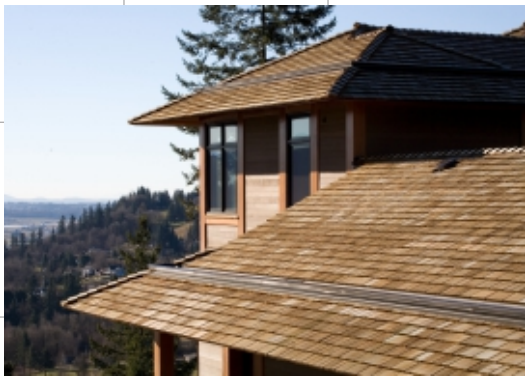




**Cedar Shake &  
Shingle Bureau**

# CEDAR ROOFING FACTS



THOUSANDS OF HOMEOWNERS HAVE ALREADY CHOSEN MOTHER NATURE'S  
FINEST ROOFING MATERIALS...HERE'S WHY.



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• ENVIRONMENTALLY FRIENDLY • WEATHER RESISTANT • REPAIRABLE

---

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The Cedar Shake & Shingle Bureau® ("CSSB") received numerous requests for a brochure that combined basic product, weather resistance and installation & repair methodology in one location. As a result of this feedback, key elements from various existing publications were combined and this publication is the result.

Please note that this publication only provides a basic overview of key concepts and techniques. It is not meant to supersede local building codes. Also, be sure to consult the CSSB for detailed instruction as well as your local roofing professional, building code official and building envelope specialist with related questions.

### **Photo Credits**

#### **Front cover images:**

*Top: Courtesy: Telemark Inc., Builder: Mario Novak,  
Architect: Bob Ortmann, Zwirko & Ortmann Architects, P.C.*

*Middle row: left, Courtesy: Ed Watkins  
right, Courtesy: R W Mulligan Co. Inc.*

*Bottom row: second from left, Photo Lynne Christensen*



# CEDAR SHAKE & SHINGLE BUREAU® HISTORY

On June 9, 1915, at a meeting of the Trustees of the West Coast Lumber Manufacturers Association, it was agreed to establish a branch of the association to serve those members who manufactured shingles. Our influence grew, and as we survived both the Great Depression and two World Wars, manufacturers continued their quality commitment. In 1963 the organization merged with the Handsplit Shake Bureau to become the Red Cedar Shingle & Handsplit Shake Bureau.

Manufacturers' product lines continued to broaden and, in 1988, the members changed the organization's name to the Cedar Shake & Shingle Bureau® ("CSSB"). In the late 1980s, mill quality control inspections were subcontracted to independent, third party quality control agencies. Today, the Cedar Shake & Shingle Bureau® represents over 200 member manufacturers, distributors, wholesalers, brokers, retailers, installers and other industry associates. It is known as *'the recognized authority since 1915.'*



1923 – Chief Inspector Fred Monte inspecting product.



"Home of the Wooden Soldiers", one of the first industrial talkies starring Charlie Murray and Lila Lee, two famous actors from the 1930s.



An early sales display.

Source (all photos): CSSB Archives.

## PRODUCT TYPES

### Make a Wise Cedar Roofing Product Choice: Quality Control Realities

#### CSSB MEMBER PRODUCTS:

- Undergo random, unannounced inspections conducted by an accredited third party inspection agency as well as separate inspections from the CSSB Cedar Quality Auditor
- Are supported by a knowledgeable District Manager team that offers free technical advice on CSSB Member-produced shakes & shingles
- Meet and conform to legal and ICC mandated grading rules



**3 main product types** (in total there are over 100 different products)



#### **Certi-Split® Shake**

(Handsplit and Resawn): Split on one face, sawn on the back, used for a more rustic look.

(Top quality grade = Premium Grade)



#### **Certi-Sawn® Shake**

(Tapersawn): Sawn on both sides, giving a tailored appearance with a heavier shadowline than a shingle.

(Top quality grade = Premium Grade)



#### **Certigrade® Shingle:**

Sawn on both sides, used for a tailored appearance.

(Top quality grade = Number 1 Grade)

### 2 main types of wood grain



#### **Vertical Grain (also known as Edge Grain):**

annual growth rings form 45-90 degree angle with product surface.



**Flat Grain:** annual growth rings form less than 45 degree angle with product surface. Up to 20% flat grain is permitted in each Number 1 Grade shake bundle.

No flat grain is allowed in Premium Grade shakes or Number 1 Grade shingles.

Grading rules and other detailed brochures are available from the CSSB.



## ENVIRONMENTALLY RESPONSIBLE: THE FACTS

CSSB Member cedar shake and shingle products are:

- Pollution minimizing
- Energy conserving
- Free insulator – naturally
- Renewable, recyclable and sustainable for future generations

### Keeping Forests as FORESTS

CANADA	Canadian Forestry Facts	US	US Forestry Facts
<b>22.1</b> BILLION	<ul style="list-style-type: none"> <li>• The forest industry contributed \$22.1 billion to nominal gross domestic product (GDP) in 2015.</li> <li>• Less than 0.3% of Canada's forests are harvested annually</li> <li>• Less than 0.02% of Canada's forests are deforested each year.</li> <li>• 100% of forests harvested on Canada's public land must be successfully regenerated.</li> <li>• As of December 2015, Canada had 166 million hectares of forests certified as being sustainably managed under one or more of three globally recognized certification systems.</li> <li>• Bioenergy accounts for 60% of the total energy used by the forest industry.</li> </ul>	<b>20%</b>	<ul style="list-style-type: none"> <li>• Today, the United States has 20 percent more trees than it did on the first Earth Day celebration more than 40 years ago.</li> <li>• For the past 100 years, total forest area has been stable and grew by 2 million acres from 2000 to 2005.</li> <li>• In the US, forests and forest products store enough carbon each year to offset approximately 10 percent of the nation's CO<sub>2</sub> emissions.</li> <li>• A single tree can absorb more than 10 pounds of CO<sub>2</sub> each year.</li> <li>• In the US, private, working forests support 2.5 million jobs, \$235 billion in annual sales, \$87 billion in payroll, \$4.4 billion in state income and severance taxes, and \$102 billion to the GDP.</li> </ul>
<b>100%</b>		<b>10%</b>	
<b>60%</b>		<b>2.5</b> MILLION	

Source: <http://www.nrcan.gc.ca/forests/measuring-reporting/key-forest-facts/17643>

Source: <http://www.afandpa.org/our-industry/fun-facts>



## Responsible and Sustainable Forestry Practices

### Salvage Logging

Salvage logging forms a good part of cedar shake and shingle fiber supply. The salvage logging process involves harvesting sections of logs that would otherwise be left on the forest floor as they are unusable for other forestry business operations. As cedar is naturally decay resistant, this salvage fiber is in pristine condition and allows the industry to make full use of a valuable natural resource.



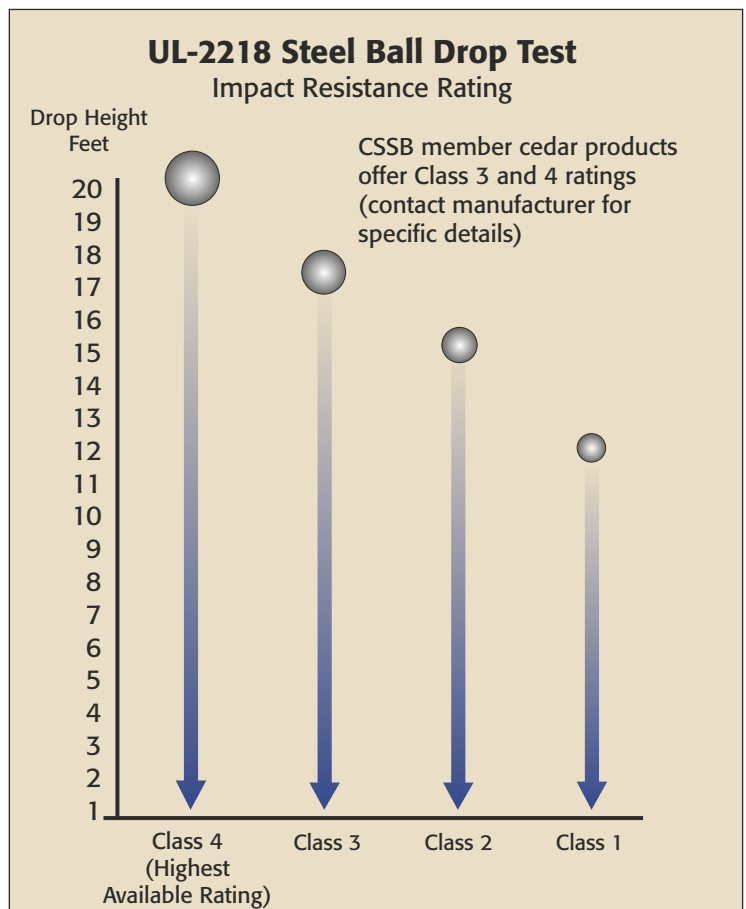
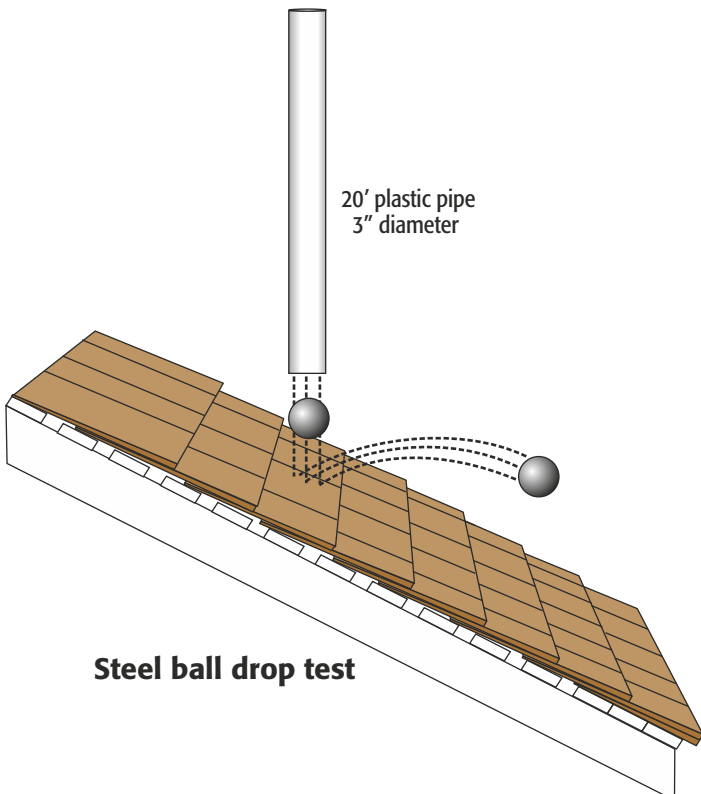
## IMPACT RESISTANCE: DEFINITION AND TESTING

Cedar roofing is very resistant to hail damage. Impact resistance testing shows minimal impact on CSSB member handsplit and resawn shakes, tapersawn shakes and shingles. Typical hail sizes are shown in the diagram to the right.

CSSB member shakes and shingles have withstood the impacts of 2" diameter steel balls when dropped from a 20 foot height as per UL-2218 test standards. UL-2218 is the standard impact resistance test used by all products in the roofing industry.



As a result, CSSB member manufacturers can offer Class 3 and Class 4 designations. Class 4 is the highest impact resistance rating one can obtain. Moreover, the impact resistance ratings in the UL-2218 test standard are the same for all products, regardless of type. Class 4 is Class 4, whether one is discussing cedar, asphalt, metal, tile or other roofing materials. The standards are the same. Even better, it's simple to replace a few shakes or shingles with no requirement for matching color lots or concern about chipping or peeling of surface coatings.



**Caution:** not all cedar products are alike, of the same quality standard, or hold the same test results. CSSB test results are only applicable to CSSB member Certi-label® products. Ask to be sure!

## WEATHERING EXAMPLES

### NORMAL WEATHERING

The average shake or shingle will weather to a gray color within 6 - 9 months. A certain amount of splitting and curling is normal for cedar shake and shingle products as they age. Some examples are shown below:



Photo courtesy of Haag Engineering Co.

Natural weathering split (note no new cedar color between cracks). Splits are a natural occurrence and no cause for alarm unless felt or the roof deck is exposed. Cedar shake roof systems are 3-ply systems with 2 layers of shakes and 1 layer of interlaid felt. Cedar shingle roofs are 3-ply systems with 3 layers of shingles.

Naturally weathered cedar roofs: gray color



Some curling and cupping may be seen



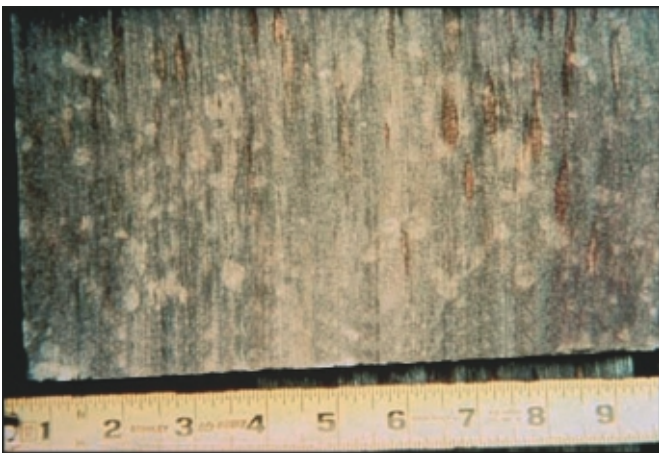
## PICTURES OF ACTUAL HAIL DAMAGE



a) Hail impact split

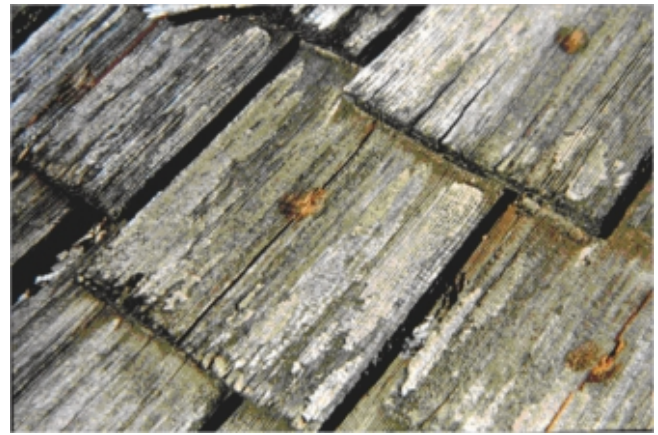


b) Weathering split and small hail impact marks



c) Many small hail impact marks, but no splits in shingle

## NON-HAILSTORM CAUSED DAMAGE



d) Intentional ballpeen hammer damage  
(note regular pattern)



e) Footfall split damage  
(note no denting and new cedar color)



f) Actual pressure washing damage  
(... yes, it really is!)

*Note the power of the pressure washing machine. This type of damage is typically caused by inexperienced personnel. Review the CSSB's care and maintenance details for more information.*

*Photos d) and e) courtesy of Haag Engineering Co.*



## WIND RESISTANCE: DEFINITION AND TESTING



Photo: Lynne Christensen

Cedar shake and shingle roofs have long been tested, and approved, as being highly wind resistant. As far back as 1952, the CSSB conducted tests at the University of Wichita. At that time, the strongest wind that could be artificially produced was generated by an airplane engine

reaching a wind speed of 136 mph. CSSB member products withstood that wind speed and passed the test. Category 3-5 hurricanes wreak havoc on even the strongest built communities. Through structural damage assessment, the insurance industry has recognized the need for better buildings and advocates building stronger, better constructed homes that go beyond basic building code requirements.

### Wind Resistance Test Results are Outstanding

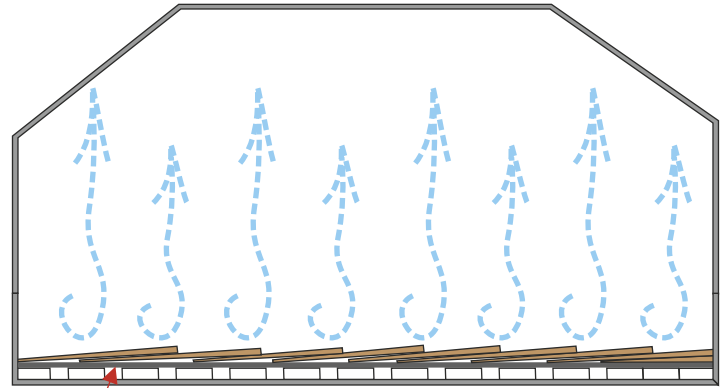
In 2004, CSSB member cedar shakes and shingles underwent the UL-1897 (fourth edition) "Uplift Test for Roof Covering Systems" with exemplary results of 90 PSF (173 MPH) for CSSB member shingles and 180 PSF (245 MPH) for CSSB member shakes.

Important note to above paragraph:

A subsequent report to the UL-1897 fourth edition "Uplift Test for Roof Covering Systems" by a Florida Registered Professional Engineer converted results, using no safety factors. Extrapolation calculations were performed for a specific house in the Dade County area of Florida using the analytical method for wind design of roof cladding set forth in Section 6 of ASCE-7-98 (American Society of Civil Engineers). For a full engineer's report contact the CSSB.

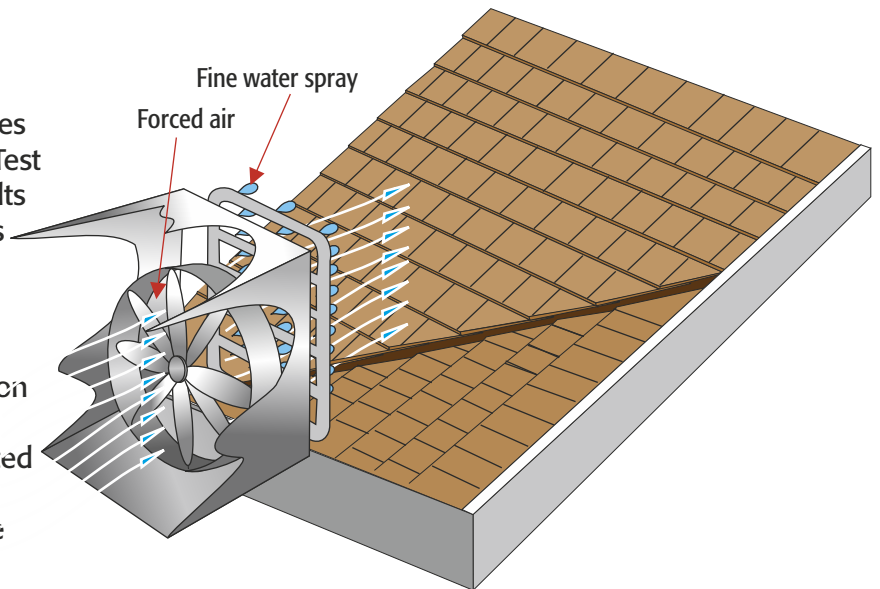


**Caution: not all cedar products are alike, of the same quality standard, or hold the same test results. CSSB test results are only applicable to CSSB member Certi-label® products. Ask to be sure!**



**UL-1897 Wind Uplift Test**

— Polyethylene sheet to prevent pressure loss between battens and shakes or shingles during wind uplift test.



**TAS 100-95 Uplift Test**

CSSB member products have met stringent Dade County, Florida requirements. Dade County, Florida, is considered to have the toughest wind resistance regulations in all of North America and roofing products are evaluated using TAS 100-95 Uplift Testing. Water is also added into this test's windstream to ensure the roof deck is free from leakage.

## FIRE RESISTANCE: DEFINITION AND TESTING



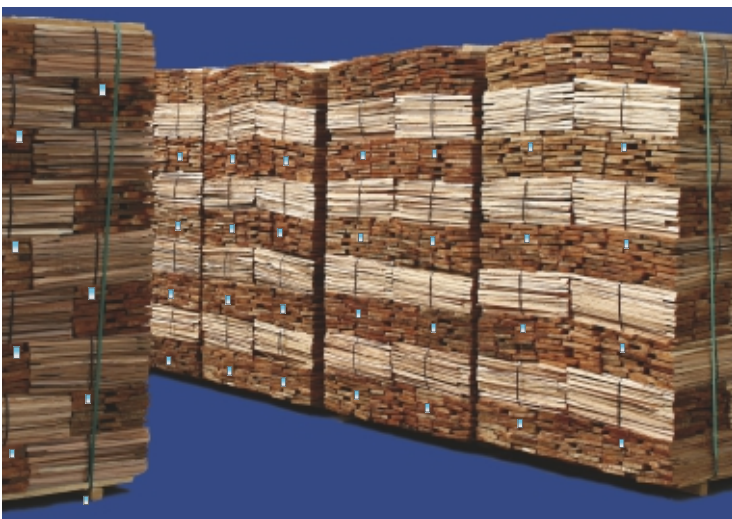
Photo Lynne Christensen

What is really important is how long the structure can ultimately resist fire. For roofs, there are Class A, Class B, Class C and unrated roofing systems. Cedar shake and shingle roofs exist in all these classes. These classes are the same for all roofing materials, including asphalt, metal and concrete tile. If you live in an area where the risk of fire is high, CSSB member pressure impregnated fire retardant treated cedar shakes and shingles provide an additional value added component to an already satisfying roofing material.

**Class A roofing systems** are intended for use on highly fire resistant buildings and are required on institutions such as hospitals or jails. Class A roofing systems include cedar roofing products manufactured by CSSB members.

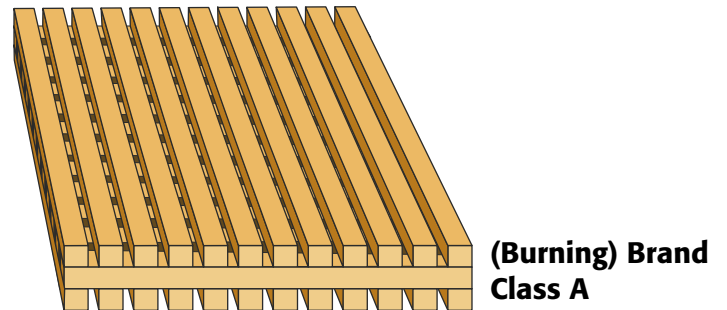
**Class B roofing systems** are required for use on apartment buildings, condominiums and commercial buildings, and are often recommended for use on dwellings in high fire hazard areas, such as wildland interface urban areas. Class B roofing systems include cedar roofing products manufactured by CSSB members.

**Class C roofing systems** are the most common ones specified for single family dwellings and duplexes when fire retardant roofing is desired. Class C roofing systems include cedar roofing products manufactured by CSSB members.

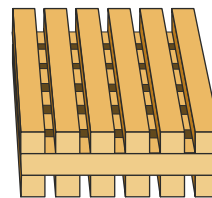


Bundles on pallets: each bundle is labeled

The drawings below show the burning brands made of wood constructed to exacting specifications.



(Burning) Brand Class A



(Burning) Brand Class B



(Burning) Brand Class C

(Burning Brands not shown actual size)

CSSB member treaters guarantee an ICC ES Evaluation Report number on the label placed on each bundle of pressure impregnated fire retardant treated shakes or shingles produced under the CSSB administered/branded program.



Caution: not all cedar products are alike, of the same quality standard, or hold the same test results. CSSB test results are only applicable to CSSB member Certi-label® products. Ask to be sure!



## FIRE RESISTANCE: DEFINITION AND TESTING, CONTINUED

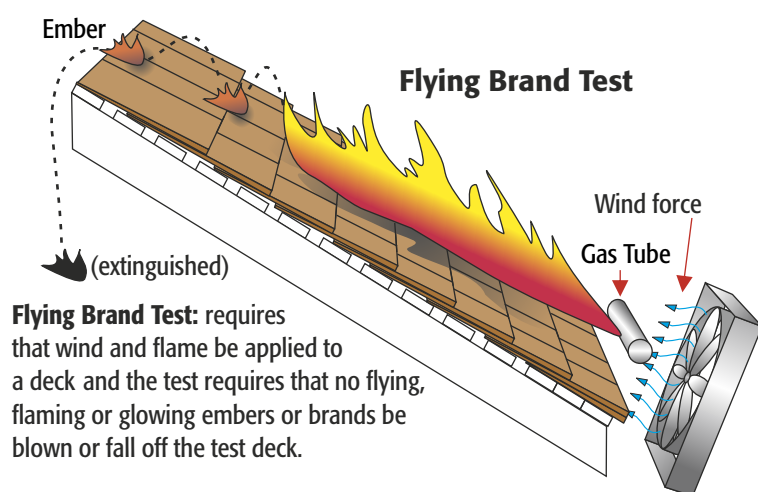
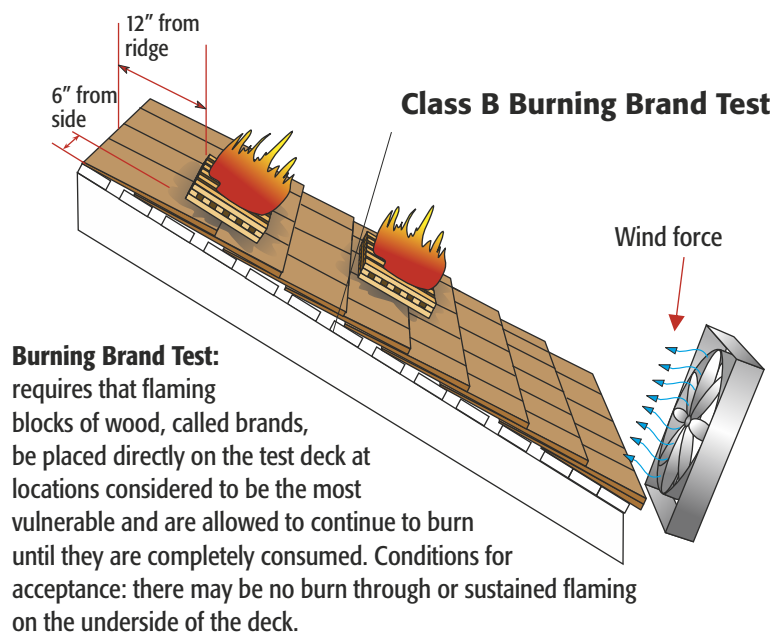
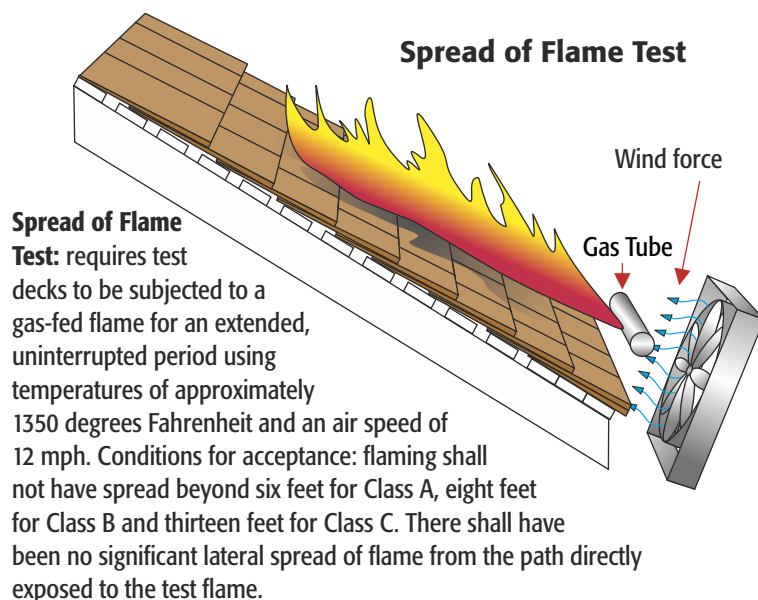
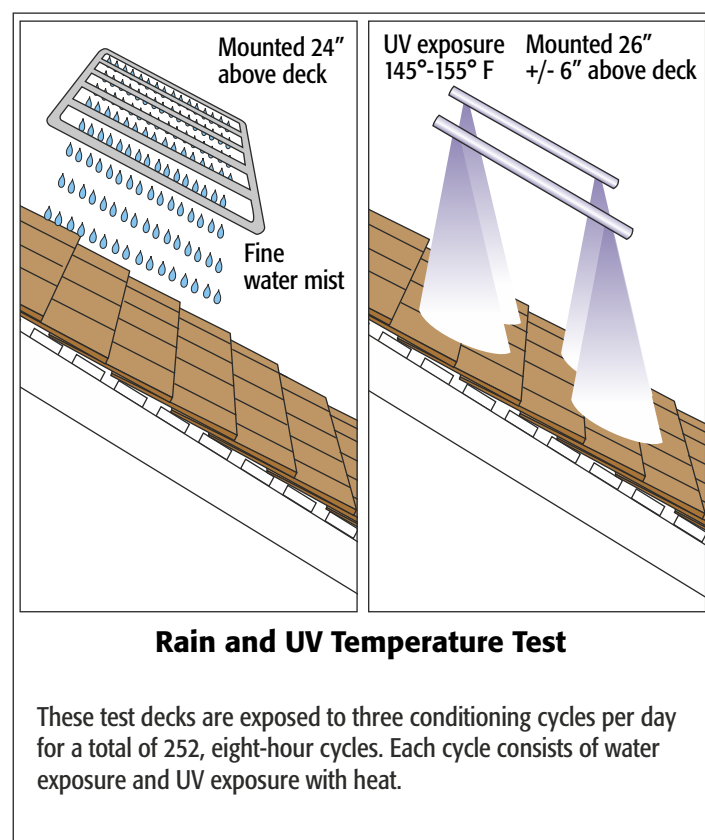
### Fire Resistance: Definition and Testing Continued

#### How is the treatment tested?

CSSB member pressure impregnated fire retardant treated cedar shakes and shingles provide fire protection locked into the roofing material, proven over and over in eight rigorous Underwriters Laboratories (Underwriters Laboratories, Inc. and Underwriters' Laboratories of Canada) designed tests:

1. Intermittent Flame Test without amended rain test
2. Spread of Flame Test without amended rain test
3. Burning Brand Test without amended rain test
4. Flying Brand Test without amended rain test
5. Intermittent Flame Test after amended rain test
6. Burning Brand Test after amended rain test
7. Flying Brand Test after amended rain test
8. Natural Weathering Test (weathering over time outside)

The Intermittent Flame, Burning Brand and Flying Brand Tests are redone after the natural weathering of 1, 2, 3, 5 and 10 years.



## INSTALLATION: QUICK FACTS

**These photos demonstrate correct installation of cedar shingles:**

Some practices to note:



Proper keyway width



Concealed fasteners



Offset joints



Quality product

---

**These photos demonstrate incorrect installation of cedar shingles:**

Some practices to avoid:



Knots



Exposed fastener



Narrow keyways



Uneven courses  
(on non-staggered butt roof)



Wide keyways



Exposed interlaid felt



### True Craftsmanship

Installing top quality cedar shakes and shingles requires top quality installation. Contact the CSSB for detailed specification and installation guides. It's very important to specify the correct type of fastener.



Source: CSSB Archives.

### Nails

Each Certi-label® shake or shingle shall be applied with two fasteners. Nails **must be** stainless steel **Type 316** in locations within fifteen (15) miles of salt water. For locations outside the salt water zone - nails **must be** stainless steel, **Type 304**, **Type 316**, or hot-dipped galvanized with a coating weight of ASTM A 153 Class D (1.0 oz/ft<sup>2</sup>). Stainless steel nails offer the highest degree of corrosion resistance. Some nail manufacturers offer nails specifically for wood shake or shingle roof application. Contact the nail manufacturer for further information to ensure the fasteners used comply with listed requirements and are correct for your application.



C & H Roofing Inc.

### Staples

The Cedar Shake & Shingle Bureau® prefers the use of nails, however if you choose to use staples they **must be** stainless steel **Type 316** in locations within fifteen (15) miles of salt water. For locations outside of the salt water zone stainless steel **Type 304** or **Type 316 must be** used. Each Certi-label® shake or shingle shall be applied with two (2) staples. Staples **must be** 16 gauge with crowns 7/16" minimum horizontal, maximum 3/4" horizontal to the Certi-label® shake or shingle butt.

### Location/Penetration

Fasteners, two (2) per shake or shingle, shall be applied approximately 3/4" from the edge and approximately 1 1/2" above the exposure line. Fasteners shall be long enough to penetrate into the sheathing at least 3/4" or all the way through. Minimum nail lengths are shown in the fastener chart (see next page). Nails and staples must be driven flush with the surface of the Certi-label® shake or shingle. Overdriving the fastener can split and/or distort the Certi-label® shake or shingle.

## FOCUS ON FASTENERS

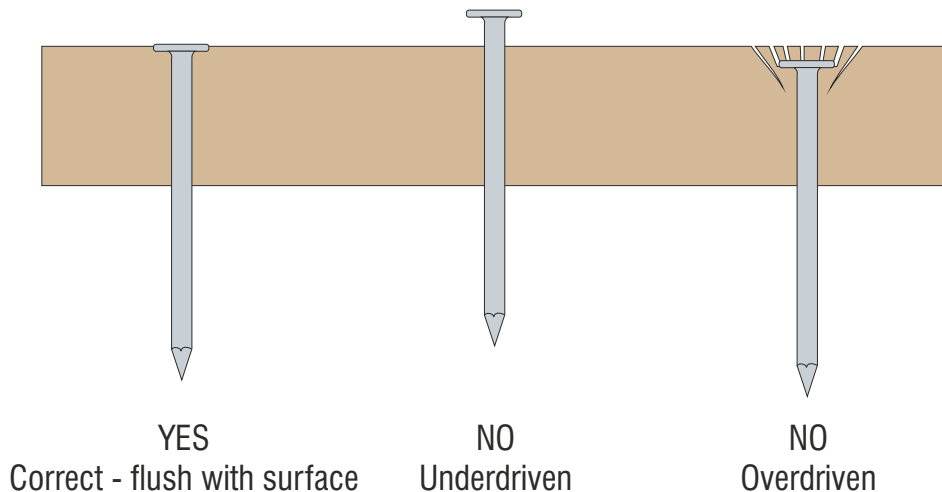


Courtesy: Western Wood Products  
Photo: John Spaulding

Fasteners	
Type of Certi-label® Shake or Shingle	Nail Type and Minimum Length
<b>Certi-Split® &amp; Certi-Sawn® Shakes</b>	<b>Type (in)</b>
18" Straight-Split	5d Box 1 3/4
18" and 24" Handsplit and Resawn	6d Box 2
24" Tapersplit	5d Box 1 3/4
18" and 24" Tapersawn	6d Box 2
<b>Certigrade® Shingles</b>	<b>Type (in)</b>
16" and 18" Shingles	3d Box 1 1/4
24" Shingles	4d Box 1 1/2

**Do not use electro galvanized (EG) fasteners.**

**Note:** Longer fasteners of the same quality may be required for nailing ridge product



### Important Notes:

Underdriving or overdriving any fastener will affect the integrity of the roofing system. Fasteners utilized must be specific for use with wood shakes and shingles to prevent splitting and other weakening factors. Do not use electro-galvanized (EG) fasteners. Ensure the fasteners used comply with listed requirements.

### Pressure Impregnated Treated Shakes and Shingles

Fasteners used with fire-retardant-treated (Certi-Guard®) and preservative-treated (Certi-Last®) shakes or shingles *must be* stainless steel **Type 316**. For specifics on installation, accessory building materials (flashing, etc), finishes and maintenance please contact the treatment company directly. [www.cedarbureau.org](http://www.cedarbureau.org)

*The information above is not intended to supersede local building codes.*

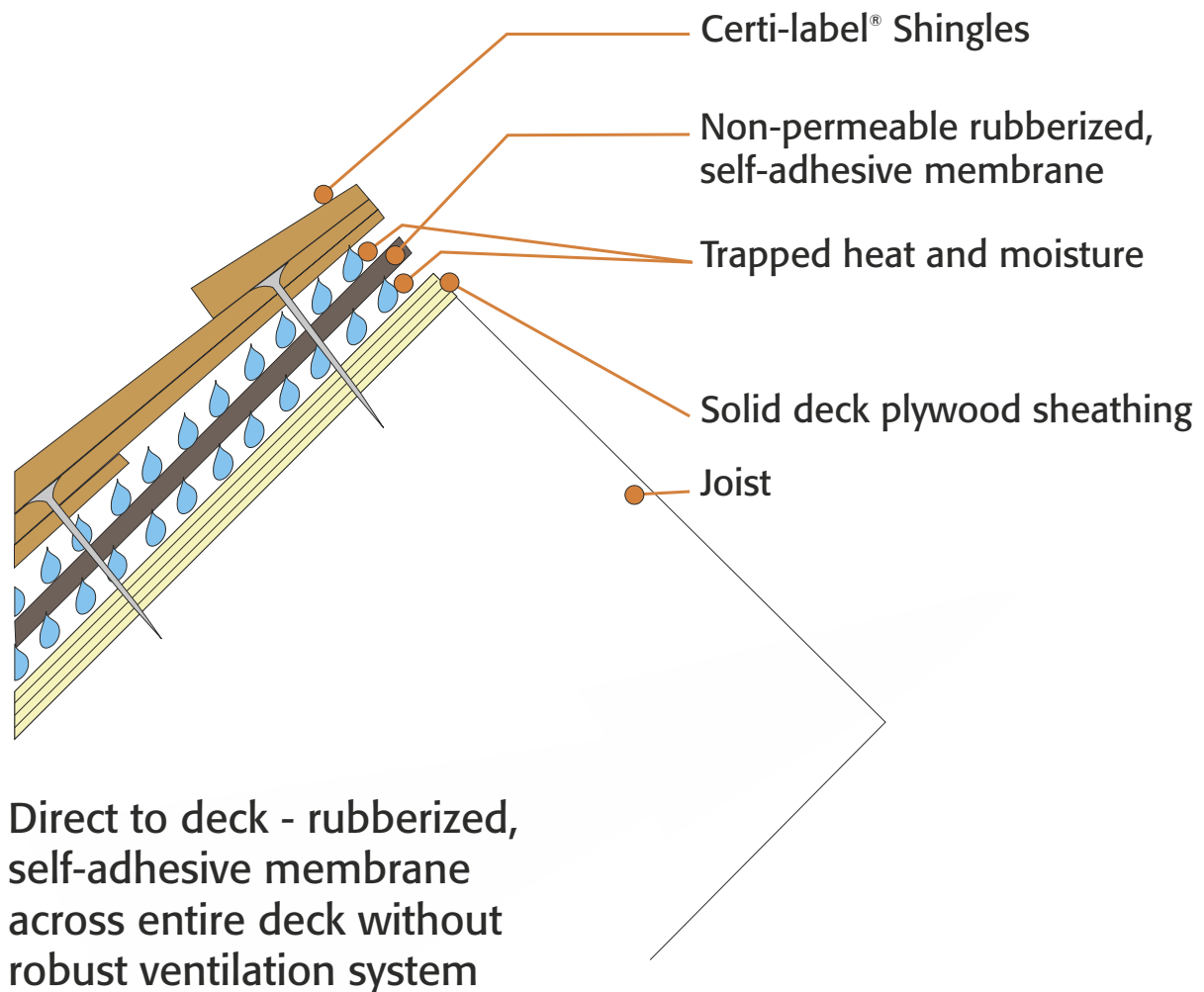


## FOCUS ON NON-PERMEABLE BARRIERS (including non-permeable underlayments)

Cedar Shake and Shingle Bureau® ("CSSB") Field Staff have observed numerous incidents of roof integrity issues when cedar shakes or shingles are installed over non-permeable barriers, including ice dam barrier underlayment, without incorporating a robust ventilation system (NOTE: Robust Ventilation System - Review Figure 3 & Figure 7 in the CSSB Roof Manual). The CSSB is currently preparing for an extensive one year actual weathering test, in two different climates and using many different ventilation scenarios, to measure ventilation on roofs installed with a non-permeable barrier over the entire deck. A variety of deck applications will be tested including decks with vertical spacers and horizontal nailers (furring strips) as well as a variety of continuous ventilation products.

The lifetime limited warranty administered by the CSSB on behalf of its manufacturing members does not currently allow a non-permeable barrier across the entire roof deck. Contact individual manufacturing members to see if they offer a different, in house limited warranty. For installation variations, including modification to the vapor barrier system, check with your local building code official and a building envelope specialist.

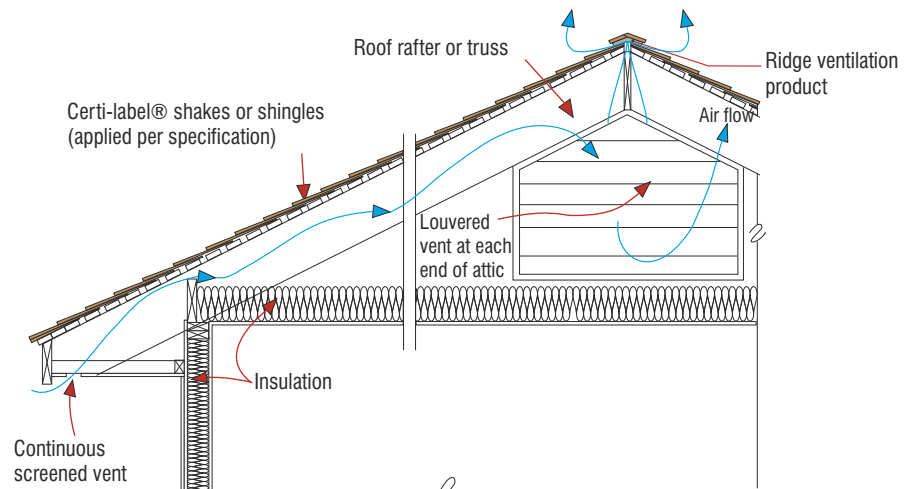
In addition, you must consult with the continuous ventilation product manufacturer for its own approved system(s), installation instructions and product performance warranty. Additionally, check with your local building code official for approval of the continuous ventilation product manufacturer's system(s).



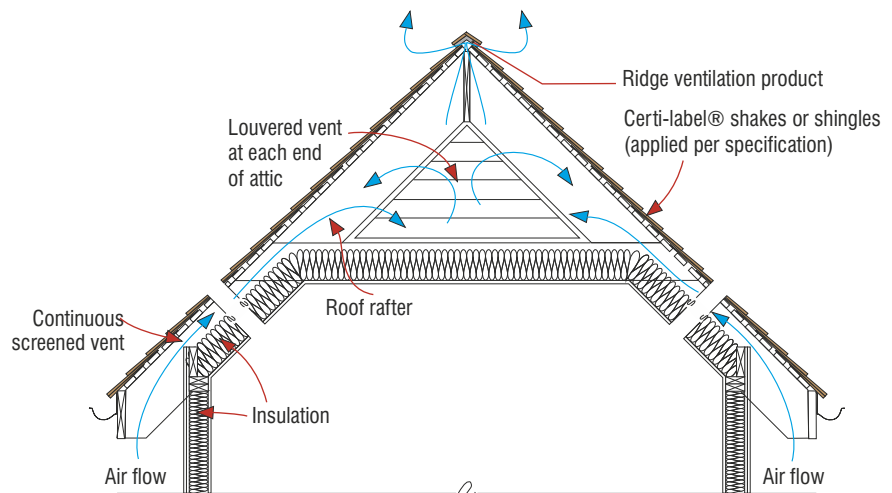
## Ventilation Guidelines

The importance of good attic ventilation beneath the roof cannot be overemphasized. Such movement of air will prevent or inhibit condensation of moisture on the undersurface of the Certi-label® shakes or shingles, or on the roof decks. Vents should be provided at the soffits (eaves) as well as at gable ends (screened to prevent ingress of insects), on roof by using attic roof ventilation or preferably the ridge lines with cross-ventilation desirable. A rule of thumb for adequate ventilation is that the ratio of total net free ventilation area to the area of the attic should be not less than 1:150, with compensation made for screens over vent apertures. In the case of a balanced system a 1 square foot per 300 square feet of floor area may be adequate ventilation. Check with your local building department. Attic fans may be beneficial by supplying additional movement of air in attic spaces. Several roof ventilation construction techniques are shown in the diagrams to the right.

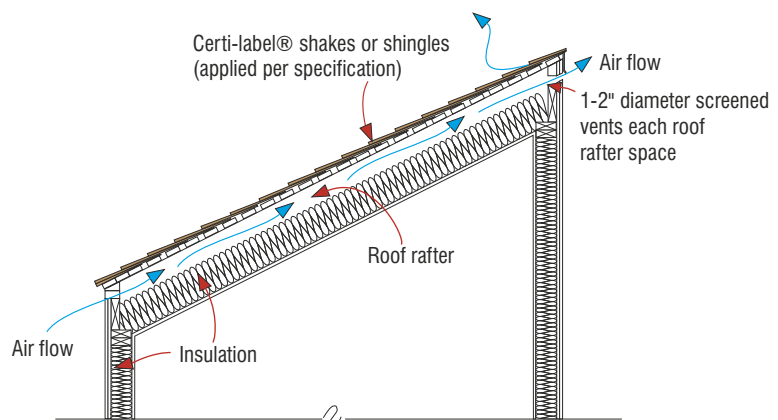
Any modification to the vapor barrier system or addition of a vapor barrier system should only be done after consulting with your local building official or a building envelope specialist. In some areas, building envelope specialists are regulated by government. Please check with local building officials to see if there are professional requirements in your area.



**Gable Roof With Attic**



**Cathedral Ceiling With Partial Attic**



**Shed Roof**

## Ventilation Details



## REPAIR

**Repair Methods:** This is one of the correct methods of replacing a cedar shake. For other approved methods, please contact the CSSB.

### Example: Replacing

The CSSB advocates informed re-roofing and repair assessment. Repairing a cedar roof is possible and here are some simple steps to follow:



Slide ripper tool up under damaged shake and hook nail.



Push ripper tool down and cut nail (repeat on second fastener).



Pull out shake.



Install new shake so that the butt is approximately 1/2" to 3/4" below other shakes in same course. Insert nails at 45° angle adjacent to covering course above.



Tap butt of shake up using piece of wood to protect butt.



Repair is completed.

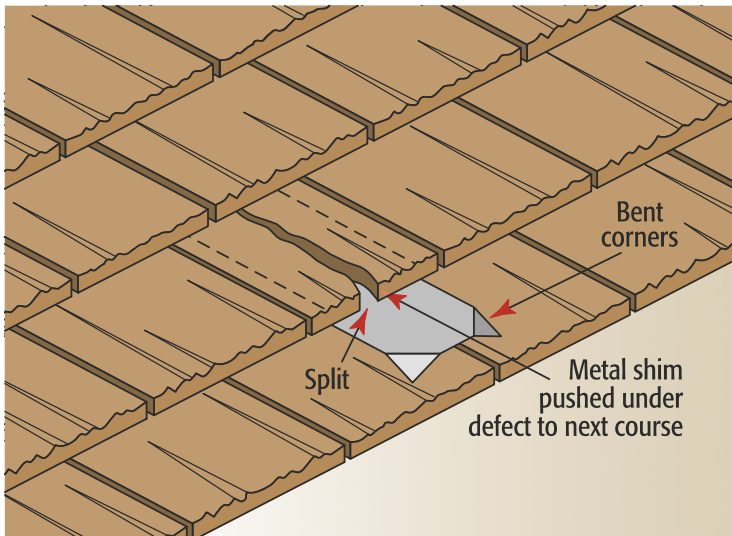
### Matching new cedar to old cedar

New cedar shakes and shingles will typically weather to an attractive gray color in approximately 6 - 9 months. This fact is dependent upon local environmental conditions.

## REPAIR

### Repair is possible and practical

Let's face it, re-roofing a home is a large job that should be undertaken only if necessary. Unnecessary re-roofing projects hurt the insurance industry and policy holders with higher costs, and increase waste disposal or recycling needs (remember that cedar is biodegradable and will not linger in landfills as long as many alternative products will). Unnecessary re-roofing projects also harm the cedar shake and shingle industry by implying that products' lifecycles are shorter than they really are. Facts are important, and the photos in this brochure show how repairs are possible.



Unlike alternative synthetic roofing materials, one never has to worry about matching color lots or factory profile designs: cedar will weather to an attractive gray color and product styles manufactured 100 years ago are still made today. For help in sourcing specific items, the CSSB offers free technical assistance.

### Example: Shimming

Shimming can be used to repair the odd shake or shingle, filling in a split piece from below. This method is effective, however, no more than 20% of a roof area should be shimmed, for both roofing system integrity and cosmetic appearance purposes. If this 20% limit is reached, one should consider repairing the area with new shakes or shingles OR a complete re-roof job, depending upon the circumstance and level of damage.

In general, no more than 25 hail impact splits per 100 square foot section should exist, if repairs are being contemplated.

## CONCLUSION

Cedar shakes and shingles are the traditional roofing product of choice. Manufactured from a sustainable, environmentally-friendly resource, cedar roofing materials provide the aesthetics and quality desired in long lasting protection for your home. Proven through independent laboratory testing, cedar is weather resistant in multiple climates. The ability to repair a cedar roof, without having to worry about matching color lots, is another reason to choose Mother Nature's finest. Contact the CSSB with any questions.

TEL: 604-820-7700  
FAX: 604-820-0266

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[info@cedarbureau.com](mailto:info@cedarbureau.com)



## THE BEAUTY OF CEDAR



C & H Roofing Inc.



C & H Roofing Inc.



Huber & Associates



Victor International  
Corporation,  
Architect: Alexander  
Bogaerts & Associates



## GLOSSARY OF BUILDING CODE RELATED TERMINOLOGY

**Building Code Official:** Also known as 'Building Official'. The person hired by a given jurisdiction to ensure that building code regulations are followed and enforced. Is involved with reviewing variances requested in the building permit process. Usually an active contributor to city council decisions regarding commercial and residential buildings/developments. The first person to contact in a jurisdiction when a question about applicable building codes exists.

**Building Inspector:** Person who visits job sites to review structural soundness and integrity. A written and detailed report is usually provided to the client.

**Bundle Label:** Label found under the strap holding a bundle of shakes or shingles together. Includes items such as product type, dimensions, grade, manufacturer, and building code compliance.

**Butt:** End of the shake or shingle exposed to the weather.

**Canadian Standards Association (CSA):** An accredited organization that produces some of the standards in Canada.

**CSSB-97:** Current Western Red Cedar shake and shingle grading rules as accepted by and published in international building codes.

**Class A:** Roofing systems intended for use on highly fire resistant buildings and are required on institutions such as hospitals or jails. Class A roofing systems include cedar roofing products manufactured by CSSB members.

**Class B:** Roofing systems required for use on apartment buildings, condominiums and commercial buildings and are often recommended for use on dwellings in high fire hazard areas, such as wildland interface urban areas. Class B roofing systems include cedar roofing products manufactured by CSSB members.

**Class C:** Roofing systems which are the most commonly specified for single family dwellings and duplexes when fire retardant roofing is desired. Class C roofing systems include cedar roofing products manufactured by CSSB members.

**Dade County:** County in Florida famous for mandating the strictest wind resistance requirements in the nation. Products that meet Dade County requirements are better choices for hurricane prone areas.

**Flat Grain:** Annual growth rings form less than 45 degree angle with product surface. Up to 20% (maximum) flat grain is permitted in each Number 1 Grade shake bundle. No flat grain is allowed in Premium Grade shakes or Number 1 Grade shingles.

**International Building Code (IBC):** The set of building code regulations for commercial structures written by the International Code Council.

**International Code Council (ICC):** Organization created by merger of Building Officials and Code Administrators International, International Conference of Building Officials and Southern Building

Code Congress International. Responsible for publishing the IRC and IBC building codes.

**International Residential Code (IRC):** The set of building code regulations for residential structures written by the International Code Council.

**Length:** Measurement used to distinguish certain product types. Typical cedar shakes are 18" or 24" in length. Shingles are available in 16" Fivex, 18" Perfection, or 24" Royal lengths. Custom dimensions are available for shakes and shingles.

**Pressure Impregnated Treatment Process:** Process that uses pressure to force either fire retardant OR preservative treatment into the cells of the wood, locking it inside. This is not a spray on treatment that will leach out after a rain storm.

**Red Tagged Building:** Stop work order put on building (usually under construction) if code requirements are not being met.

**Stormchaser:** Typically a fly-by-night, low quality, inexperienced and unscrupulous roofing contractor who operates from town to town, following storms and leaving behind his or her own path of destruction with unsuspecting homeowners.

**Texas Department of Insurance (TDI):** The Texas Department of Insurance regulates the Texas insurance industry and its work includes public education about insurance and building products ([www.tdi.state.tx.us](http://www.tdi.state.tx.us)).

**UL-1897:** Test standard for measuring uplift resistance of roofing products. Ratings can be converted to miles per hour using engineering calculations.

**UL-2218:** Test standard for measuring the impact resistance of products. Ratings are Class 1 (lowest) to Class 4 (highest) and are the same for all roofing materials, regardless of product type. Product test results have been used to provide insurance discounts for homeowner policies.

**Uniform Building Code (UBC):** The set of building standards followed in some jurisdictions in the United States that have not yet adopted the new ICC-authored codes.

**Vertical Grain:** Also known as Edge Grain. Annual growth rings form 45-90 degree angle with the product surface.

**Western Red Cedar:** Most common species of cedar shakes and shingles. Color can vary from dark chocolate brown to light pink, and will weather to a gray shade. Latin name is *Thuja plicata*.

**Yellow Cedar:** Shakes and shingles that typically weather to a lighter, more silvery gray than Western Red Cedar. Also known as Alaskan Yellow Cedar or Western Cypress. Latin name is *Chamaecyparis nootkatensis*.

## BUILDING OFFICIAL'S CHECKLIST

**Identification:** Every bundle of cedar shakes or shingles will have a mill label tucked under the bundle strap. Only Cedar Shake & Shingle Bureau ("CSSB") members manufacture product with the "Certi" brand name on the label. This label will identify the manufacturer, building code compliance numbers, product performance tests, third party inspection agency, product type, grade and dimensions.

**Treated Products:** Products may be fire-retardant treated (Certi-Guard®) OR preservative-treated (Certi-Last®). Treated products will have a treatment label in addition to the mill label. Certi-Guard fire-retardant treated products can be used for Class A, B and C rated roofs, and should be applied in accordance with local jurisdiction requirements.

**Felt Interlay:** Roofing felt system interlay between shake courses is required, regardless of the sheathing type. An 18" wide strip of No. 30 ASTM Designation 226 (ASTM D226) or ASTM Designation 4869 (ASTM D4869) roofing felt should be laid over the top portion of the shakes and extend onto the sheathing. The bottom edge of the felt should be positioned above the butt of the shake at a distance equal to twice the weather exposure. Never interlay shingles with felt.

**Exposures:** Maximum weather exposures are located in the CSSB New Roof Construction Manual and on the CSSB Member Manufacturers' product labels. In staggered butt applications, never expose any product more than the maximum recommended exposure.

**Keyways:** (spaces between shakes or shingles). Space shakes 3/8" to 5/8" apart. Space shingles 1/4" to 3/8" apart.

**Joints:** (vertical side lap). Offset shakes and shingles a minimum 1 1/2" between joints in adjacent courses. For shingles, not more than 10% shall be in direct alignment in alternate courses.

**Fasteners:** Use two fasteners per shake or shingle. Fasteners should be driven flush with the product surface. Underdriving or overdriving any fastener will affect the integrity of the roofing system. Fasteners should be placed approximately 3/4" from side edges and approximately 1 1/2" above the exposure line. Refer to the CSSB New Roof Construction Manual for specific fastener lengths and application details.

**Nails:** Nails **must be** stainless steel Type 316 in locations within fifteen miles of salt water (Ref. Stainless Steel Industry of North America-Washington, D. C. , [www.ssina.com](http://www.ssina.com)\*). For locations outside the salt water zone - nails, **must be** Type 304 or 316 stainless steel, or hot-dipped zinc coated galvanized conforming to minimum standard ASTM A 153 Class D (1.0oz/ft<sup>2</sup> ) or better.

**Staples:** If staples are used they **must be** stainless steel Type 316 in locations within fifteen (15) miles of salt water (see reference above\*). For locations outside the salt water zone – Stainless steel Type 304 or 316 **must be** used. Staples must be 16 gauge with crowns 7/16" minimum horizontal, maximum 3/4" horizontal to the shake or shingle butt. Other fasteners may be used as accepted by the local building official.

This checklist provides a brief overview of product application.

To obtain more comprehensive information please contact the Cedar Shake & Shingle Bureau®.



Brindisi & Yaroscak Custom Builders, Inc.  
Architect: George Dumitru

**Quality Control Marketing Installation**  
**Building Codes Environmental Friendliness**  
**Promotion Repair Website Sidewall**  
**Sustainability Seminars Videos Roofing**  
 Trade Shows Brochures Continuing Education Units  
**Top Quality Cedar Shakes and Shingles**  
**Weather Resistance True Craftsmanship Tradition**  
**Membership 100+ Years Experience**  
 Pressure Impregnated Treated Product  
**Third Party Inspection Agency**  
 Cedar Quality Auditor – Second Layer of Quality Control  
**Legitimate third party inspection**  
**Multigenerational Family Businesses**  
 Renewable, Recyclable Cedar Shake and Shingle Products

Production  
assistance  
provided by:



Forestry Innovation  
Investment®



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