10 Reasons not to use Modified Bitumen

as a Waterproofing Substrate For Outdoor Thinset Tile Applications

1) **Incompatibility**: Most tile setting materials are not compatible with petroleum based bitumen and visa versa. ***Will the thinset manufacturer guarantee their product over Modified Bitumen?***

2) **Soft Support**: Bitumen tends to "flow" in warm conditions. This can lead to reduced support of the thinset mortar resulting in creep at the grout joints & tile breakage. ***Does the Modified Bitumen manufacturer supply a Robinson Test for a thinset application?***

Asphalt Effluence

3) **Effluence**: Water infiltration at compromised grout lines or broken tiles can cause efflorescence and latex leaching to ooze out. The heated tile can act as a poultice and draw the softened bitumen upwards.

4) **Uneven Substrate**: The height of a 138 mil seam can cause any infiltrated water to pond leading to effluence, freeze thaw issues and installation challenges with a flat surface.

5) **Compromised Tile Adhesion at Modified Bitumen Seams**: Seams are normally 138 mil high, 2"-6" wide, 36'-60" o.c. with two layers offset. Thinset mortar beds are normally ¼" (6.25mm/250 mils) thick leaving only 1/8" (3.12mm/112 mils) mortar coverage at the seams of the membrane.

6) **Clearance at Door Threshold:** To provide a solid foundation for the application of outdoor tile over Modified Bitumen membranes, roofing and tile associations often recommend the use of a 1-1/4" (32mm) mortar bed which will add 1" (25mm) to the overall assembly height. ***Is there enough clearance to meet codes or best practice guides?***

7) **Application:** Modified bitumens, especially on residential tile projects, can be installed by *untrained* general or tile tradesman.

8) **Suitability of Product**: High PH levels, thermal cycling, extreme temperature ranges, product compatibility, structural deflection & the fragility of the tile overlay can lead to a short life span for the outdoor tile assemblies. ***Will the Modified Bitumen manufacturer provide a warranty for this type of application?***

9) **Approvals**: *The International Code Council* (ICC) & *The National Building Code of Canada* (NBC) have set standards for roofing and waterproofing membranes. ANSI A118.10 evaluates waterproof membranes for thin-set ceramic tile and dimension stone installations. ASTM C-627 tests the service use of a full assembly including the waterproof membrane. ***Can the Modified Bitumen manufacturer supply these approvals?***

10) **Assurances**: The membrane manufacturer *should have a full set of tested assemblies* complete with detail drawings, specifications, material approvals and a letter stating they warranty the use of their product in an exterior thin-set mortar tile project over habitable space.

A Brief Explanation of Modified Bitumen

Modified Bituminous (Mod Bits) refers to asphalt base membranes traditionally modified with either Atactic Polypropylene (APP) which gives it some plastic properties, or with Styrene Butadiene Styrene (SBS) which is a rubber additive. APP Modified Bitumens are torch applied. SBS based products can be torched applied, asphalt applied or cold applied (Peel & Stick).

Modified Bitumen used as a waterproofing membrane would normally be installed in two layers (2 ply) with overlapped seems varying from 2" (50mm) to 6" (150mm) wide. The roll sizes can vary from 36" (91cm) to 60" (152cm) wide with an overall thickness of 3.5mm (138 mils). The elasticity, flexibility, self healing, and ease of application characteristics are advantageous for a roofing membrane but can be a hindrance for thin set tile applications for the reasons explained on the previous page.