



# Technical Bulletin #3

## TILE ROOF UNDERLAYMENT REQUIREMENTS

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The underlayment installed beneath a tile roof is a component of the roof system that serves primarily as a weather guard prior to the tile installation and a backup layer during severe weather conditions. A properly installed tile roof will itself serve as an effective water shedding system in the vast majority of situations but it is usually considered good practice to pay attention to the integrity of the underlayment system in the event of wind driven rain or broken tile.

While a number of different products and combinations of products may be used as tile underlayment, there are minimum requirements that have been established either by the governing building codes or as industry standards. In most areas, the minimum requirement for tile underlayment is a single layer of Type II asphalt based roofing felt manufactured in accordance with ASTM D – 226 or ASTM D4869, Type IV. Typically referred to as 30 # or Type 30\*, it is important that the material be identified with the ASTM rating since there are utility grade products available that have not exhibited the ability to consistently provide adequate performance as a single layer underlayment.

Some areas, such as South Florida require, as a minimum, a single layer of asphalt coated base sheet manufactured in accordance with ASTM D- 2626. Typically referred to as 40# or 43#\*\*, these felts usually are rolled with sand, powder or mica on the surface to prevent self-adhesion during storage.

When installed as a single layer, both felts usually require a minimum headlap of 2 inches and a minimum endlap of 6 inches although increased headlaps may offer better resistance to wind-driven rain prior to tile installation. The felts must be applied in such a manner as to avoid punctures, tears or cuts. Any such damage must be repaired prior to tile installation.

Modified bitumen may be used as a tile underlayment although caution should be taken to avoid scuffing damage in warm weather. Tile stacks left in contact with some modified sheets may create indentations or tears that should be addressed prior to tile installation.

A new generation of underlayments is entering the industry in the form of non-asphaltic based materials that have generated the development of new acceptance criteria at the building code level. Materials such as polypropylene or other synthetics boast greater durability, UV resistance and coverage.

Sealed underlayments may be used with tile roofs although it is critical that adequate attic ventilation be installed to avoid condensation that could damage the roof system.

\* 30# is technically classified as Type II asphalt-saturated felt, commonly called No. 30 asphalt felt. The ASTM D-226 requires that it be made with a mat weighing 10 lb. per 100 square feet with 15 lb. of asphalt saturant. The net mass of the saturated sheet is 26 lb. per 100 square feet.

\*\* The 40 lb. product is an asphalt-coated base sheet made from a Type I base felt weighing 5.2 lb. per 100 square feet and 7.2 lb. of asphalt saturant. It is then coated with 3.5 lb. of asphalt on each side, resulting in total asphalt content of 14.2 lb. per square. The coated sheet then receives a mineral stabilizer and surfacing. The net mass is 37 lb. per 100 square feet.