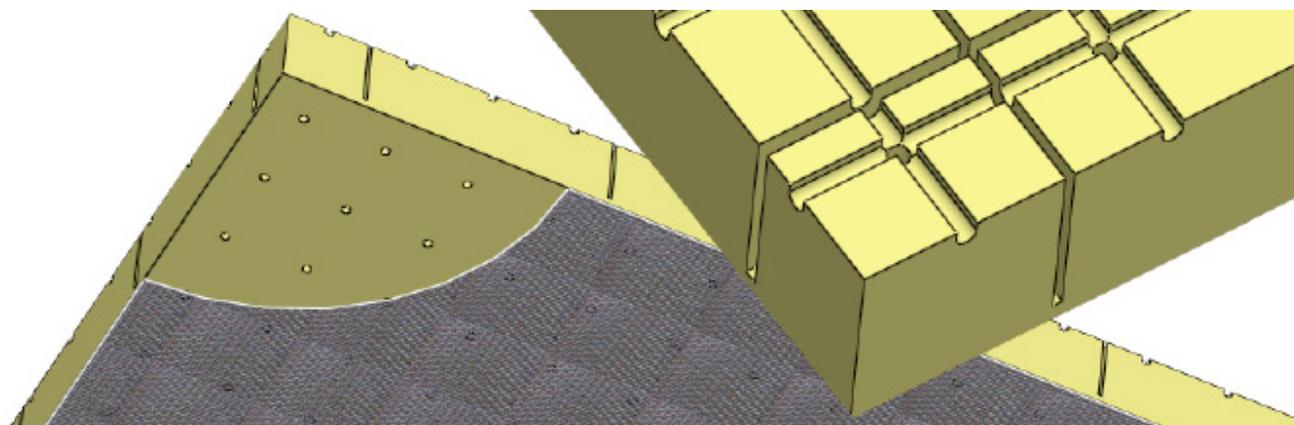


Finishing | Flow & Form

Grid Scored, grooved & perforated

A finishing that allows a fast and robust resin flow in closed molding applications where there are curved geometries.



Description

By combining several standard finishes other useful combinations are created, the table below shows finishes that suits infusion processes in curved or slightly curved curvatures.

The combination of grooves and perforations secures a robust flow and the cuts enables the core to drape on a curved surface.

Benefits

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

Typical application areas

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

Standard finishing types¹

Configuration	Q100	Q033	Q103	Q018
Distance between cuts	30mm	60mm	30mm	60 mm
Orientation cuts	0, 90°		0, 90°	
Depth of cuts ²	~2mm from bottom of sheet		~2mm from bottom of sheet	
Width of cuts ³	~0.9mm		~1.3mm	
Distance between grooves	20mm		20mm	
Orientation grooves	0, 90°		0, 90°	
Placement grooves	Top side		Top side	
Dimension grooves, D, W	2x2mm		2x2mm	
Distance between perforations	20mm		20mm	
Perforation Ø	2mm		2mm	

1. Customized alternatives can be available upon request

2. Optional to 2mm is finishing code I113 and I013, which leaves 5mm of material in bottom of sheet.

3. Thickness and material choice impacts cut width.

Process characteristics

- Good wet-out
- Robust
- Fast
- Reliable

The design of the grooves, width, depth and distance between them, in combination with the perforations yields a fast flow and a proper saturation of fibers and core surface, which secures a good bond line.

The purpose of the perforations is to ensure a good transfer of resin to both sides of the core. A further advantage is that the infusion feeder lines can be positioned where it is most strategically appropriate, independent of the core sheet position.

Another important benefit with perforations is that it 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 pre-cut 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.

Disclaimer:

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