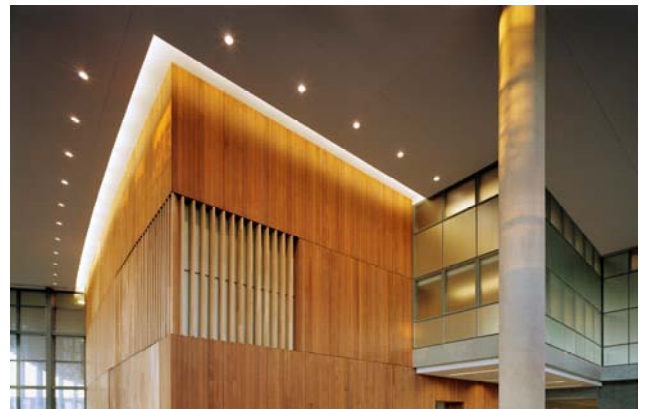


## Facade Systems - Rain Screen, Soffit and Wall Cladding

The perfect complement to the natural beauty of our Iron Woods® premium grade exterior building products and our existing line of cladding profiles, the Iron Woods Rain Screen, Façade and Vanish™ Clip System brings a new found elegance to the art of both commercial and residential building envelope and interior facade design and construction.



"Smart Home...Green and Wired" Chicago Museum of Science and Industry



U.S. Census Bureau

The concept of rain screen or ventilated and back drained wall and soffit systems is not new. As far back as the 15<sup>th</sup> century the impact of moisture condensation behind exterior wall cladding on material performance and finishes has been well understood. Back-Ventilated cladding and soffit systems allow moisture to evaporate more rapidly than closed systems improving the service life of building envelopes in environments that experience high winds and driven rain.

*"Moisture accumulation and extreme fluctuations in moisture levels can adversely affect the service life of components, such as wood siding and windows. Adverse moisture conditions can induce checking, warping, paint failure, and in severe cases rotting of the wood. Proper building design and construction can help prevent moisture accumulation or excessive moisture fluctuation within building components"*

**U.S. Dept. of Agriculture Forest Products Laboratory:  
Before You Install Exterior Wood Based Siding**

What is new is our unique Vanish Clip System which eliminates the need for visible fastening, eliminates the need for battens and creates both vertical and horizontal air flow improving pressure equalization in high wind environments.





## The Iron Woods System ... State Of The Art in Exterior and Interior Wood Facade Design.

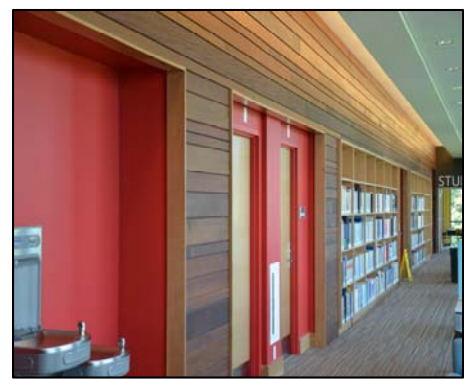
While originally developed for exterior applications, architects and designers now recognize that the Iron Woods® unique Vanish™ Clip system represents a significant improvement in the technology for Interior and exterior residential, and commercial facade applications.



Soffit



Rain Screen and Soffit



Interior Facade



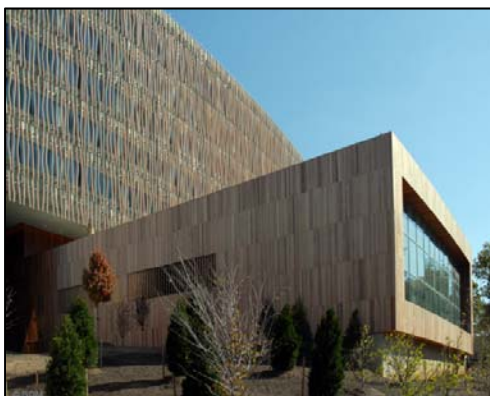
Single Family



Multi Family



Commercial



Vertical



Horizontal



Soffit



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## Designed and Engineered to Perform

- Iron Woods Façade System can be applied over most exterior and interior envelope design types including application over Rock Wool create noise absorbing wall systems.
- Vanish proprietary clip design combined with proprietary facade profile provide a clean aesthetic appearance reducing the potential of visual telegraphing of clips between cladding boards.
- The Vanish Clip System eliminates the need to predrill cladding greatly reducing installation labor costs and eliminates the points of water penetration associated with face fastening.
- All Iron Woods cladding options are kiln dried and pre-stabilized to eliminate the potential for clip exposure due to shrinkage.
- Cladding adjusts naturally to changes in environmental conditions eliminating stress at connection points.
- Both Open (Rain Screen) and Closed (Cladding) profiles are available for use with the Vanish Clip System.
- Unique Rain Screen profile improves water shedding and eliminates damaging clip in groove gutter effect and risk of cladding to clip separation associated with some rain screen profiles.
- Vertical and horizontal air flow improves moisture dissipation from the envelope and connection points while providing superior pressure equalization.
- Vanish Clips reduce or eliminate galvanic reaction between clip, fastener, batten or cladding materials and any potential for corrosion or staining and eliminate the risk of corrosion from sea salt or other pollutants improving life cycle system performance.
- Vanish unique three hole high and low profile clips provide design and attachment options to both wood and steel including clip to batten, clip to stud or clip direct to sheathing attachment.
- Direct to sheathing attachment option allows the use of random length cladding reducing cladding trim waste lowering material costs.
- Specialized self-drilling T316 Stainless Steel Screws with unique thread design generates superior clip to wood sheathing or batten connection and engineered screw pull out performance. Specialized self-drilling Quick Guard Coated Screws generate superior clip to galvanized steel battens, studs or z girt framing systems.
- Wider clips provide superior connections and smooth transitions at butt joints.
- Engineered to Perform, Iron Woods Rain Screen, Cladding Façade and Vanish Clip System is third party signed and sealed to comply with state building code wind load compliance requirements. CSI specification language and section details are available upon request.
- Iron Woods Cladding Systems should not be installed in contact with the ground at grade, concrete slab, deck materials or standing water. Flashing and counter flashing should be installed at the intersection of the roof and vertical surfaces as recommended by the roofing manufacturer.
- Iron Woods Cladding Options are Certified Environmentally Compliant under our Green By Nature...Build with Conscience Environmental Compliance Program, USGBC/LEED/FSC Certified Compliant Species Options are available





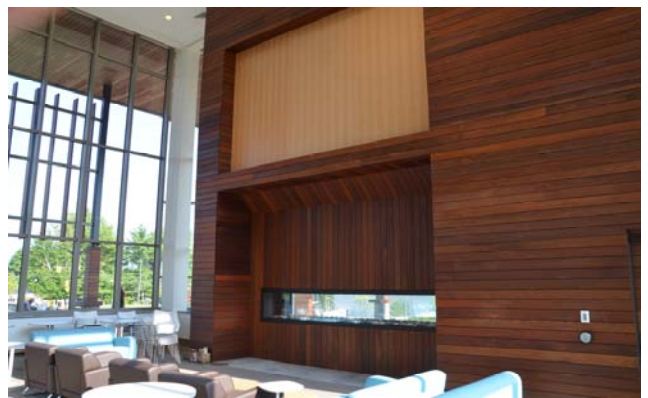
Kellogg School of Management



Geosouthern Headquarters



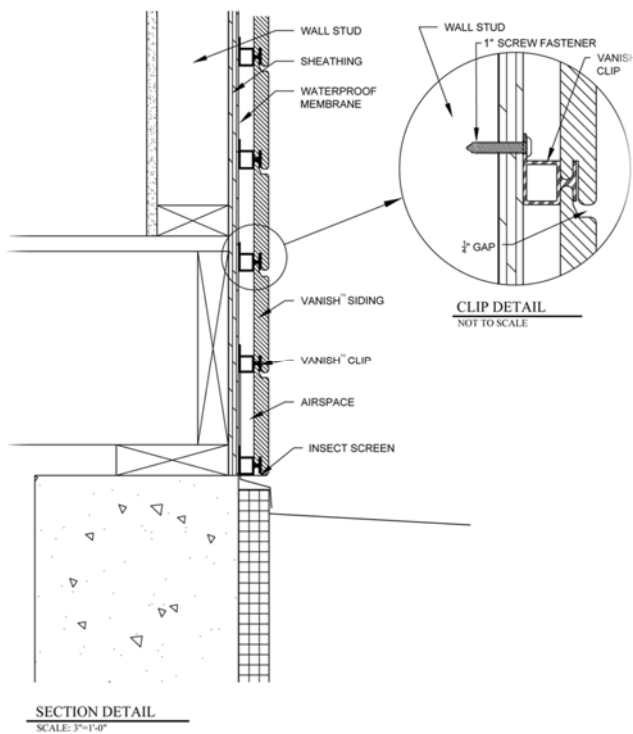
Grande Cheese Headquarters



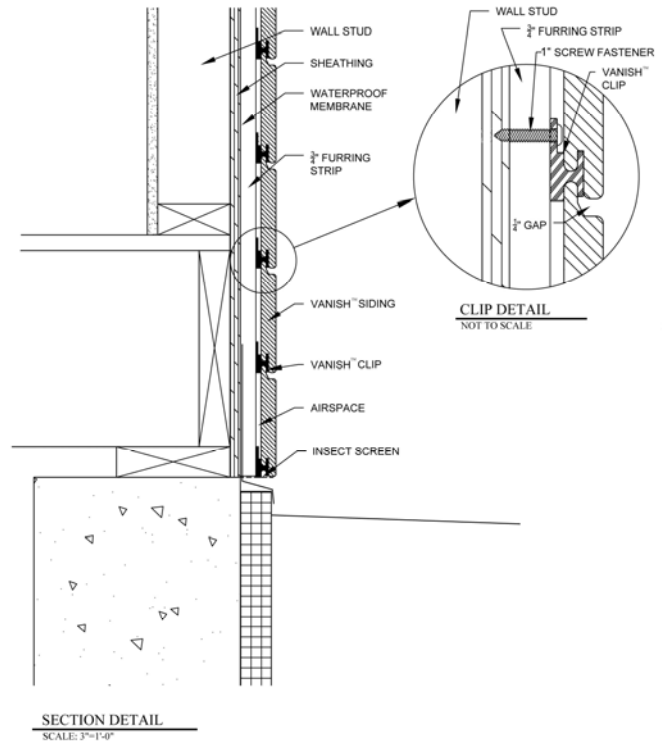
Southern New Hampshire University

## The System

Section details are available in PDF, DWG and DXF files upon request.



**High Profile NB Clip**



**Low Profile OB Clip**

### System Installed Depth

- NB Clip On Sheathing = 1-7/16"; clip is 3/4" to siding back, plus 11/16" thick siding
- OB Clip On Sheathing = 1-1/16"; clip is 1/4" to siding back, plus 11/16" thick siding
- OB Clip On Batten = 2-1/16"; clip is 3/8" to siding back, plus 11/16" thick siding plus 3/4" thick batten

### Insect Screen

- NB Clip On Sheathing – Install Core-A-Vent™ SV-5 'Or Equal' on top of the starter row of clips.
- OB Clip On Sheathing - Install WallNet™ WN.4 'Or Equal' on top of starter row of clips.
- OB Clip On Batten – Install Core-A-Vent™ between battens with WallNet™ on top of starter row of clips.



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### Waterproof Membrane Options

- Zip Panel
- Benjamin Obdyke Flat Wrap™ (Mechanically Attached) Black
- VaproShield Wrap Shield SA™ (Self Adhesive) Black \*Not for use with OSB
- VaproShield Wrap Shield RS™ (Rain Screen Mechanically Attached) Black
- Intelliwrap SA™ (Self Adhesive) Black \*Not for use with OSB
- Intelliwrap MA™ (Mechanically Attached) Black
- Hydro Tex™ (Mechanically Attached)
- Or Equal

### The Cladding

The Iron Woods Rain Screen System utilizes a proprietary “clip-eclipsing” wood profile that conceals the fastener system while allowing maximum air flow and water evaporation. The unique profile also facilitates ease of handling and installation. With no nail or screw heads to detract from the rich, natural beauty of the Iron Woods Rain Screen System, it is clear that no rain screen or cladding solution on the market today is more appealing to the eye than our unique Iron Woods Rain Screen System.

- Standard Thickness - Nominal 1 inch (net 11/16” thick)
- Standard Edge Radius is 1/8” ( 0 and 1/16” radius available by special order)
- Standard Profile Reveal is 1/4”. ( 0 and 1/8” reveals by special order)
- Custom Profiles Available Upon Request.

### Standard Widths and Coverage Estimates

- Nominal 6 inch (4.75” Coverage) 2.52 linear feet per square foot approx.  
2.1 clips/SF, installed 16”o.c.  
1.5 clips/SF, installed 24”o.c
- Nominal 4 inch (2.75” Coverage) 4.36 linear feet per square foot approx.  
3.6 clips/SF, installed 16”o.c.  
2.5 clips/SF, installed 24”o.c.

*Note: Estimates are approximate. Actual usage will vary depending on run lengths, window openings, doors, butt joints, etc.*

### Battens

Typically used when covering masonry walls, batten options include solid naturally durable wood, high density polyethylene (stainless steel self-drilling screws), galvanized steel hat, box or C channel (galvanized self –tapping screws).

### Allowable Wind Pressure

Clip placement 24” on center – 80 psf.

Clip placement 16” on center – 110 psf.

### Species Options

Iron Woods Rain Screen can be special ordered in a wide range of kiln dried lumber species for both exterior and interior applications. It is important that you check your installed location equilibrium percentage to determine what level of acclimation may need to take place prior to installation.

Cladding is generally supplied random in random lengths 6' and longer. It is important to note that shorter lengths with typically be straighter, less prone to bow and easier to handle than longer lengths. Bow in longer boards can easily be removed by cutting the longer boards to shorter lengths during installation.

Species stability impacts the suitability of cladding width and length specifications. The Iron Woods cladding profile can be run from virtually any wood species available in the market. The following list will give you some indication of possible species, width and length options. USGBC/LEED compliance will significantly limit available species options.

Please contact us to discuss species options, LEED compatibility (if required) and supply lead times prior to specification or selection.

### Stock Offerings



**Ipe (Iron Woods®)** - Premium Select Mixed Grain (1x4, 1x6), (6ft to 11'ft Random Length) Stock.  
Clip placement up to 24" on center.



**Garapa (Iron Woods®)** - Premium Select Mixed Grain (1x6), (6ft to 11'ft Random Length) Stock.  
Clip placement up to 16" on center

Dark Red Balau Image  
Here

**Dark Red Balau (Iron Woods®)** – Premium Select Mixed Grain (1x6), (6ft to 11ft Random Length)  
Special Order. Clip placement up to 16" on center.



**Cumaru (Iron Woods)** - Premium Select Mixed Grain (1x6), (6ft to 11'ft Random Length) Stock.  
Clip placement up to 16" on center.



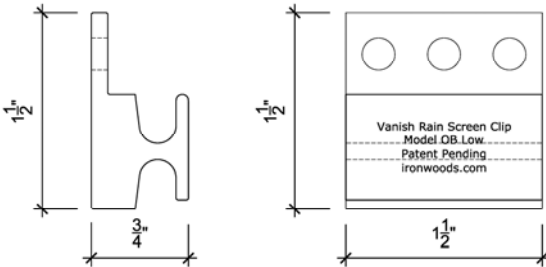
## Softwood Options



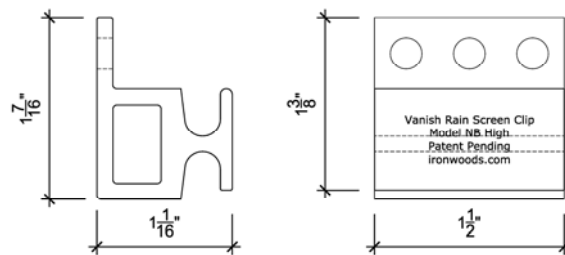
**Cedar** – Clear Mixed or Vertical Grain (1x4, 1x6, 1x8) (6ft to 15ft Random Length) Stock. Clip placement up to 24" on center. Cedar can be prefinished with penetrating oil based finishes. Or bleaching oil. Cedar is available pre primed if a painted finish is desired.

## The Clips

Iron Woods Rain Screen Clips are available in 2 models:



Model # VRSCOBLP (Low Profile)



Model # VRSCNBLP (High Profile)

## The Fasteners

Fasteners are specific to clip application. Requirements will be project and application specific.

Typical Applications –

“Wood Sheathing Attachment”: VRSSDPAS1T316 (1”) (two screws per clip 24” OC).

\*Wood Sheathing Attachment”: VRSSDPAS1T316 (1”) (one screws per clip 16” OC).

“Wood Batten Attachment”: VRSSDPAS1T316 (1”) (one screw per clip 16” OC).

“Galvanized Steel Attachment” VRSSDEX75GALV (3/4”) (one screw per clip 16” OC).

*\*All Iron Woods Rain Screen Screws are self-drilling. Screw length and type will ultimately be determined by envelope design.*

*\* Galvanic reaction does not allow for direct contact between aluminum clips and treated lumber.*





## Installation

Important: Read and understand these instructions before installing rain screen. These installation instructions are based on manufactures experience with normal applications. They are not intended to cover every installation or building code requirement, detail or variation. If questions arise concerning the product or its suitability for a particular use, contact your architect or engineer. Any unapproved deviation from these procedures shall be solely at the risk of the installer. The project architect or engineer or designer has the responsibility to design a proper building envelope for moisture control. Our wood is properly milled and inspected to meet the material requirements. These building materials are grown in nature and will vary in color, grain, weight and density. Expansion/contraction, checking, dimensional variance and movement are normal when exposed to the elements and moisture in the air. Always use proper safety equipment when installing the rain screen. Follow all local building codes and obtain permits as required in your community.

## Storage and Handling

Iron Woods Rain Screen must be stored out of direct sunlight and must be allowed to acclimate and stabilize to installation area moisture levels before installation. Keep siding loosely covered with tarps and protected from water, flat, well off the ground and banded until ready to install. Allow for air flow around the unit to assist in drying. Siding should be kept dry before and during installation.

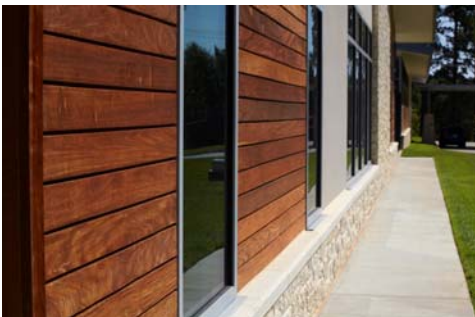
## Cutting

Use carbide tipped finish cut saw blades. Seal all ends immediately after cutting with an aqueous wax based end sealer, similar to "Anchorseal". To improve transitions when butting boards use a small hand router and apply 1/16" radius to the face of the board ends.

If boards are bowed at time of installation, cut boards to shorter lengths to eliminate bow.

## Trim

Windows and doors should be properly installed before starting the installation of the clips and siding profile. Leave a minimum 1/8" gap at all abutment points to allow for expansion/contraction of the siding. While wood is the typical trim material, aluminum trim options are available from a variety of manufacturers.





## Fastening

Set elevation lines across the wall surface to assure that required level is maintained during installation. When installing start at the base moving upward in complete rows. Check your alignment and level siding after installation of each row. The final/top siding board may need to be ripped to the proper width, pre-drilled, and face screwed for fastening the top of the siding.

- Position Clips so that fasteners are placed 16" On Center over studs for stud attachment or at a maximum of 24" on center for Panel attachment.
- The fastener should be driven perpendicular to the board surface and must be long enough to penetrate at least 3/4" into solid wood.
- Always begin Clip application at one end and proceed to the other end. If a board is bowed it is recommended that you cut the board in half to eliminate the bow, re-square the ends and install.
- Use 1 clip at butt joints.
- Install screws so they lie flat to the clip and the screw head does not interfere with the insertion of cladding into the clip.
- Use these materials in combination with conventional wood corner and widow trim treatments or create unique designs utilizing alternative materials. Stainless steel finish screws with colored heads or stainless steel finish screws with species matching wood plugs are available for installation of wooden trim.

## Iron Woods Finishing

It is recommended that wood rain screen siding be sealed on all four sides prior to installation. To maintain the natural wood color: apply a transparent penetrating oil based sealer or stain with UV inhibitors in a trans-oxide pigmented tint and reapply annually or as needed. Consider brands similar to: *Penofin* /[www.penofin.com](http://www.penofin.com)

- Before application of sealers, brush and clean the surface to remove dirt and dust.
- Periodic cleaning with simple soap and water will enhance the appearance of your siding.
- To return silver gray wood to the original color, use a "wood brightener". Careful power washing and/or sanding can help to remove the grayed wood. Allow to dry and apply a UV inhibitive sealer.
- Other types of oil and water based coatings have been used. However, fully test samples from several boards to determine their compatibility your siding.
- Follow all coating manufactures application recommendations.
- First Coat - Pre finishing services are available (Penofin only)

\*Cladding will weather naturally to a silvery gray if no coatings are applied and maintained.

\*Sealer selection is the responsibility of the architect.



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## Pre-Finish Options

### First Coat™

#### Hardwood

##### Penetrating Oil Based Pre-Finish Options

Penofin – Exotic Hardwood Formula (Natural)

#### Cedar

##### Penetrating Oil Based Pre-Finish Options

Cabot Clear Solutions – All Finish Colors Offered

Cabot Australian Timber Oil – All Finish Colors Offered

*\*Field applied second coat required after installation.*

*\*There are no manufacturer warranties on penetrating oil pre-finishes.*

#### Cedar

##### 2 Coat Factory Applied Paint Pre-Finish

Base Coat – Cabots or PPG Tinted Oil Primer

Second Coat – Cabots or PPG Latex Factory Applied Top Coat – All Cabots or PPG Color Offerings.

*\*Field applied top coat required after installation to avoid breach of coating manufacturer warranty.*

## Field Applied Options

Hardwood – Penetrating Oil Based Sealers: Penofin 'Or Equal'

Cedar – Cabots Clear Solutions/Australian Timber Oil 'Or Equal'

Cedar – Bleaching Oil

Cedar – Oil Based Primer with Latex Top Coat

Accoya – Penetrating Wood Stains and Sealers

*\*It is the responsibility of the designer to determine suitability of finishes and maintenance requirements.*





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## **Iron Woods Rain Screen Material Take Off Form**

**The following information is required to accurately quote materials for the Iron Woods Rain Screen/Soffit System.**

**1) Material Selection – Select One**

Ipe\_\_\_\_ FSC Ipe\_\_\_\_ Garapa\_\_\_\_ FSC Garapa\_\_\_\_ Red Balau\_\_\_\_ Cedar VG\_\_\_\_  
Thermo Ash\_\_\_\_ GeoLam\_\_\_\_ Other\_\_\_\_\_

**2) Width – Select One**

1x4\_\_\_\_ 1x6\_\_\_\_

**3) Coverage**

SQ FT\_\_\_\_\_

**4) Application – Select One**

Horizontal\_\_\_\_ Vertical / Diagonal\_\_\_\_\_

**5) Clip Type – Select One**

Low Profile Clip 3/8" Air Space\_\_\_\_ High Profile Clip 3/4" Air Space\_\_\_\_\_

**6) Clip Spacing – Select One**

16"\_\_\_\_ 24"\_\_\_\_ Other\_\_\_\_\_

**7) Attachment Substrate – Select One**

Wood\_\_\_\_ Galvanized Steel\_\_\_\_\_

**Disclaimer: If all information is not accurately provided a takeoff cannot be calculated or may result in an inaccurate calculation.**



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## Estimating Costs

Material costs vary by cladding and application type. Timber Holdings will be pleased to assist you in developing project material estimation costs upon request.

Labor costs are of course variable project to project. What we know from past projects is as follows...Two experienced carpenters should be able to install and average of approximately 1500 square feet of 1x6 Iron Woods Rain Screen in a forty hour work week.

Budget for additional labor when battens are required.

*\*Cost analysis and material selection are ultimately the responsibility of the designer and contractor.*

## Design Basics IBC Compliance

IBC Section 1406 Combustible Materials on the Exterior Side of Exterior Walls

Section 1406.2.1 Type I, II, III and IV Construction, exterior wall coverings shall be permitted to be constructed of combustible materials, complying with the following limitations:

1. Combustible exterior wall coverings shall not exceed 10 percent of the exterior wall surface area where the fire separation distance is 5 feet (1524mm) or less.
2. Combustible exterior wall coverings shall be limited to 40 feet (12192mm) in height above grade plane.

Section 1406.2.3 Fire blocking

Where the Combustible Exterior wall covering is furred out from the exterior wall and forms a solid surface the distance between the back of the exterior wall covering and the exterior wall shall not exceed 1-5/8" (41mm) The concealed space thereby created shall be fire blocked in accordance with Section 718

## Specification Development

CSI Master Specification Language, Section/CAD Details and Master Plan Sheets signed by licensed state engineers are available on our website [www.ironwoods.com](http://www.ironwoods.com) or by request.