
MASONRY VENEER UNIT COMPARISON

There are many types of masonry materials that can be made into masonry units and laid up in walls. These include natural stone, fired clay brick, concrete masonry units, and autoclaved silica lime bricks. Each of these materials has its unique properties, which will affect the finished appearance of the buildings on which they are used. These properties include strength, freeze-thaw resistance, color-fastness, resistance to water penetration, and resistance to staining. Each of these materials are manufactured to ASTM standards that establish strength and other requirements necessary to meet the minimum requirements for durability and other factors specific to that product that are required to give adequate serviceability. The paragraphs below compare these and other properties that may affect the finished appearance of a masonry product.

Natural Stone

Natural stone is limited to what can be economically quarried and shipped to the project. Its qualities depend entirely on the natural deposition and geologic forces that formed the deposits. In good quarries and with responsible quarrying techniques, there will be consistency in properties and appearance of the stone. But there will also be many variations in color, texture, strength, and porosity which must be considered by the design professional.

Fired Clay Brick

Genuine Fired Clay brick has been used for thousands of years. Properly fired clay masonry is among the most durable and color-fast cladding materials available. A good bricklayer can build clay brick into

Concrete Masonry Units

Concrete masonry units can be used both for masonry veneers and for total masonry construction as loadbearing or non-loadbearing walls. Concrete masonry veneers and single-wythe concrete masonry walls are normally exposed to view either inside or out, and may also be exposed to weather. Manufacturers of these quality architectural units should always use quality integral water repellents, such as W R Grace Dry Block in the concrete used to make the units. When Dry Block is used in proper dosage in the units and in the mortar, your masonry contractor can build walls that are superbly resistant to water penetration, water uptake, and the staining that often happens with lesser products.

Color is determined by the aggregates and pigments in the cement. Quality manufacturers produce units that are color-fast, but some fading may occur in some pigments, especially dark reds.

Autoclaved Sand-Lime Masonry Units

The process to make these units was developed in the 1920's. The masonry units are made with sand, lime, and other aggregates pressed into molds. These soft units are cured in pressurized steam autoclaves, where the sand and lime react to form a hard concrete. The finished strengths required to make sand-lime units durable is considerably harder than is required for either clay brick or concrete masonry. The autoclave process uses considerable energy, and the cost of operating these pressure vessels can significantly increase the cost of the masonry units compared to concrete masonry.

The main advantage of sand-lime brick and masonry units is their low shrinkage. The main weakness is the inability to include integral water resistant additives in the units. This can result in staining from water leaks and migration. For that reason, some manufacturers may specify that the units not be laid in ground contact or otherwise restrict their use. They may also be subject to staining from rainwater on the surface, or from water that leaks into the cavity behind the veneer.