



Alu-Timber - Merging Material Solutions

Alu-Timber

Creating sustainable, energy efficient buildings is a cornerstone of design. The facade is now a functional element to the building; a membrane which keeps the building warmer in the winter and cooler in the summer, reducing the need for additional energy from heating or air conditioning. The materials used must be sustainable, renewable and have a real end of life use.

Taking all current specification and building regulation demands into consideration, The Parkside Group Limited are pleased to launch Alu-Timber, a range of aluminium/timber windows, doors and framing, that combines sustainably grown FSC or PEFC timbers with 100% recyclable aluminium.

Timber

Timber is a non-conductive material, minimising heat loss and, by using high performing glass, the lowest U-values are achievable. To protect, aluminium gives the timber facade a standard 25 year performance guarantee. Alu-Timber gives the specifier benefits: low U-values to achieve current legislation as well as reassurance for the client that the facade will last, with minimal maintenance.

All of the components within Alu-Timber are sourced with the key directive of minimising both waste in their production and their impact on the environment. Technological advances mean that traditional softwoods are now processed and are classed as Engineered Timbers. The Engineered Timber is laminate bonded, The laminating gives the timber about seven times the stress factor of solid oak and increases its stability by 30-40% compared to its solid equivalent.

For specific projects, Traditional Solid Timbers, with the same accreditation, are available such as Oak and Ash. Due to their strength, these woods are classed as solid timbers and merely treated with a water soluble lacquer to ensure their design life.

All engineered timbers (Larch, Redwood, Eucalyptus) are farmed from sustainable managed forests compliant with FSC, PEFC accreditations. However, the cut timber is still a valuable resource and its use must be maximised. With this in mind engineered timbers create minimal wastage. The timber is selected at three different lengths 300mm, 1200mm and 1800mm and finger jointed together to the desired length; this ensures that more of the timber can be used. The timber is laminate bonded together with formaldehyde free polyurethane adhesives and a water soluble environmentally friendly lacquer is applied which is fully comparable with natural wood. If solid timbers, such as Oak, are required, certification from PEFC or FSC ensures the responsible farming and re-planting strategies are used.

Aluminium

Aluminium with its cradle to cradle lifecycle, recyclability and longevity, is the ideal material to give timber a leading edge. Its high strength to weight ratio means that less material can be used to give the timber facade its 25 year guarantee. At its end of life the aluminium is 100% recyclable and can be used again and again with no loss to its form or quality.

Aluminium is a tried and tested facade material, providing a well known realm of design solutions. By taking this renowned industry design, fabrication and installation expertise and merging it with the very latest timber innovation, Alu-Timber provides the market with windows, doors and framing that can be fabricated and installed as aluminium facade products. Using these tried and tested aluminium construction methods, Alu-Timber provides reassurance for clients, specifiers and building end users.

Aluminium provides durability, is corrosion resistant and has a high strength to weight ratio meaning that less can be used to create the desired profile. Aluminium is produced from Bauxite, one of the most abundant minerals in the earth's crust. Sustainability concerns are alleviated by the knowledge that we have at least 300 years of known reserves of Bauxite, and this does not allow for the fact that 75% of all aluminium used in construction is from recycled sources.

With an ever increasing proportion of re-cycled material in use, aluminium can be accurately described as the ultimate sustainable material. Producing aluminium is an energy intensive procedure. However, two-thirds of the energy required to extract aluminium is supplied by environmentally friendly, hydroelectric power. Aluminium is polyester powder coated or anodised. With minimal maintenance its design life is almost limitless.

Alu-Timber: A True Composite

Creating longevity is the whole ethos of Alu-Timber, protecting the timber to the external with aluminium throughout the facade. To construct timber corner joints, the timber is cut at 45° then sealed, so there is no exposed raw timber joint, creating reassurance for the specifier that rot will not set in. Dowel pins are then used to secure the corner. The aluminium is made traditionally, with cleats and 45° mitres. The aluminium has a nosing which fits into a groove within the timber frame; the two materials are simply pressed together to create Alu-Timber.

Timber and aluminium are two distinct materials. Over time, expansion and contraction occurs at different rates; concern should highlight the jointing of these materials. Alu-Timber is bonded together with a flexible seal, creating a true solid composite, with designed-in features to cater for any differential movement.

Alu-Timber provides additional reassurance with its guarantees. Due to its traditional aluminium construction the external polyester powder coated frames are guaranteed in a non-marine environment of 25 years. The internal timber is a stable material which has an indefinite life-cycle.

Alu-Timber Performance

The Alu-Timber range includes casement, tilt and turn windows and an open-in and open-out door. Due to the superior jointing of Alu-Timber, it has inherently high deflection loads. Alu-Timber can therefore be used as a window walling suite up to storey height, creating modular framing systems with opening windows and doors.

To meet current building regulations, the glazing is 24mm or 28mm with the capacity for increased glazing sizes on a project specific basis. These two sizes offer a cost effective

Double or triple glazed solutions, offer U-values as low as 1.43W/m²K for a CEN sized window. This standard U-value, depending on the window configuration, can be lower. The Parkside Group Limited offers project-by-project U-value calculations to suit your SBEM requirements.

The Alu-Timber range has exceeded the requirements of BS 6375, achieving 600Pa for air, 500Pa for water, and wind resistance to 2400Pa. Security concerns are alleviated with the Alu-Timber designed to conform with BS7950 for windows and PAS 23 and PAS 24 for the Door sets. Wind loadings and calculations are undertaken to BS 6399 and CWCT standards.

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Email: projects@parksidegrp.co.uk

Web: www.parksidegrp.co.uk



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