Product data sheet

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dekorial *inox*

Product Description

The names *dekorial - inox* and *stratos* stand for high pressure laminates (HPL) with a foil of stainless steel, **quality X 5 CrNi 18 10**. This German number indicates the formulation, as well as the mechanical and physical properties of the steel foil. The metal foil of 0,05 mm thickness is applied to a core of phenolic resin using high pressure.
The stainless steel surfaces of the *inox* and *stratos* products are unaffected by common household agents and resistant to the following chemical solutions: 10% nitric acid, 10% phosphoric acid, 10% sulphuric acid, 10% sodium hydroxide, 10% potassium hydroxide, 10% ammonia and 5% washing soda. Further, alcohol and other solvents such as petrol, acetone etc. have no effect on the stainless steel surface.

Contact of the stainless steel surface with foodstuffs in daily use presents no problems.

The stainless steel product is ideal for highly structured surfaces such as i.e. CRI, GEK, PNT, and WAF. But also less structured surfaces obtained by a fine sanding of the surface such as MIC, RON, ROS, WEL, and WES are possible.

The *stratos*-products have a fine elegant structure which is achieved by a special treatment of the stainless steel surface.

Slight variations of shine, colour and evenness in the surface of our stainless steel products, coming from raw stainless steel material and processing are unavoidable and normal. These variations are not diametrical to the overall appearance.

Backing sheets for *inox* and *stratos*:

We recommend 2nd choice stainless steel HPL's as an inexpensive backing sheet, alternatively:

1. S 299 GLA
2. A 209 Pure aluminium smooth – lacquered HPL (Natural aluminium colour)

This aluminium-quality in a smooth surface and also in the hammered version can be recommended as an inexpensive backing sheet.

Dimensions and Quality

All *inox* and *stratos* sheets are delivered in the dimensions 2440 mm x 1220 mm.
The standard sheet contains 2 foils of stainless steel of width 610 mm. These are butt-joined. The joints are barely visible, and should be removed by cutting along the butt-joints.
The effective width in the case of waffel structure is only 1200 mm. Here the single steel sheets have a width of 600 mm.

The tolerances for the dimensions along and across the sheets as required in EN 438 are:

- 0 mm + 10 mm

The *inox/stratos* sheets can be produced in thickness from 0.8 mm to 3.0 mm.
The standard thickness 0.8 mm, giving a density of 1.4 kg/m².

The limits for variations in thickness are governed by EN DIN 438..

Nominal thickness	**Maximum tolerances**
0.8 – 1.0 mm	± 0.10 mm
> 1.0 – 2.0 mm	± 0.15 mm
> 2.0 – 2.5 mm	± 0.18 mm
> 2.5 – 3.0 mm	± 0.20 mm

If thicker sheets of *inox* and *stratos* are required, direct contact with **Dekodur®** is advisable.

Maximum Stress -Temperature

All *inox* and *stratos* sheets (with the exception of S 298) stay steady while under continuous stress of

-24°C to +90°C

Short-lived stressing of the material, up to

-35°C to +120°C

is possible.

The quality of S 298 may not be continuously-stressed higher than +70°C and not short-lived stressed higher than +90°C.

Behaviour in case of fire – the standard quality is classified as B1 – B2 when tested according to DIN 4102. For *inox* and *stratos* sheets the quality "flame retardant" a direct contact with **Dekodur®** is advised. This quality is certified by Lloyd's Register and fulfils the requirements of IMO FTC.

A protective foil is absolutely necessary.

All products of *inox* and *stratos* are available not only in standard grade but also in postforming quality.
(With the exception of S 298, which can only be delivered in standard quality.)

In the article number the symbol "**NF**" denotes that the product is postformable.
The sheets can be delivered with a heat-resistant protection foil, if required.

The processing of *inox* and *stratos* forming quality is influenced by a number of factors: thickness in material, colour and surface structure, temperature, rate of feeding, profile to be obtained, and the radius required. The specific parameters along with the properties of the material as well as that of the plant and the choice of bonding agent must all be brought into consideration.

A general guidance: the forming temperature for the sheet is between 140° - 160°C, and the rate of feeding should lie between 10 – 20 m/min.
The sheets can in general be postformed to a radius of 10 times their thickness.
The sheets should be stored under normal climatic conditions (ca. 18° - 23°C and 50 – 65% relative humidity). Under these conditions the postforming properties remain practically unchanged for up to one year.

Application and Processing

Dekorial – inox sheets are intended for use as decorative horizontal and vertical surfaces in interior application.
Typical applications are: hotel and restaurant furniture, shelve cladding, counters and displays in shops, wall cladding, kitchen furniture, bathroom furniture, home furniture, in laboratories, in operating theaters and hospitals.
The *inox* and *stratos* laminates offer surfaces which are hard-wearing and also easy to keep clean.

The *inox* and *stratos* laminates can be sawed, routed and drilled using carbide tipped tools.

Caution: Diamond tipped sawblades and diamond tipped routers should not be used.

When processing *inox* it is important to keep the cutting pressure low so as to keep the risk of pulling up the edges of the steel sheets. Alternate tooth - fine cut saw blades with a tooth spacing of 100 by 3000 rpm, and a feed of 3 – 4 m/min have been found satisfactory.
The cut edge must always be smoothed. The use of a file or a sandpaper is one alternative, a sand block sold by the company 3M, "Diamond Handlap, Black 18" is another. All the edges in a construction must be covered to avoid the risk of cuts and injuries.

Cautions to be taken when bonding *inox* in surface presses.

Maximum temperature 60°C
Press pressure 0.15 – 0.20 N/mm² (1.5 – 2.0 bar)
Soft cushioning between laminate surface and press plates.

All standard commercial glues, which can be used for bonding standard high pressure laminates, can be used.

Glue types: dispersion glues (PVAc)
condensation resin glues (Urea resin)
contact glues
2 component glues
hot melt glues

When PU glues are used, great care must be taken that glue residues are completely removed from the surface before they harden.
With compound elements, a symmetric construction is necessary. This is obtained by the use of a balancing sheet bonded to the reverse side. A flat element can be obtained by using a sheet of the same type in 2nd quality or a balancing sheet A 209.

Bonding HPL-sheets surfaced with pure metal foils

The bonding of HPL sheets surfaced with pure metal sheets using

- contact glues (containing a solvent)
- condensation glues (resins based on phenol and/or resorcinol)

requires special precautions and close adherence to the manufacturer's instructions. Special attention must be paid to a uniform, but not too higher gluespred, sufficient airing (insufficient airing can lead to later-on blistering between the metalfoil and the core of the laminat and/or lead to the seperation of the metalfoil to the laminat. Here contact with the manufacturer is essential) and sufficient pressure in the press. The surfaces to be bonded should be kept as small as possible.
At least one edge should not exceed 800 mm.

General rules for bonding HPL, surfaced with pure metal, to wooden substrates

(particle board V 20, particle board V 100, plywood, hardboard or solid wood)

Glues employed	Condensation glues		
	Urea resin with approx. 10% filter	Urea-Melamine resin	Phenol Resorcinol resins
For use as in DIN 204	D 3	D 3	D 3 / D 4
Resistance in Temperature	between - 20°C + 150°C		between - 20°C + 150°C
	~ Gluespread: 90-150 g/m² on HPL or substrate		100-180 g/m²
	~ Open time: 2-20 min		2-15 min
	~ Press pressure approx. 3-5 bar		3-5 bar
	~ Press temperature/Press time:		
	20 °C / 15-180 min		20°C approx. 9 hours
	40 °C / 5-30 min		80°C approx. 10 min
	60 °C / 1-12 min		110°C approx. 5 min
	~ Open and press times are dependant on the amount hardener used.		

Glues employed	Contact glues		
	without hardener	with hardener	with built-in hardener
For use as in EN 204	not classified under EN 204		
Resistance to Temperature	between - 20 °C + 70 °C	between - 20 °C + 100 °C	Contact the manufacturer
	~ Gluespread: 150-200 g/m² on both HPL and substrate		These are special glues and therefor no values can be given.
	~ Open times: dependant on ambient temperature and on the type of glue used (Fingertest)		
	~ Presspressure: at least 5 bar		Contact with the manufacturer is essential.
	~ Press temperature: 20 /40 / 60 °C		
	~ Pressing times: short A roller press is recommended		

Cleaning and Maintenance

Cleaning the surface of *inox* sheets is best carried out using a clean cloth or a soft sponge. In case of extremely soiled surfaces the “Witex” laminate cleaner is recommended. This is available in two forms: Concentrate SR 6000 and as a spray cleaner SR 6001.
To make stainless steel surfaces less sensitive to finger marks, the product “Chromol” (from “Henkel”) or “Edelstahl-Crailit” (from “Vogelmann”), can be used.

Abrasive cleaners could leave marks in the surface.

Storage

The *inox and stratos* sheets should be stored in a closed room with a temperature of 18-25°C and 50-60% relative humidity. Furthermore, they have to be stored full-laminar and horizontally with a distance of 200 mm to the ground.

The sheets
- are to be protected from moisture
- should not be exposed to direct sunlight
- should not be stored in a warm-air-stream

Should horizontal storage not be possible a skew of 80°, with the surface being entirely supported by a fully covering back-support, is recommended.

Waste Disposal

Inox and *stratos* waste can also be **disposed** of in landfills in accordance with the local regulations.
The German authorities classify high pressure laminate waste as “other hardened plastic waste material”, which means that it is similar to household waste.

Should you have any further questions, please do not hesitate to contact our service department.
If you need samples you can order these in the form of chains, A5 or A4 from Dekodur®.