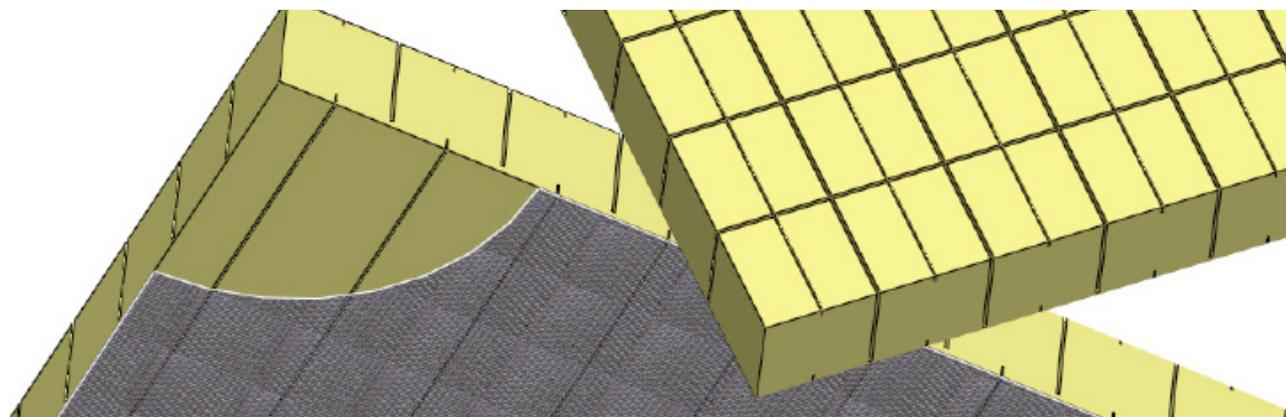


Finishing | Form & Flow

Grid scored & perforated

Grid Scored material that is cut in two directions, which makes it formable and flexible for use in curved molds and applications. Not perforated, however thin grooves between cuts create “perforations” allowing resin distribution and secure wet-out on both sides of core.



Description

The configuration of cuts and grooves enables a vacuum assisted resin transfer in curved geometries in a reliable, rapid and robust manner.

As illustrated in illustration above, a shallow groove has been added to the middle of the blocks created by the GS scores, this applies to both sides of the core.

The crossing between the cut and groove creates a perforation, which enables resin transportation to both sides of the core.

Benefits

- Formable
- Easy and versatile to use
- Can be combined with other finishes

Typical application areas

- Hulls
- Decks & Superstructures
- Wind blades & nacelles
- Miscellaneous curved mouldings

Standard finishing types¹

Configuration	Q200	Q201
Distance between cuts	30mm	30mm
Depth of cuts	~2mm from bottom of sheet	~2mm from bottom of sheet
Width of cuts ²	~0.9mm	~1.3mm
Distance between grooves	30mm	30mm
Orientation grooves	0°	0°
Depth of grooves	~3.5mm	~3.5mm
Width of grooves	~0.9mm	~0.9mm

1. Customized alternatives can be available upon request

2. Thickness and material choice impacts cut width.

PROCESS CHARACTERISTICS

- Good wet-out
- Robust
- Fast
- Reliable

The size of the grooves and cuts enables a variety of resins with different viscosities to flow securely and fast along the cores surfaces and to both sides of the core, which in its turn secures a good bond between laminate and core.

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

The purpose of the perforations, caused by intersecting cuts, is to ensure a good transfer of resin to both sides of the core, usually from bagside of the core to the mold side 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.

The preferred way to put 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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