

## Solutions@Mecmesin

### Adhesive Bond Strength of Construction Panels

#### Specification

SIPS Frames UK Ltd is one of the UK's leading independent Structural Insulated Panel System manufacturers, for use in the construction of kit houses by self builders. The manufacture of the panels entails two sheets of orientated strand board (OSB) fixed to one sheet of expanded polystyrene (EPS), which are then bonded together using a specially produced adhesive to form an extremely strong panel, more robust than most other forms of construction material.

As part of their BM Trada Certification, SIPS Eco Panels wanted to test the bond strength between these two materials in-house, and retain accurate records of their results.

#### Solution

Mecmesin provided a MultiTest 1-x console-controlled test system, in conjunction with a pair of parallel grips with pyramid jaws.

The panel is gripped tightly between the jaws, forming a clamp around the two bonded materials at both ends. A tensile load is then applied to the whole panel at a rate of 10mm/min until the sample breaks. The sample passes the test if the bond between OSB and EPS sections stays in tact, yet breaks elsewhere within the expanded polystyrene sheet.

A major benefit of using the MultiTest-x test system is that it can be pre-programmed by a Mecmesin technician during installation, enabling customers to easily begin testing samples with minimal training required to operate the system. This user-friendly utility means that test operators at SIPS Frames simply position the sample between the grips and press the 'Start' button. Upon completion of the test, data is automatically sent to a PC and then saved to a database for traceability of results.

By automating the test procedure, Mecmesin's MultiTest-x system has eliminated any human error, which had previously occurred when manually entering test results into their database. It has also greatly improved the turnaround time involved in testing multiple samples on a weekly basis in line with BM Trada Certification requirements.



The pre-programmed MultiTest-x enables automatic transfer of data to a PC



Sample shown has passed test as bond is still in tact

#### System

- MultiTest 1-x - console-controlled test frame, rated to 1000N
- XLC-S 1000N
- Pair of Parallel Grips with Pyramid Jaw

#### Other Solutions

- Screw retention force of building materials
- Plasterboard testing
- Scaffold support netting tensile test

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