

## THE USE OF UNDERLAYMENT WITH ASPHALT SHINGLES

There are many reasons why the use of an underlayment prior to applying asphalt shingles makes good roofing sense.

- Underlayments protect the wooden deck from moisture penetration temporarily until the shingles are applied, thus greatly reducing problems that could arise when shingles are installed directly on a wet surface.
- Many asphalt shingle manufacturers specify the use of an underlayment over a wood roof deck to validate their warranties.
- An underlayment should be used beneath asphalt shingles, especially on roofs with a slope less than 8:12.
- The use of underlayment is typically a requirement for Class A fire resistance.
- Installing an underlayment helps to minimize «picture framing», i.e. the visible outline of deck panels caused by irregularities in roof decking thickness.
- The water resistance of an underlayment provides secondary protection by helping shield the deck from wind-driven rain.
- Underlayments also offer protection to the shingles from the resins that can be released by the wood board decking.
- Underlayment material should meet at least one of the following industry standards:
  - a) CSA 123.3-M - Asphalt Saturated Organic Roofing Felt;
  - b) ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing;
  - c) CAN 2-51.32 – Sheathing, Membrane, Breather Type Paper;
  - d) ASTM D 4869 - Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing;
  - e) ASTM D6757 – Standard Specification for Underlayment Felt Containing Inorganic Fibers Used In Steep-Slope Roofing;
  - f) CSA A123.22 – Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection. (Refer to CASMA [Technical Bulletin no. 10](#));

*For more information on this subject or other asphalt shingle technical issues, you may contact CASMA by e-mail at [casma@casma.ca](mailto:casma@casma.ca), or visit our website: [www.casma.ca](http://www.casma.ca). The information contained in this bulletin is for general education and is not intended to replace advice from a qualified contractor or direction on usage/installation from the manufacturer. Consumers should be aware of the safety hazards associated with work on roofs and, before doing so themselves, should consider following CASMA's advice of using qualified contractors. This bulletin may be reproduced with permission on condition that it be reproduced in whole, unedited, with attribution of copyright to CASMA.*

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- g) ASTM D 1970 - Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection. (Refer to CASMA [Technical Bulletin no. 10](#)).

The proper application techniques recommended by the manufacturers should be followed to ensure optimum performance of the underlayment and overlying shingles.

With recent advancements in construction materials and manufacturing processes, certain manufacturers are producing synthetic underlayment products. Synthetic underlayments are generally a suitable alternative to the proven asphalt saturated felt. There is no CSA standard for synthetic underlayments, but they should be at least as strong as the asphalt saturated felt.

Synthetic underlayments\* are installed in a similar fashion as asphalt saturated felts; they are temporarily set into place with fasteners prior to subsequent shingle application. Some synthetic membranes may need to be installed with larger, approximately 1 inch (25 mm) diameter metal/plastic cap nails. As with felt underlayment products, sufficient side and end laps must be provided. Although many synthetic membranes are "breathable", some products may have very low vapor permeability, much like ice and water membranes. Thus, if a synthetic underlayment is used, it is recommended to check with the manufacturer and provide proper ventilation (check local building codes for compliance).

\*Check with shingle manufacturer regarding compatibility of a specific synthetic underlayment with their specific asphalt shingles.

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