Fly Ash Polyurethane Composite Lumber

Fly ash polyurethane (PUR) composite lumber can contain up to 65% fly ash, a waste product from electric utility plants. Fly ash is an inexpensive but highly structured filler that reduces material cost. Composite lumber produced from fly ash and PUR has a combination of strength, flexibility, resistance to water absorption and fire resistance. It is an environment friendly wood alternative lumber that offers aesthetic attributes of wood while providing excellent weathering resistance and practically nil maintenance in applications like decking, fencing, railing and sidings. It is a sustainable material manufactured mainly from reclaimed minerals.

Fly ash polyurethane (PUR) composite lumber does not rot, is not affected by termites, does not support mold and mildew, absorb water or significantly expand or contract. The material is also fire resistant, easyto stain, colour-fast, green building product. It is a highly versatile material with working properties similar to those of wood, and can be sawed, screwed and nailed together with regular wood working tools. Fly ash PUR composite lumber may be around 20% lighter than other lumber composite products. Due to the material's high strength and sag resistance, fly ash PUR composite lumber can be manufactured for longer joist spans resulting in savings in substructure costs.

Fly ash PUR composite lumber is manufactured by continuous process using conventional polyether polyols and MDI (methylene diphenyl diisocyanate). A water blown foaming system is used to produce materials with wide range of densities between 600 to 900 kg/m^3 depending on end application. Typical product density is around 750 kg/m^3 with a high ratio of modulus of elasticity/density (around 60), very low water absorption (<0.40 percent), a low coefficient of thermal expansion and high screw-withdrawal strength. In addition, the fly-ash PUR composite lumber boards have excellent fire and weather resistance, a high thermal oxidative aging performance, as well as good stain, slip, mould and termite resistance.

Fly ash PUR composite lumber complies with LEED requirements contributing valuable points in the LEED 4.1 and 4.2 categories (large amount of recycled content and reduced energy required for production).

We can provide know-how for the project and assist you in its planning and implementation. As a first step we can prepare a Techno Economic Project Feasibility Report that will provide a realistic picture and help you to take an informed business decision.

One you decide to go ahead with the project we can provide complete assistance for the project implementation i.e. selection and sourcing of plant & machinery, plant layout and factory design, selection & sourcing of utilities and support equipment, recruiting technical manpower, commissioning of plant, sourcing of raw material and chemicals, process know-how, quality control and testing systems, product technical qualification, target market segments, end application know-how, market intelligence

Best regards,

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