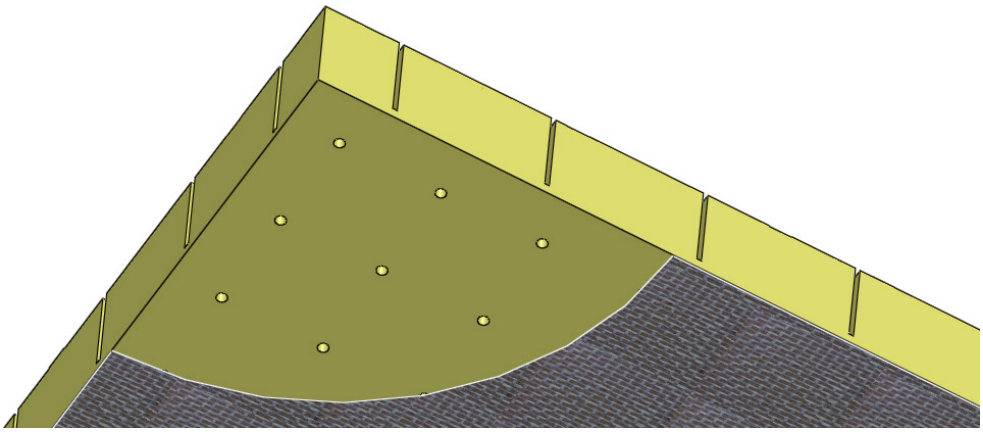
Finishing | Flow & Form

Grid scored & Perforated

The combination between the grid scores and perforations allow a vacuum assisted resin transfer in curved geometries in a reliable, rapid and robust manner.



Description

The material is grid scored to allow the material to conform to the shape where it is applied to, perforations are added to facilitate air and resin transportation from one side of the core to the other.

Benefits

- Formable
- Easy and versatile to use
- Wide process window
- Easy and fast lay-up

Typical application areas

- Hulls & topsides
- Decks & superstructures
- Wind blades & nacelles
- Miscellaneous curved mouldings

Standard finishing types[1]

Configuration	Q300	Q010
Distance between cuts	30mm	30mm
Orientation cuts	0, 90°	
Depth of cuts	~2mm from bottom of sheet	
Width of cuts[2]	~0.9mm	~1.3mm
Distance between perforations	20mm	
Perforation Ø	2mm	

1. Customized alternatives can be available upon request
2. Thickness and material choice impacts cut width.

Process characteristics

- Good wet-out
- Robust
- Reliable

The purpose of the perforations is to ensure a good transfer of resin to both sides of the core.
As mentioned earlier, another important benefit with perforations is that they yields less print through from resin shrinkage compared to having grooves facing the outer surface.

The preferred way to put the sheet down in a laminate or mold is to turn it so it closes the grid scores, which reduces resin uptake, decreases exothermic peaks and decreases risk of surface
printing.

Limitations and considerations

When the core is correctly positioned in the mold–as outlined above–the grid scores will be closed or nearly closed.

Incorrect placement may cause the curvature grooves to open or widen, resulting in gaps that fill with resin and potentially create race-tracking in resin transfer molding processes.

Resin consumption during infusion increases with core thickness.

Finishing solutions

Diab offers a comprehensive range of finishing options to deliver optimized solutions tailored to customer requirements and objectives. If the standard range does not meet specific needs, customized cuts and solutions can be developed. However, this is rarely necessary, as Diab's extensive offering and expertise cover the majority of industry demands

Kits

To fully optimize cost, performance, and quality, Diab can engineer and supply core kits delivered in lay-up sequence. These kits consist of precut pieces tailored to meet mechanical requirements, lay-up strategy, manufacturing process, and cost and quality goals.

Produced by skilled personnel using a combination of traditional and CNC equipment, the kits ensure precision and consistency.

By working with kits, customers benefit from Diab's full expertise in engineered design, core materials, and manufacturing techniques–key factors in achieving application objectives in terms of cost-efficiency, quality, and performance.

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