

# Product range

The product range is composed of two main products, distinguished by their mechanical characteristics:

**nidaplast®8:** standard product in the range. It is perfectly suitable for working up by hand lay-up lamination, spray lay up or vacuum moulding.

**nidaplast®8HP:** product with a higher density than **nidaplast®8** (thicker cell walls). It has improved mechanical characteristics.

These products are certified by a naval approval certificate No. K-3019 delivered by DNV.

### Possible options:

**DB:** product cut in chequer board pattern on one face to facilitate manufacturing of curved parts.

**8R and 8RI:** reinforced film for infusion and RTM.

# Technical characteristics

	Units	nidaplast®8	nidaplast®8HP	According to standard
<b>Dimensions:</b> 2500 x 1200 or 2134 x 1219 - 5 to 90 mm thick - please call us for other dimensions				
<b>Apparent density</b>	kg/m <sup>3</sup>	80	110	ISO 845
<b>Compression strength</b>	MPa	1,2	2,4	ISO 844
<b>Perpendicular tensile strength (at break)</b>	Mpa	0,5	0,6	NF T56-130
<b>Shear strength</b>	Mpa	0,4	0,6	ISO 1922
<b>Shear modulus</b>	Mpa	5	9	ISO 1922
<small>(Data for a 20 mm thickness. Characteristics vary with the thickness. Please call us for further information).</small>				
<b>Resistance to heat</b>				
Thickness 20 mm: R = 0.3 m2. °C/W (i.e. λ = 0.067 W/(m°C))				
Thickness 90 mm: R = 0.6 m2. °C/W (i.e. λ = 0.14W/(m°C))				
<b>Reaction to fire</b>				
Standard quality inflammable.				
Possibility of M1/F0 classification for finished sandwich panels, depending on the sandwich skin.				
<b>Chemical properties</b>				
Excellent resistance to water and most acids, bases and salt solutions.				
<b>Resistance to ultraviolet (UV) rays</b>				
Low for standard quality (protection from UV provided by the skins of the sandwich panel).				

The information provided herein can be used as a guide for use of the product, but must not be considered to guarantee good installation. Moreover, the application, use and / or transformation of products are beyond our control, and consequently the installer and / or the user and / or the transformer will be fully responsible for this work.



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## nidaplast® 8 Range



**The polypropylene honeycomb core for structural sandwich panels**

The **nidaplast®** range is composed of extruded polypropylene honeycombs coated on both sides with a polypropylene film and a non-woven polyester flies.

They come in lightweight flexible boards, very easy to use in structural sandwich panels. They can be worked up with most usual cutting, lamination and gluing techniques. Since they are thermoplastic products, they have many other specific properties further facilitating their use.

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A core of excellence

# nidaplast® 8 range

## Advantages

- Low cost
- Rigid
- Lightweight
- Shock-resistant
- Compatible with many materials
- Water-resistant
- Rot-proof
- Sound and thermal insulation
- Easy to install
- Can be recycled

Leader and reference, nidaplast® has been innovating in the field of sustainable development.

Because of their lightweight, the developed product require little energy and raw material for their manufacture. They are designed to make lightweight structural sandwich panels that limit CO<sub>2</sub> emissions during use, for example in the transport sector.

nidaplast® is committed to this environmental approach and is ISO 14001 certified.

## Installation

The working principle of a sandwich panel is to obtain a perfect bond between the core and the rigid skins. The non-woven polyester material present on nidaplast® provides an ideal surface for direct lamination of thermosetting resins (polyester, epoxy, etc.) to optimise the bond between the core and the skins.

All traditional or innovative thermosetting installation principles are possible to make sandwich panels with a nidaplast® 8 core:

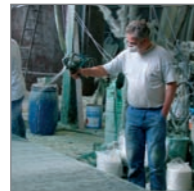
### Laminating process



Hand lay-up

#### Hand lay-up, vacuum moulding or press moulding

Hand lay-up is possible. A good laminated nidaplast® bond has to be obtained by applying a sufficiently high uniformly distributed pressure on the panel (vacuum or press moulding) or by a prior resin impregnation of nidaplast® on the mould side and then hand pressure.

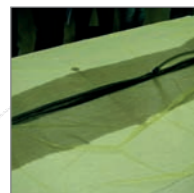


Spray lay up

#### Spray lay up

It is also possible to make thermosetting skins by glass - resin spray lay up. At the same time, it is important to achieve a good bonding of the laminated skins on the nidaplast® as for hand lay-up.

Note: in both cases, special care must be taken with the bond on the mould side face (which is hidden during use).



Infusion and RTM moulding

### Infusion or RTM moulding process

nidaplast® 8RI and 8R are special products that were developed to keep cells sealed during Infusion and RTM manufacturing processes. Cells are not filled with resin, thanks to a reinforced thermoplastic film.

To facilitate drainage of the resin, the nidaplast® 8RI must be associated with interlamination drainage devices. The distance travelled by the resin and its speed depend on its viscosity, its feed speed and also the draining capacity of reinforcement and drainage devices. These devices are placed on each side of the core, to enable impregnation of fibers in contact with the mould.

## Gluing

Previously polymerised polyester skins and other rigid skins (metal, wood, decorative laminates, marble, etc.) can be glued. Gluing is done traditionally either with a filled and fibrous resin, or a polyester glue in the case of polyester skins, or most glues (polyurethane, epoxy, vinyl, etc.) for other skins. The pressure to be applied must be distributed, adapted to the skin to be glued and not too high (< 1 bar) to avoid the risk of damaging the cells. The glues used must not have high shrinkage that could deform the panels. In all cases, it is important to make sure that the glue is compatible with the skins to be glued.

## Cutting

nidaplast® is conventionally cut using traditional means such as circular saws or cutting blades, or heating tools for a thermoplastic.



Saw cut

## Inserts and attachment of elements

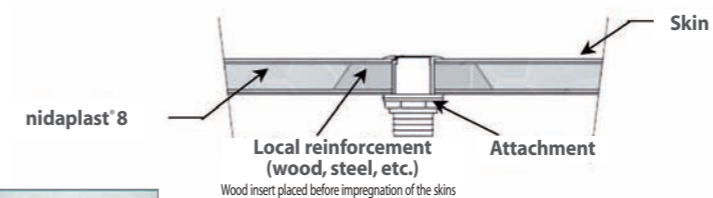
Local reinforcement or inserts may be necessary to fix elements onto a sandwich panel. The choice of the solution to be used essentially depends on the forces transmitted by this attachment onto the skins or the core.

The most frequently used solution is to install a solid insert before gluing the skins of the sandwich panel, in which fixing is done conventionally.

The most frequently used insert is wood, but metal or resin inserts can also be used.



Insert and attachment of elements



## Panel edges

There are several possible edge finishings depending on the type of manufacturing, the type of use and constraints applied to the finished panel.

Edges on which there is no mechanical load may be glued simply onto the skins of the sandwich panel.

The most frequent case is finishing with a frame or a finishing section.

< Example of edge finishes.

## Applications

nidaplast® 8 is used in many activity sectors. It brings many advantages to structures such as stiffness, lightweight and also shock resistance, water resistance, recyclability, etc.

### Building

Cladding, specially shaped or long span roofs, technical doors, prefabricated bathrooms and toilets, decorative architecture parts.



Decorative chimney



On specially shaped roof

### Transport

Doors and internal fittings for trucks, floors, side panels, car interior components.



Frame on vehicle



Ambulance floor and internal fittings



Truck panels

### Boats

Reinforcement of decks, catwalks, cockpit bottoms, structural or decorative bulkheads, internal fittings, furniture.



Internal fittings



Motor boats



Catamaran

### Facilities

Swimming pools, wind generator cabs, floating floors, etc.



Polyester pool elements



Wind generator cabs



Tank floating roof