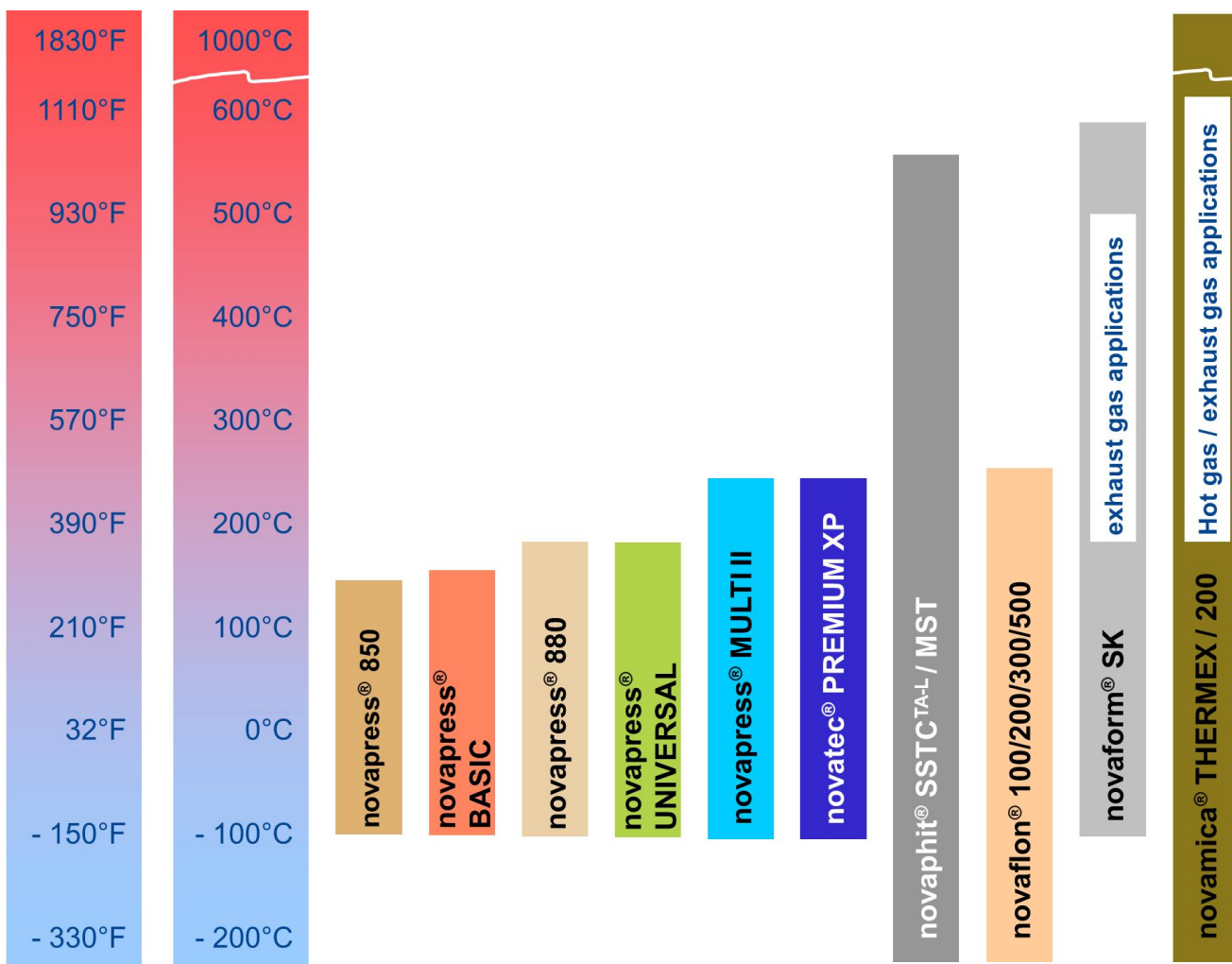
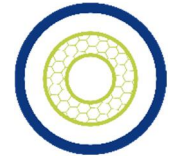


Selection of gaskets in a few steps

The most important types of gaskets / product families:

- novapress®** elastomer bonded fiber gaskets
- novatec®** fiber reinforced graphite gaskets
- novaphit®** gaskets made of pure graphite reinforced with stainless steel expanded metal
- novafilon®** filled or expanded PTFE gaskets
- novaform® SK** extremely robust specialist for exhaust gas applications
- novamica®** high temperature gaskets based on high quality phlogopit mica



An orientation of the application temperature ranges

Selection of gaskets in a few steps

This TechInfo illustrates the most important steps for the correct gasket selection and is therefore deliberately kept simple. The basic principle, however, should be applied to complex tasks as well.

Step 1: Which medium must be sealed?

The sealing material must of course be chemically resistant to the medium to be sealed.
For example:



For extremely aggressive acids and alkalis: **novafion®** (possibly novaphit® VS without stainless steel inlay).

For aggressive acids and alkalis: **novaphit®** (if the container or pipe work is made of standard steel or stainless steel, novaphit® can generally be used without any problems). novaphit® SSTC^{TA-L} and novaphit® MST are suitable for use with TA Luft and should therefore be preferred.

For light acids and alkaline solutions or media with little to no aggression, gas, oil, fuel, refrigerants, etc.: **novapress®** or **novatec®**. novapress® 880 and novapress® 850 represent the future of the novapress® product family and should be preferred.

Step 2a: What is the maximum temperature of the sealing system?

The temperature range of the application must be clarified. For example:

As a rule, all **novapress®** materials can be used up to 150 °C.

For steam or hot oil applications above 150 °C **novaphit®** should generally be used. Up to a maximum of 250 °C novapress® MULTI II or novatec® PREMIUM XP can be used alternatively.

For exhaust gas applications up to max. 550-600 °C: **novaform® SK**.

For hot applications up to max. 1000 °C: **novamica®**.



Step 2b: What is the internal pressure level?

The maximum permissible internal pressure depends exclusively on the applied surface pressure, which depends largely on the flange and bolts and less on the gasket. The gasket material must only be able to withstand the required surface pressure. The application diagrams shown in the documents therefore show normal pressure ranges and not the physical limits of the gasket materials.



Selection of gaskets in a few steps

Step 3: Special features of the sealing materials

For applications with only a low level of surface pressure: **novapress® 850** - the most adaptable novapress® product. E.g. gear boxes, housing seals, covers, non rigid designs. But also gas and water supply, refrigerants, oil and fuel, food, etc.



novaphit® products offer excellent adaptability and at the same time are almost insensitive to increased temperatures and load changes. Ideal for steam, hot water and hot oils such as heat transfer oils.

novaphit® 400 is suitable for very narrow gasket widths and thin gasket thicknesses < 1.0 mm.

novapress® MULTI II is still the first choice for bolted joint gaskets and elevated temperatures. That is, if torsional loads on the gasket would destroy a novaphit gasket during installation (e.g. thermal oil, steam and solar systems).

Step 4: Design

It makes sense to design the assembly parameters, e.g. to be able to specify the tightening torque for the bolts of the sealing connection. This depends primarily on the bolt material used, the friction and the flange stability and only secondarily on the gasket material (maximum surface pressure Q_{Smax}).



Certain regulations, e.g. TA Luft explicitly require a design using FEM or EN 1591-1, which requires gasket parameters according to EN 13555, which Frenzelit provides on the website. Within the characteristic values the internal pressure is taken into account.

A selection of the gasket material and a very simple, rough design is simple and uncomplicated with the help of novaDISC. novaDISC can be downloaded free of charge from the website as a desktop version or used directly online.

Desktop version: <https://frenzelit.com/en/products/gaskets/gasket-materials/download-area#accordion-1934-103>

Online version: www.novadisc.de

The following applies to the **gasket thickness**: as thin as possible, as thick as necessary! Standard thicknesses in flange applications are 1.5 or 2.0 mm. Thinner gaskets (0.5 to 1.0 mm) are often used for filigree dimensions, e.g. in OEM applications.

Selection of gaskets in a few steps

Step 5: Assembly of the gasket

A durable and reliable sealing connection requires a perfect assembly, which allows sufficient surface pressure on the gasket. Follow the relevant installation instructions and the results of the design.



General installation instructions are available in TechInfo 1:

https://frenzelit.com/fileadmin/produkte/dichtungen/downloadbereich_novadisc_techinfos_fachartikel/en/TechInfo-01_Fitting_Instructions_en.pdf

Application engineering questions?

We help you at: gaskets@frenzelit.com, Phone: +49 9273 72-140

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