



TECHNICAL BULLETIN

Asphalt-Saturated Organic Felt: Cedar Roof Underlayment, Interlayment and Eave Protection

Overview

This product is used as part of cedar roofing and wall systems. It enhances a system's water shedding ability and helps prevent the intrusion of wind driven rain, and snow which can cause ice damming. Sheathing and roofing systems are separate systems; both systems are required by building code and need to be properly designed and installed. Three main types of products need to be considered: 1) underlayment 2) interlayment and 3) eave protection.

Correct Specifications

The CSSB's **New Roof Construction Manual** shows how to install these products:

Underlayment/Interlayment

Many of the segments in the market use a general term when ordering or specifying a particular type of product. Asphalt-Saturated Organic Felt Underlayment ("felt") is most commonly stated as '30 pound felt'. This 'term' may allow for inappropriate or substandard products to be used; further definitions are necessary to follow current industry developments. Ensure the most detailed specifications are used to maintain the integrity of a project and compliance with local building codes.

The American Society for Testing Materials Standards ("ASTM") for Asphalt-Saturated Organic Felt Definitions:

ASTM D226 is the "Standard Specification for Asphalt-Saturated Organic Felt Used in Roofing and Waterproofing"

ASTM D4869 is the "Standard Specification for Asphalt-Saturated Organic Felt Underlayment Used in Steep Slope Roofing"

- 1) No. 30 felt is more of a name today than a weight reference.
- 2) The specification for jobs would be "**ASTM D226 Type II**" or "**ASTM D4869 Type IV**". Check www.astm.org for the most current information.

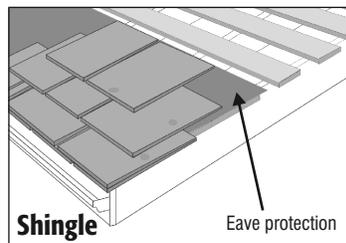
There are differences in the asphalt content and composition of the felt within ASTM Standards. It is important to check with local building code requirements when specifying the ASTM Classification as some codes require the use of a specific ASTM Classification for roof and sidewall application.

Manufacturers of these products still use various identifiers such as "No. 30 or Type 30" on the product identification bands. When the product meets ASTM standards the standard and classification will also be stated on the band. The CSSB recommends specifiers always state a **No. 30 ASTM D226 Type II** or **No. 30 ASTM D4869 Type IV** felt underlayment as stated in the CSSB's **New Roof Construction Manual** and the CSSB's **Exterior and Interior Wall Manual** rather than just "No. 30 or Type 30".

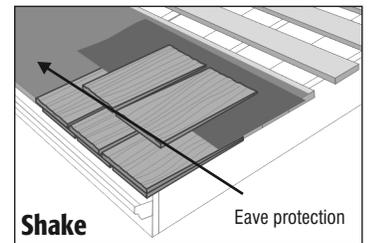
Self-Adhesive Eave Protection

Self-adhesive eave protection is a non-permeable type of asphalt material, sometimes used at the bottom of the roof near the gutter area. It is put in place to prevent water intrusion, originating from ice dams at the eaves, in areas where high snow load is common.

It may be used at the eaves and valleys in geographical areas prone to ice damming, on both cedar shake and cedar shingle roofs, when required by local building code. Always consult with Building Code Officials for specifics.



Shingle Underlayment



Shake Interlaid/Interwoven Felt



Caution Areas

- **DO NOT COVER THE ENTIRE ROOF DECK WITH NON-PERMEABLE UNDERLAYMENTS!** See the CSSB's **New Roof Construction Manual** for correct application methods.
- Current CSSB policy is to only apply this non-permeable eave protection at the eaves and valleys if required by local building code
- Interlay shakes with 18" wide No. 30 ASTM Standard felt. Never interlay shingles with felt (it is already a 3-ply system) UNLESS absolutely required by local building code
- Do not position the felt lower than double the exposure of the shake. If the felt does extend below this line it is commonly referred to as 'rot felting' since the felt is susceptible to deterioration from the sun's UV rays. Rot felting can also prevent proper drying of shakes and shingles, thus shortening their life.



No. 30 ASTM Felt



Self-adhesive eave protection (do not confuse with No. 30 ASTM felt)

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Frequently Asked Questions:

Current Industry Trends Vapor permeable banner wrap type products have made inroads in house design and construction in the recent past. Use of this type of product should only be considered if the local building official approves of this variation from the installation methods recommended by the CSSB. Also consider the data at

<http://bct.eco.umass.edu/publications/by-title/housewraps-felt-paper-and-weather-penetration-barriers/>

Many homes today are built more air tight, and this means that proper ventilation of the structure is even more crucial. The CSSB recommends venting of the attic area no less than 1:150, with compensation made for screens over vent apertures. In the case of a balanced system, 1 square foot per 300 square feet of floor area may be adequate ventilation. Check with the local building official and a building envelope specialist, regarding any modifications to, or the addition of a vapor barrier system.

Do I have to use a continuous ventilation product on my installation?

Not necessarily. The continuous ventilation product is an option, especially in high humidity areas. Consult the high-humidity area details (pg. 19) in the CSSB's **New Roof Construction Manual** for information about roof system ventilation options and applications.

Can I use a continuous ventilation product instead of felt?

Felt is a must in shake applications. A continuous ventilation product is a roof system ventilation option (especially in high humidity areas); it is not an underlayment. Consult the CSSB's **New Roof Construction Manual** for information about roofing application options. Remember: do not interlay shingles with felt unless required by local code.

Can I use a continuous ventilation product immediately on top of felt in a shake application?

If you elect to use a continuous ventilation product, in shake applications; it should be installed between the sheathing (deck) and the felt.

Although a solid deck is not commonly used in shingle applications some building codes require it. If it is required, the CSSB offers four options of application on page 19 of the CSSB's **New Roof Construction**.

If the use of continuous ventilation product is the chosen application method, the continuous ventilation product should be placed between the permeable felt underlayment and the shingles, if a solid deck is required.

Consult the CSSB's **New Roof Construction Manual** for information about roofing application options.

When I hear "30 pound felt" does it mean the same thing as "No. 30 felt"?

In the construction and roofing trades, it is common for people to use the terms interchangeably. Felt comes in many varieties. To meet the recommendations of the CSSB always ensure you also write in the correct ASTM Designation and classification in your detailed specification to guarantee that you are obtaining quality materials.

The information in this bulletin is not intended to supersede local building codes. Check with your local building official for final approval. The CSSB assumes no liability for any application non-conformance.

This bulletin only provides a short overview of this technical topic. For additional details consult: 1) CSSB's **New Roof Construction Manual** & 2) CSSB's **Exterior and Interior Wall Manual**; these are recommended reading materials.

For additional industry information:

Cedar Shake & Shingle Bureau	www.cedarbureau.org
American Forest and Paper Association	www.afandpa.org
American Society for Testing and Materials	www.astm.org
American Wood Council	www.awc.org
Canadian Wood Council	www.cwc.ca
Federation of Societies for Coatings Technology	www.paint.org
Forintek Canada	www.forintek.ca
International Staple, Nail & Tool Association	www.isanta.org
University of Massachusetts	www.umass.edu
USDA Forest Products Laboratory	www.fpl.fs.fed.us

Known as the recognized industry authority since 1915, the Cedar Shake and Shingle Bureau ("CSSB") is a successful, integrated and global trade association, offering a full range of services including technical assistance, building code updates, and weather resistant product details. Contact the CSSB for more information.

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