

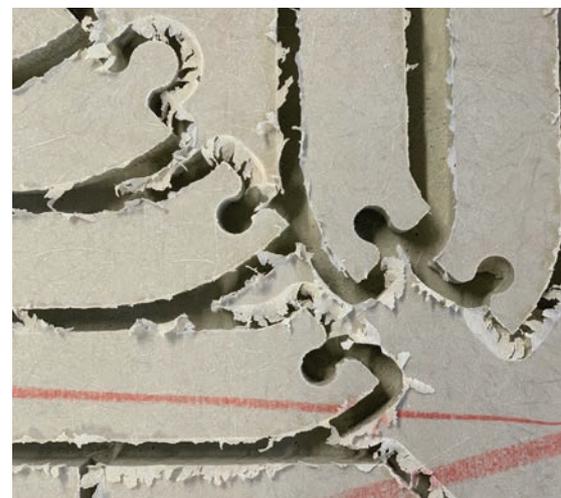
The innovative coupling: resistant and waterproof

Tecnowall, the Italian company specialised in sandwich panels for recreational vehicle bodies, has further developed its FibroPlast and TecnoPlast structural profiles with the addition of a jigsaw connection system to ensure outstanding mechanical strength and perfect waterproofing.

Words Giorgio Carpi



Materials alternative to traditional wooden strips for making sandwich walls are now used by many RV manufacturers worldwide, even the most conservative. Tecnowall was an innovator in the field when introduced two advanced concept products lines, called TecnoPlast and FibroPlast, designed to replace wooden slats in side, roof and floor panels, seven years ago. These products are produced in from 780 x 4500 mm sheets, of various thickness and in three density variants: 300, 350 and 400 kg/m³ for FibroPlast and 350, 400 and 450 kg/m³ for TecnoPlast. FibroPlast, which contains about 30% of fibreglass, can be formed shaped in any shape or thickness. Tecnowall is specialised in forming of these structural components, creat-





Company Profile

The Italian company TecnoWall was founded in 2001 in Tavarnelle Val di Pesa, working straightaway with companies such as Arca and Mirage, supplying sandwich panels designed for motorhome bodies. In 2006, the company's production site was transferred to Poggibonsi, with a subsequent increase in production space in 2009. Today, the business provides employment for about twenty people, availing itself of a covered production site measuring 5800 square meters. TecnoWall continues to operate in the motorhome body segment, supplying manufacturers with sandwich panels for walls, roofs and floors. It makes use of a variety of core materials, from traditional expanded polystyrene (EPS) to more modern extruded polystyrene foam (XPS), as well as closed cell PVC, polyurethane and honeycomb polypropylene. Traditional internal wooden battens are combined with polyurethane frames, using metal reinforcements. With a strong presence throughout the European recreational vehicle market, TecnoWall also boasts business relations with manufacturers in China, Australia and South Africa. The motorhome sector predominates, but the company also works in the naval and heavy transport vehicle sector, in addition to producing panels for the construction of prefabricated housing. TecnoWall possesses UNI EN ISO 9001:2000 certification.

ing curved parts to perfectly follow the body contours. One of the innovations presented two years ago was the rounded outer part of the bar to perfectly accommodate the aluminium covering section.

Jigsaw couplings

Today, Tecnowall has discovered (and patented) a brilliant solution that solves the problem of coupling between bars that form the peripheral profile, called jigsaw coupling. In order to achieve this particular type of engagement, Tecnowall purchased dedicated machinery which exploits a particular vacuum system to hold even small strips. The male and female couplings fit perfectly to form assembled structural profile which does not require stapling, nails or other types of fastener. The curved profile of the jigsaw interlocking elements also creates an impenetrable barrier that water cannot cross in any way to infiltrate into the wall underneath. "Until now, to make a round side, for instance an overcab, straight edges were placed one next to the other and stapled to create the perimeter", explained Yuri Pierini, owner of Tecnowall. "With this patented system, we can create connections which are stronger from the mechanical point of view and are impenetrable by water. We introduced it at the trade fair in Düsseldorf and some manufacturers have already adopted it".

Beyond Europe

The jigsaw versions of FibroPlast and TecnoPlast are already being used by some recreational vehicle manufacturers in Australia and China. In China, in particular, Tecnowall is supplying Loncen Caravan Co. LTD that has recently created a joint venture with the Erwin Hymmer Group. By teaming up with this major group, Tecnowall (which is a time-honoured supplier of Loncen) is about to obtain CCC China Compulsory Certification. This will open new and interesting scenarios for the Italian company also on the Chinese market to which the whole world has been looking for years now with growing interest. "We already comply with many of

the requirements necessary to obtain CCC certification, because we have been ISO 9001 certified for 15 years and the new certificate is not very different", said Yuri Pierini. "I was recently approached by some North American manufacturers. The mechanical properties of FibroPlast are perfect for making the structural perimeters of American recreational vehicles. Today, US manufacturers rely heavily on welded aluminium, but FibroPlast, with the jigsaw connection system, can provide better insulation and mechanical strength, comparable to that achieved by current systems. We can supply FibroPlast sheets, bars or even pre-formed sections".

FibroPlast is not subject to rotting because it is characterized by very low water absorption. The thermal conductivity is just 0.041 W/m²K, with a linear thermal expansion coefficient of 0.044%. The mechanical properties are excellent, with a compressive strength greater than 12000 kPa and a flexural strength higher than 13 N/mm². Furthermore, it is fireproof because glass fibres are flame retardant.



Yuri Pierini

