

Always at the core of your solution

Diab

# TAKING FOAM KITS TO THE NEXT LEVEL

Advanced kits with fossil-free PVC

[diabgroup.com](http://diabgroup.com)

# ADVANCED KITTING FOR MAXIMUM WEIGHT SAVING, PERFORMANCE, AND CO<sub>2</sub> REDUCTION

Diab innovative Advanced kits offer the lowest weight, an optimized fit in the mould, reduced resin consumption, improved handling performance, and improved cosmetics for infusion and prepreg applications. By only utilising ISCC PLUS-certified fossil-free PVC, it contributes even further to a smaller carbon footprint. Combining Diab's extensive knowledge of kits and composite manufacturing with custom software created explicitly for the task, we can optimize the curvature cuts required in the core to perfectly fit the local curvature of your mould while minimizing the resin usage.

Through a CNC proprietary cut profile for each kit detail, the core is cut part way through its thickness, eliminating the need for a scrim backing, leaving a smooth surface and curvature on the mould side.

Perforations and grooves can be added to the core surface to distribute resin without the need for a flow mesh. The result is a kit with excellent formability, reduced resin consumption, and an improved surface finish.

## BENEFITS

- Lower resin consumption, up to 60% less than a traditional GS kit.
- Reduced structural weight.
- Improved surface quality due to an intact foam layer without GS scrim closest to the mould side fibre reinforcement.
- Improved fit in the mould. Each core detail is CNC machined for high accuracy and repeatability, and can be designed to have zero spring back.
- Varying bevels can easily be implemented.
- Improved quality and consistency of infusion (reduced risk of race-tracks when infusing).
- Allowing larger foam details will speed up the lay-up procedure.
- Repeatability between kits.
- Simple to incorporate add-ons into the foam kit for better positioning such as laser tracking lines or Kit-Locks.

- Kit-Locks enable easier positioning in the mould and ensures every panel is tightly joined, eliminating the need of hot melt glue.
- Due to the improved fit in the mould, reduced number of grids, and minimal gaps between details, the high laminate quality achieved dramatically reduces the need for post-grinding and finishing work, reducing cost.
- The Diab developed program to determine optimum grid directions in each detail allows the total resin usage for the core kit to be calculated and compared to other kit designs.

Advanced kitting is the optimal solution where weight, resin usage, and surface finishing are critical. Sailing boats, powerboats, yachts, simulators, antennas, aerospace applications, etc., are excellent examples of where you can utilize the benefits of Advanced kits to the best effect.

## TECHNICAL INFORMATION

- Every core detail is individually CNC cut, and each cut is orientated to generate the desired curvature of the component.
- The core is not cut all the way through its thickness, leaving a smooth mould side core surface.
- Perforations or/and resin distribution grooves can be added depending on the manufacturing method selected. Several options are available.

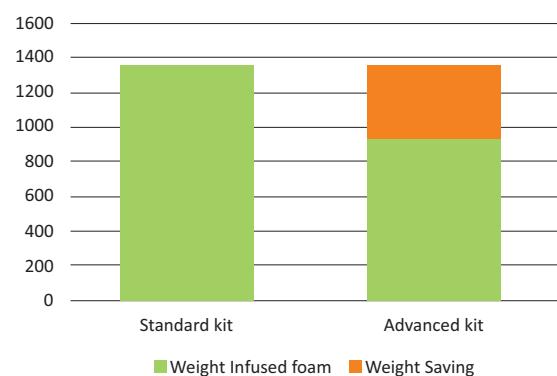


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Kit-Lock

Weight comparison (kg)



Advanced kits offer substantial resin uptake reductions compared to standard kits. The reduction in resin tied up by the core material and finishing will, in turn, result in a reduced carbon footprint.

For example, replacing a standard kit in an infused 80-ft sailboat hull with an advanced kit would save 419 kg of resin and reduce the carbon footprint by 1,677 kg CO<sub>2</sub> equivalent, assuming the resin's GWP value is 4.0 kgCO<sub>2</sub>/kg.

## CERTIFIED FOSSIL-FREE PVC

By utilizing ISCC PLUS mass balanced fossil-free PVC (raw material) and producing the foam with 100% renewable energy, Advanced kits contribute even further to a smaller carbon footprint.

The ISCC PLUS certification guarantees full traceability throughout the mass balanced material

supply chain to the finished kit at Diab's processing unit, including a sustainability declaration upon delivery. All new Advanced kits will include an estimated GWP (Global Warming Potential)/carbon footprint value for each kit.

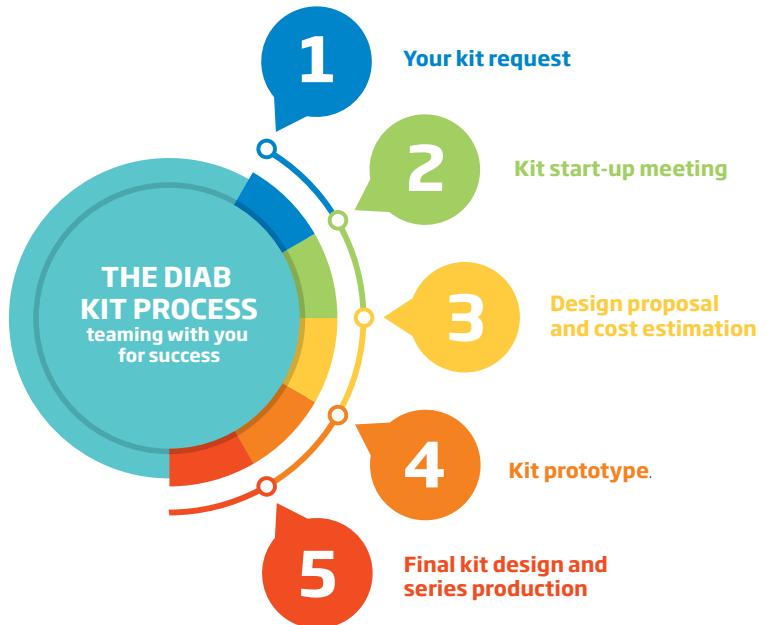
## THE DIAB KIT PROCESS - TEAMING UP WITH YOU FOR SUCCESS

Our Sales team and Application Center will work together with you all the way.

Diab Application Center is our powerful team with engineers, product specialists, and process specialists ready to team up with you to realize the total value of composites.

Advanced kits is used by an increasing amount of customers and at well respected brands.

Contact our experts for more information.



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