



TO; Florida Team

July 8, 2014

From: Rick Olson, President

RE: Clarification of Tables in FRSA/TRI 5th Edition for training presentations.

As part of our training efforts in Florida, we need to make sure that we are all on the same page when it comes to the tables found in the 5th Edition manual. Here is a brief summary that will hopefully allow us to all be one voice. The tables in the manual have specific functions and one must be careful to not misread too much information into each table.

Overview- As the TRI we developed the FRSA/TRI manual to be inclusive of wind design information to better understand the forces our tiles will see at various wind speeds. In the actual wind design codes, there are forces the roofing envelope will see that we have tried to properly identify through engineering and testing in a series of tables included in the our manual.

As the building envelope there will be internal forces on the building and external forces from the wind that the roof envelope will need to compensate for as specific components within a system.

Internal forces – The building codes prescribe the methods for determining attachment of the roof sheathing to meet most of this force (psf). In addition, there are areas around the sheathing joints, penetrations and ventilation access that will pressurize the area below the underlayment and will result in an additional force (psf) that the underlayment will need to overcome to stay on the roof. This force is in addition to the roof sheathing attachment.

Table 1A -The TRI developed table 1A with Ron Ogawa, P.E. to identify this additional force that the underlayment will see in Zone 3 (worst case). The underlayment manufacturer will need to review and address proper installation fastening recommendations to meet these forces (psf). While Table 1A is labeled *Underlayment Table For Foam Adhesive and Mortar Set Systems and Hip and Ridge Design*, it really defines the values that all of the underlayments will need to meet. With the entry of new self adhering underlayments and synthetic

The original creation of the table was to insure that all of the underlayment forces were met for the foam and mortar systems used in these areas of the roof, since the bonding of the adhesive to the underlayment is critical in these systems. This would allow the adhesive and mortar applications to only have to meet the additional uplift of the tile in the system.



Tables in series 2 – These tables were developed by the TRI, via Ron Ogawa, P.E. for fastening of our tiles to meet the required wind uplift on the tile as a component. These tables presume that the forces in table 1A have been met by the fastening, attachment of the underlayment.

Table-1 -In 2000 the TRI reviewed the current practice for underlayment attachment that indicated the 30/90 hot mop system was the predominant method for tile installations. In addition, the use of foam adhesives was the predominant method of tile installations for the lower slope applications. The TRI created table 1A to create a special recognition of just the 30/90 hot mop system. Polyfoam Products had Gary Walker P.E. perform engineering analysis on this particular system utilizing specific fastening patterns for a 30/90 hot mop system only. This table does not cover the use of any other system. The underlayment manufacturer of other products would need to provide specific fastening recommendations to meet the uplift values found in codes.

If there are any additional questions, please feel free to contact me. We will work this information into a technical brief that we can use to help work with local design or building officials where needed.

This information has been part of the code and process for years, so we hopefully can help clarify the approach without making this seem like a complex or pre-engineered roof system.

Sincerely,
Rick Olson
President