reached in the first part is maintained consistently. I.e. the system is not allowed to "relax" as a result of gasket compression. This is overly critical - the strain on the gasket would be lower in a real sealing situation - but it unsparingly reveals the character of the gasket.

Warranty disclaimer
In view of the variety of different installation and operation conditions and applications and processing engineering options, the information given in this prospectus can only provide approximate guidance and cannot therefore be used as the basis for warranty claims.

Explanatory notes about the recommendations for use
The temperature and pressure recommendations in the graphs apply to gaskets 2.0 mm thick that are used with raised face flanges. Higher stresses are possible when thinner gaskets are used! The information provided must therefore be considered as estimates that are on the safe side rather than as specific operational limits.

* Example for the most common other media. Exact data about individual cases can be obtained via the Frenzelit novaDISC program or from our application engineering staff.

Good for people and the environment.

From research and development to our manufacturing operations and use of the product by the customer: quality assurance and a responsible approach to resources and the environment are a firm commitment we observe in everything we do throughout the life cycle of all products.

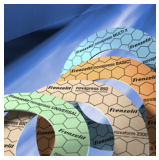
The Frenzelit gasket division has obtained certification that the company complies with the requirements of ISO 9001, ISO 14001 and ISO 50001. This means complete transparency in all areas and therefore provides a high degree of security – for the benefit of our employees, the environment and our customers.

Quality management	ISO 9001
Environment management	ISO 14001
Energy management	ISO 50001

BLUEcoMPETENCE Alliance Member
Partner of the Engineering Industry Sustainability Initiative

Engineered by Frenzelit: Gasket materials / fibre-reinforced compounds

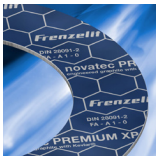
novapress®



200°C
-100°C

Elastomer-bonded fibre gaskets

novatec®



250°C
-100°C

Fibre-reinforced graphite gaskets with Kevlar®

novaflon®

260°C
-200°C

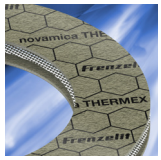
Modified and filled PTFE gaskets

novaphit®

550°C
-200°C

Expanded graphite with/without stainless steel expanded metal insert

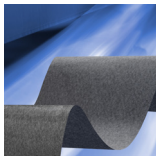
novamica®



1000°C
-200°C

Phlogopite mica with/without stainless steel expanded metal insert

novaform®
Soft Compounds



250°C
-100°C

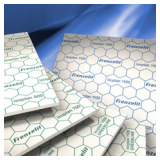
Technical films for insulation, sealing, acoustic applications etc.

novaplan®

1000°C
-100°C

Soft layer/ insert for heat shield applications and cylinder head gaskets

isoplan®



1100°C
-100°C

High-temperature insulation materials

Kevlar® is a DuPont registered trademark.

GASKETS

TECHNICAL TEXTILES

EXPANSION JOINTS

INSULATION

NEW MATERIALS

Frenzelit Werke GmbH
P.O. Box 11 40
95456 Bad Berneck
Germany
Phone +49 9273 72-0
Fax +49 9273 72-221
info@frenzelit.de
www.frenzelit.com

Frenzelit
creating hightech solutions