TECHNICAL PUBLICATION
ROOF TILE

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TODAY'S ROOF TILE

Roof tile manufactured and installed today is available in several shapes and a variety of colors. The primary types of roof tile are concrete and clay, and the most popular shapes are flat tile or "S" tile. There are natural colors, color-through products (the color is mixed with concrete for a color throughout the tile) and finishes with a high lustrous finish.

Florida is the home of the two major concrete roof tile manufacturers, as compared to clay tile that is imported from the Midwest and abroad. Products are shipped primarily through distributors, although some manufacturers ship direct.

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ROOF TILE TYPES

The most readily installed roof tile is manufactured from concrete or clay. The average weight of a single tile is approximately nine pounds, requiring a good sound roof deck and structural support system on which the roof tile is installed. Special roof tile accessories are produced to be installed at specific areas such as hip and ridge applications. Installing the correct tile accessories complete a tile application and proves to be aesthetically pleasing.

The flat or "S" tile is more in demand and is installed on numerous homes and buildings in Florida.

The compressive strength and finish of concrete tile is relevant to the waterproofing capacity of the product. Clay tile is an excellent waterproofing product and has been on the marketplace longer. Costs of the installed product are different, too. Clay roof tile is far more expensive than concrete roof tile.

INSTALLATION

There are three (3) basic installation methods that are implemented in today's market: mud on (mortar set), adhesive (form) set, or mechanically fastened. Stringent guidelines are imposed by codes for each installation. Procedures at eaves are much different than in the field of the roof area. Special treatment is required at hips, ridge and rake details.

Roof slopes play a major role in the installation requirements. Certain slopes require mechanical fastening in addition to a mortar set application. However, more often than not, installers lack expertise in this particular area. Mechanically fastened roof system applications require every tile to be fastened as well as accessory tile and more stringent procedures at eave details.

Underlayment (felts under the roof tile) applications vary depending on the type of roof tile installed, the method selected and the slope of the roof design. Lower roof slopes require felts to be mechanically secured and installed with hot asphalt. This technique literally is the waterproofing element of the roof tile system and the roof tile becomes an aesthetic issue. Roof slopes with a greater degree require a mechanically fastened felt with no hot asphalt.

The theory is that the water has a less chance of backing up under the roof tile due to the roof slope. In addition, these applications are for roof tile that is considered the waterproofing element, not the underlayment below the tile.

Roof tile generally installed as a mortar set installation is a much less expensive product as compared to a roof tile designed to be the waterproofing element. Mortar set installations have been utilized for decades. Mechanically fastened procedures penetrate the underlying felt, however, the tile is manufactured to resist water.

IMPORTANCE OF DETAIL

Roof tile problems usually are attributed to installation methods, particularly at detail areas such as penetrations and perimeters of roof areas.

Industry standards and manufacturer requirements clearly dictate the correct flashing procedures to be followed. These procedures are dependent on the roof tile type, installation required and degree of roof slope. For example, the finished flashing of a typical soil stack pipe is different with a mortar set application as compared to a mechanically fastened application. The installer must be thoroughly trained and understand the entire installation procedure with each specific system.

Most roof tile problems surface at detail areas such as valleys, eaves, soil stack pipes and vents. These areas must be properly detailed by the specifier clearly instructing the installer in every area. On some projects detail areas can be re-worked to extend the lift of the entire roof tile system.

AESTHETIC VALUE

A properly installed roof tile system certainly will compliment any building. The tile roof completes the entire look of the property for a very aesthetically pleasing project. In addition, the property value is increased and longevity of a tile roof far exceeds other roofing products.

A properly installed tile roof will look sound and with proper finishing of details highly compliment the entire roof area.

Simply put – a tile roof looks good.

THE INSTALLER

There is an enormous amount of knowledge and detail that an installer is responsible for. On a regular basis, manufacturers and code requirements are updated to comply with code changes, specifically wind uplift parameters. Fastener types, quantity, and fastener patterns are a major issue with a mechanically fastened tile roof system. For example, wind uplift is greater at eaves and perimeter roof areas as compared to the field of the roof.

Details, details, details… are the key to a watertight roof tile installation. Industry standards, manufacturer's and code officials publish criteria for installation procedures. Details change in application methods with a mortar set versus a mechanically fastened system. The installer must know the difference and apply his knowledge. Details are just as important as the field tile and must not be overlooked.

The installer is a key player in a tile roof application. There is not much equipment required to install roof tile, which opens up the market to numerous installers. It is recommended to thoroughly check your installer for adequate insurance protections, previously completed projects and perhaps a project in progress. His knowledge will dictate the integrity of the roof tile system.

SPECIFICATIONS

Manufacturers produce generic specifications. These type of specifications do not meet specific requirements for each individual project such as architectural metal flashing design, mechanical penetrations, etc. Existing conditions relating to roof decks and numerous other considerations must be taken into account. A thorough and complete specification and detailed drawings is a must for a complete roofing project. This concept will address all issues relating to the roof tile system, encompass all guarantee issues, and define all related items applicable to roofing and sheet metal.

Technical data for the roof system and related sheet metal items are clearly defined in the specifications. All items must conform to local codes, manufacturer's requirements and industry standards. Detail drawings clearly indicate sizes, configurations, fastening patterns, etc., for the roofing and sheet metal details. Specifications and detail drawings eliminate all guesswork and inflated pricing.

SUMMARY

Tile roof systems are of great value for every property, enhance the value and compliment the building design. Roof tile has a longevity that far exceeds typical asphalt shingles. Concrete or clay tile will not rot or burn so the remaining factor is design and installation techniques. Details, details, details… are of major importance to a properly functioning roof system and must be installed as specified. Most concrete and clay roof tile is guaranteed for fifty years. There is great importance of other products that become a part of the tile roof system.

A qualified design professional should be engaged to develop specifications and detail drawings.

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