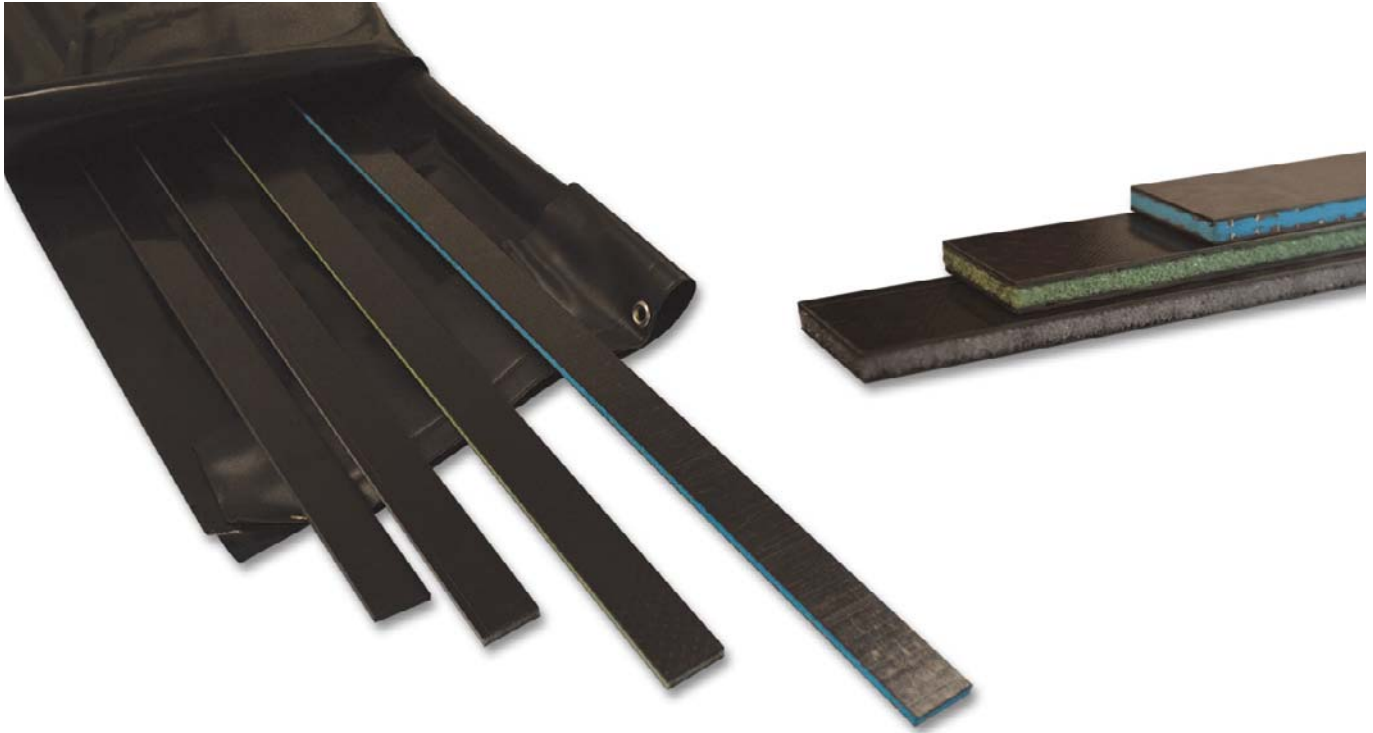




SM1004D2 AND SM1005B2

CORED COMPOSITE BEAM SET

A set of carbon composite beams with cored construction. The different composition of the core of each beam exhibiting differing bending/stiffness characteristics.



KEY FEATURES

- Forms an introduction to cored beams and comparison to a solid carbon composite beam
- Fits in the Beam Apparatus (SM1004) or the Euler Buckling Apparatus (SM1005) to extend their experimental range
- Includes four beams in a storage wallet

CORED COMPOSITE BEAM SET

DESCRIPTION

Composite materials with specific properties are common in many industries such as aerospace, automotive, sports and civil engineering. Cored composite materials are lightweight, stiff and strong. They have good fatigue and impact resistance. Their properties can be tailored to match the specific needs of end users by changing constituent material types and manufacturing parameters.

For cored composite materials, a variety of carbon fibre architectures can be obtained by sandwiching a lightweight material with a composite skin. This reduces weight and cost with only a small compromise on stiffness.

The combination of materials used results in a specific configuration of mechanical and performance properties of the resulting composites and determines the end use possibilities.

The beams in the TecEquipment Cored Composite Beam Set have been designed to introduce students to the properties of cored beams and their construction.

The beam types included in the basic kits are:

- Foam core beam with 3.2 mm thick foam layer
- Foam core beam with 3.8 mm thick foam layer
- Honeycomb core beam with 3.2 mm honeycomb layer
- Solid carbon composite beam

All beams are bonded with epoxy resin.

STANDARD FEATURES

- Five-year warranty
- Manufactured in accordance with the latest European Union directives
- ISO9001 certified manufacturer

LEARNING OUTCOMES

- Introduction to cored composites
- Introduction to different core materials
- Benefits of cored composites
- Determination of flexural rigidity and Young's modulus
- Comparison of different core materials
- Comparison of different core/skin thicknesses
- Comparison of cored beam with solid composite beam
- Deflection of cored composite beams

ESSENTIAL BASE UNIT

- Beam Apparatus (SM1004) for SM1004D2

OR

- Euler Buckling Apparatus (SM1005) for SM1005B2

OPERATING CONDITIONS

OPERATING ENVIRONMENT:

Laboratory environment

STORAGE TEMPERATURE RANGE:

-25°C to +55°C (when packed for transport)

OPERATING TEMPERATURE RANGE:

+5°C to +40°C

OPERATING RELATIVE HUMIDITY RANGE:

80% at temperatures < 31°C decreasing linearly to 50% at 40°C

SPECIFICATIONS

TecEquipment is committed to a programme of continuous improvement; hence we reserve the right to alter the design and product specification without prior notice.

DIMENSIONS

Each beam 5 x 19 x 750 mm (nominal)

APPROXIMATE NETT WEIGHT:

1 kg

APPROXIMATE PACKED VOLUME:

0.02 m³