

LIGHTWEIGHT BRICK PANEL COMPOSITE CURING

Application

Brick homes are desirable for many reasons including low maintenance, energy efficiency, fire and weather resistance, and sound resistance. Brick homes are also generally more expensive than conventionally sided homes, but tend to retain their value better. The disadvantages of using brick are cost of materials, durability of mortar, and the expense of construction. New home builders and buyers are looking for alternate materials and construction methods to obtain the advantages of building with brick while minimizing the disadvantages.

Qora® claddings from Arcitell® are composite panels with both the look and feel of stone. At the heart of Arcitell® products are composite sheets they manufacture by mixing a phenolic resin, sand, and other proprietary compounds. The mixture is poured over fiberglass material with peel ply applied to both sides of the sheet. Belden Brick Company wished to create a new product that would have the advantages of brick while minimizing the disadvantages.

Solution

Belden Brick Company is working with Arcitell® to create a product known as RBP which is made from real brick and the same composite panel backing used to make Qora®. Standard bricks are cut to reduce the overall weight of each brick. Bricks are placed in a form with space allowing for sand (mortar) to fit in between. The composite panel is then laid on top. A BriskHeat VT10000 vacuum table with additional top heat is used to process the materials. Vacuum from the built-in pump applies the force needed to debulk the composite material as it molds around the back of the bricks. Heat applied uniformly from the top and bottom of the table cures the composite material. The resulting product has the advantages of real brick but is lighter in weight and requires no mortar for installation.

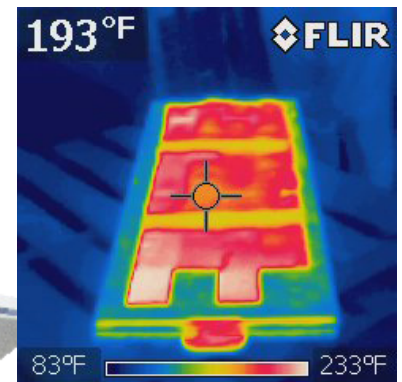
BriskHeat's VT10000 Vacuum/Debulking table is capable of processing RBP panels in batches for fast production. Cure cycles can be at constant temperatures or programmed for ramp/soak. It can process materials up to 400°F (204°C). Data logging with up to 16 sensors can be used to monitor temperatures at different bed locations.



Robert Belden prototyping a RBP panel on BriskHeat's VT10000.



Real Brick Panel with composite backing (photo courtesy of Belden Brick Company)



Thermal scan showing temperature uniformity of panel removed from vacuum table.



VT10000 Vacuum Table

Industries

Composite/Epoxies/Resin
Construction Material
Consumer/Residential
Manufacturing

Types of Users

Industrial Engineers
Production Personnel
Manufacturing Engineers
Composite Repair Technicians