

Grooved & Perforated

Main feature: Distributor

GPC2 is an attribute to DIAB core materials, developed to make the infusion process reliable, fast and robust on flat or slightly curved surfaces.

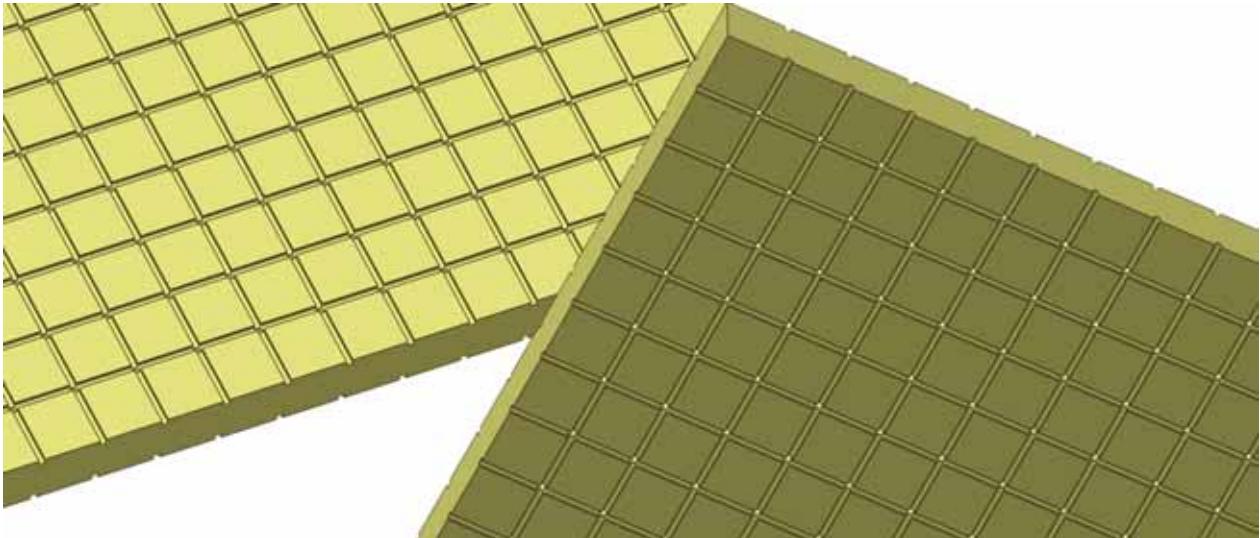


Figure 1: GPC2 top view (left picture) and bottom view (right)

Description GPC2

As shown in figure 1, the core is perforated and both sides of the core has a cross grooved surface.

Typical measurements:	
Center-to-center (c-c)	20mm
Depth (D)	2mm
Width (W)	2mm
Perforation (Ø)	2mm

Benefits

- Reduces cost
- Saves labor
- Big process window
- Facilitating easy and fast lay-up of infusion strategy

In addition to excellent infusion characteristics, GPC2 also has economical benefits since there is no need for additional infusion materials. For example, flow meshes or flow mats, are not needed due to the effective grooving and perforating of the core. Due to its fast flow, the distances between

feeder lines are not as critical as it is the case without this configuration. This means that there are a lot of savings both in labor, materials and consumables compared to other infusion methods.

Peel plies are seldom used in combination with GPC2 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
- Panels
- Webs
- Stiffeners

GPC2 is very well suited for flat applications where efficiency and large volumes are important. It is true in particular where the core thickness is 20mm or less.

Process characteristics

- Good wet-out
- Robust
- Fast
- Reliable

The size of the grooves and perforations enable both low and high viscosity resins to flow securely to both sides of the core which means that GPC2 is both reliable and fast when used in an infusion process.

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, 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.

Limitations and considerations

Resin consumption increases with thickness. GPC2 is intended for flat surfaces¹. The grooving on both sides of the core yield a really robust process, the drawback is the risk of having print through due to the grooves.

¹. In combination with another finishing code, for example GS30, GPC2 may be used also in applications with curved surfaces.

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.

This data sheet may be subject to revision and changes due to development and changes of the material. The data is derived from tests and experience. The data is average data and should be treated as such. Calculations should be verified by actual tests. The data is furnished without liability for the company and does not constitute a warranty or representation in respect of the material or its use. The company reserves the right to release new data sheets in replacement.

All content in this publication is protected by International Copyright Laws.

Copyright © Diab January 2014.

Doc No: CFD-Batch.02_2016.rev2

Box 201
312 22 Laholm, Sweden
Phone: +46 (0)430 163 00
E-mail: info@se.diabgroup.com