
PROVEN FASTENING SOLUTIONS IN SANDWICH PANELS

MOBILITY APPLICATIONS



LIGHT WEIGHT SANDWICH SOLUTIONS WITH PROVEN DESIGN AND ENGINEERING OF FASTENING IN MOBILITY APPLICATIONS

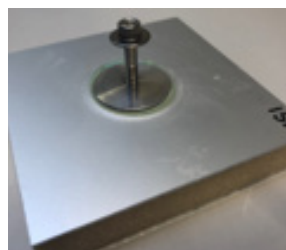
A lighter and durable design will have a positive impact on the environment with reduced fuel consumption and lower carbon footprint. Diab's sandwich solution offers an ideal way to reduce weight by introducing a recyclable, insulating PET core material capable of withstanding structural demands.

In lightweight applications, reliable fastening is a must. Diab has investigated different fastening methods like screws and various types of inserts and can now recommend verified techniques for fixing elements that carry load. Using extensive

lab testing, Diab created design procedures that include real-life circumstances like pull out, shear, ageing and fatigue. With Diab's know-how, we can engineer fastening solutions that contributes to lighter and more sustainable composite applications.



Screws



Bonded inserts



Steel embedded inserts



GRP embedded inserts

CLASSIFICATION OF FIXATIONS

We classify the fixations in composite panels into three types depending on the strength and requirements of the fastening:

Type 1

Max strength and structural reliability, (equal or larger than the strength of the composite part)

Type 2

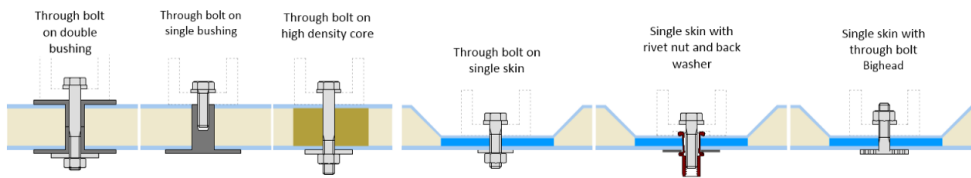
High structural strength up to a limit set by design (grab bars, door hinges, furniture, lightning...)

Type 3

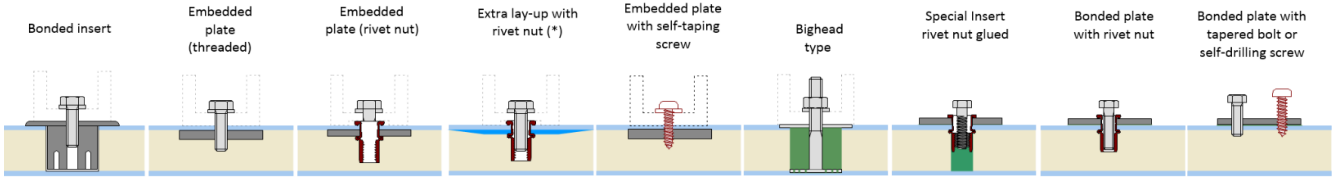
Low demand (unloaded accessories, wiring...)



Type 1 - Maximum strenght



Type 2 - High strenght



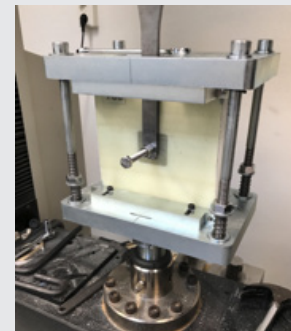
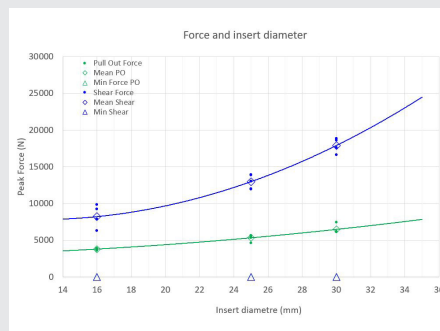
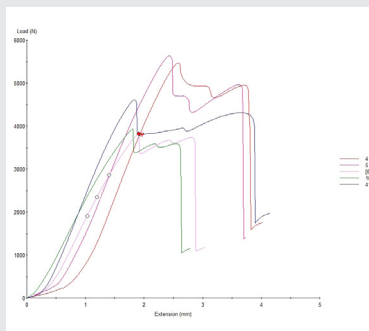
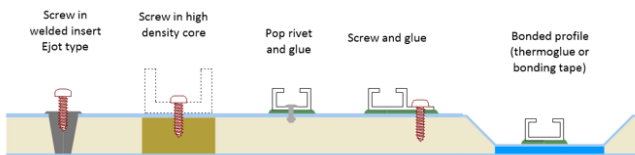
(*) Only in resin laminates



FASTENING POSSIBILITIES

There are many possibilities to make fixations on sandwich panels according to the required load scenario.

Type 3 - Lower demand



Using extensive lab testing, Diab created design procedures that include real-life circumstances like pull out, shear, ageing and fatigue scenarios.

With this know-how, Diab can help customers design fastening solutions that contribute to lighter and sustainable composite applications.

BENEFITS WITH A SANDWICH SOLUTION

A sandwich solution requires a minimum of maintenance with a positive environmental and cost impact compared to traditional materials. Diab cores in light weight sandwich structures are qualified into multiple projects compliant with EN45545-2. With aluminum, HPL or fibre reinforced composites skins in combination with fire retardant resins, there are several alternatives to achieve a safe and lightweight sustainable solution.

DIAB APPLICATION CENTER - 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.

Contact our experts for more information.

Diab is a world leader in sandwich composite solutions that make customers' products stronger, lighter and smarter. Diab provides a range of core materials, cost-effective kits and finishings, along with in-depth knowledge on composites. Diab also provides engineering services for composite technology through Diab Application Center. Diab is a participant in the UN Global Compact.



Diab Group

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