

TECH

Roofing products R&D

The market volumes for roofing products are vast as one considers how many dwellings there are in the world today. The dominant products used in this large industry including hot applied tar, rolled membranes and asphalt shingles, share a common feature, besides being an evil black in color. Not only are these petroleum-derived roofs the worst possible color from a solar reflectivity perspective, they are largely non-renewable, highly combustible, ecologically unsustainable and generally do not last more than a few years in service. Stone or mineral-based roofing products (slate, concrete and tile) last longer and don't burn but are more costly to manufacture, distribute, install and maintain. Wood roofing such as cedar shingles and shakes are popular in some markets but, like the petroleum products, do not last a long time and are highly combustible. The popular tar and gravel roof systems which are a peculiar hybrid of petroleum and minerals, use the gravel minerals on top to protect the petroleum underneath from the elements, while being in the middle of the fire rating scale. Various metal and plastic roofing systems are also in use. Each of these have their advantages and drawbacks, while none have become dominant in the marketplace.

Castagra has a better approach to defining what a roofing product should be, and has come up with a great solution. Gypsum, being the lowest cost mineral on the planet used to make building materials, is also a water-rich hydrate and white in color. Combining a large amount of gypsum with a relatively small amount of suitable agriculturally produced natural oils, fibers, binders and other agents, in Castagra's proprietary manner, provides roofing materials that include the best features of the products currently in widespread use. The gypsum-based



products are naturally light in color (although they can be made darker where desired), fire resistant and long lasting (like the other mineral-based roofing products), aesthetically pleasing (like the wood roofing and some of the slate, tile and other systems on the market), easy to manufacture, distribute, install, maintain and are ecologically sustainable. Last, but not least, is these Castagra products have as much flexibility as do the petroleum products, both in terms of the ability for the various products to be made rigid or bendable (and roll-able) and in the number of ways they can be used, such as curing liquid systems, rolled roofing membranes, shingles, shakes and tiles.

Putting it simply, Castagra has a way to change the roofing world to make it a better place.

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