

## **Nailing Patterns for Unicrete Concrete Roof Tile in Calgary**

In Calgary for typical residential and small multistory buildings, the CAN/CSA-A220.1-M91 fastening standard is found on page 60 in Table 11.1 “Fastening Required for Normal Weight Tiles Standard Conditions”.

To summarize this table:

- Between slopes of 4/12 and 12/12, the first two rows - at the eaves; in from all gables; and on either side of all hips and ridges - shall be nailed OR clipped.
- Between the slopes of 4/12 and 7/12 every THIRD row of the field tile shall then be nailed OR clipped.
- Between the slopes of 7/12 and 12/12 every SECOND row of the field tile shall then be nailed OR clipped.
- Above 12/12 EVERY tile shall be nailed OR clipped.
- All lightweight tiles shall be nailed OR clipped

In Calgary the only time Table 11.3 found on page 61 CAN/CSA-A220.1, “Fastening Required for Normal Weight Tiles High Wind Areas” would be used is when the conditions stated in clause 11.2.2.4 “High Wind Areas” on page 60 apply. The definition for “High Wind” is here given as **.8** or over.

To assess this:

- Go to Appendix C in the 1997 ABC page 571, the Calgary “1/100kPa Hourly Wind Pressures” chart gives a reading of **.54**; this is then multiplied by the Exposure Factor found in Table 4.1.8.1 on page 164 of the 1997 ABC. In Calgary, the .8 number is not reached until a height of between **64 and 85 meters**. This gives a multiplication factor of **1.5** and results in a total number of: **54 x 1.5 = .81**

For lightweight roof tiles, Unicrete recommends that the majority of the tiles be nailed under normal conditions, as it is unrealistic in the field to obtain 100% nailing success.

High wind treatment would be to nail AND clip the first THREE rows at eaves, gables, and ridges and hips, and to nail AND clip field tile in the same pattern as for normal conditions. Lightweight tiles are to be nailed AND clipped.

For further information on Unicrete concrete tile roofs please contact the Unicrete office.

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