

Q200 (GSC30/GRV2)

Grid Scored & V-Grooved

Main feature: Formable / Distributor

GSC30/GRV2 is a combined finishing code that creates new opportunities to meet specific production requirements. The combination between GSC30 and GRV2 allow a vacuum assisted resin transfer in curved geometries in a reliable, rapid and robust manner.

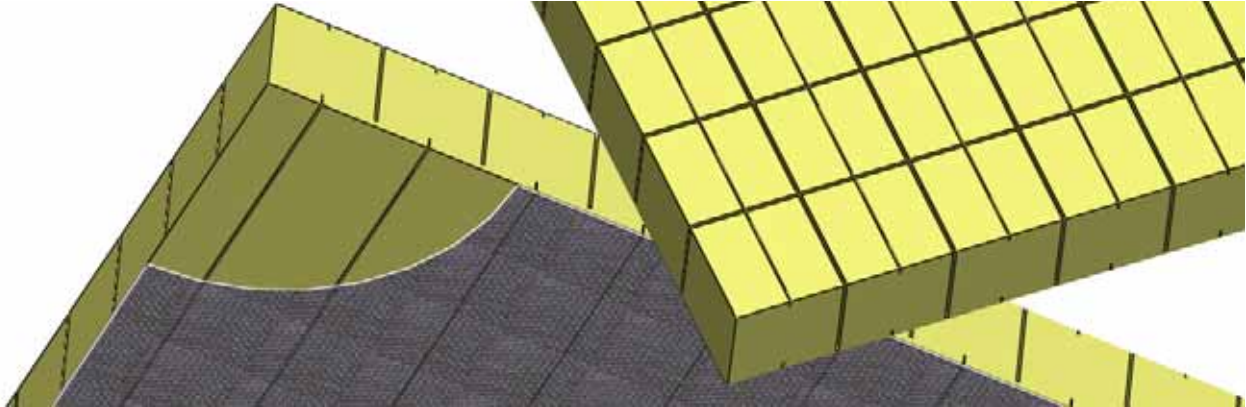


Figure 1: Q200 bottom view (left) and top view (right)

Description

As illustrated above, a shallow V-shaped 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 two grooves yields a perforation, which enables resin transportation to both sides of the core.

Typical measurements:	
GRV2	
Center-to-center (c - c)	30mm
Depth (D)	~3.5mm
Width (W)	~0.3mm at tip, tapered
GSC30	
Center-to-center (c - c)	30mm
Depth (D)	~2mm from bottom of sheet
Width (W)	~0.9mm U-shaped cut

Benefits

- Reduces cost
- Saves labor
- Big process window
- Minimizing the risk of print troughs from the core
- Facilitating easy and fast lay-up of infusion strategy

In addition to excellent infusion characteristics, Q200 also has economical benefits since there is no need for additional infusion materials, such as additional flow mediums. Due to the fast flow which is achieved when using the Q200 combination, the distances between feeder lines are not as critical as it is the case without this configuration. This means a lot of savings both in labor, materials and consumables compared to other infusion methods.

Peel plies are seldom used in combination with Q200 since the added value is minor. However, it may occasionally be used to facilitate an easier grinding prior to secondary bonding or to get a smoother surface.

Typical applications

- Decks
- Top sides
- Hulls
- Blade shells

Q200 is very well suited for applications with curved surfaces.

For very high surface finish demands a skin-coat or barrier coat is recommended.

Process characteristics

- Good wet-out
- Robust
- Fast
- Reliable

The size of the grooves and perforations 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 bag-side 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 the Q200 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

Resin consumption increases with thickness of core.

Q200 is intended for curved surfaces only.

Q200 is usually the first option in comparison to Q100 due to its lower resin uptake, however Q100 is the alternative in thicker applications where Q200 not is manufacturable.

Finishing Solutions

DIAB utilizes a combination of its complete range of finishing options to provide an optimized solution based on customers' requirements and objectives. Should the standard range not fulfill the needs, tailor made cuts and solutions can be defined and developed. Normally this is not needed as the range of options and DIAB competence covers majority of needs in various industries.

Kits

To fully optimize the application for cost, performance and quality DIAB can engineer and design a core kit delivered in lay-up sequence. The kit of precut pieces is optimized for mechanical requirements, lay-up, manufacturing process, cost and quality objectives. The kit is produced by our skilled personnel using a combination of traditional and CNC equipment to achieve the desired result.

By working with kits our customers gain access to the full competence of DIAB in terms of engineered design, core materials and range of manufacturing techniques, all having a profound impact on the ability to reach the objectives of the application from cost, quality and performance point of view.

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