



NEWPORT HISTORIC DISTRICT COMMISSION

DEPARTMENT OF ZONING & INSPECTIONS

43 Broadway, Newport, Rhode Island 02840

401.846.9600 (City Hall) 401.845.5357 (Preservation)

Received by the Zoning and Inspections Department:

HDC
MAR. 28

APPLICATION FOR CERTIFICATE OF APPROPRIATENESS

Please complete this application in **BLACK** or **BLUE** ink only.

Illegible/incomplete applications will be returned to the applicant.

Hearing Dates and Filing Deadlines are posted at City Hall and www.cityofnewport.com.

GENERAL INFORMATION

PROPERTY ADDRESS: 121 OCEAN AVENUE	Plat: 41	Lot: 267
Property Name (if any, including historic): ROCKY FARM	Original Date of Construction: ca 1695, previously demolished	
APPLICANT (Legal Owner of Record): NPT PROPERTIES, LLC	Telephone: 212-582-1100 Email: bfetner@bafmgmt.com	
Mailing Address: PO BOX 4936, NEW YORK, NY 10185		
LEGALLY AUTHORIZED REPRESENTATIVE: TURNER C SCOTT	Telephone: 401-847-7500 Email: tscott@millerscott.com	
Mailing Address: 122 TOURO STREET, NEWPORT, RI 02840		

ADDITIONAL INFORMATION CHECKLIST

- Y N Is the application fee included? (See attached General Fee Schedule)
- Y N Is the property in condominium ownership? **If yes, proof of board or association approval must be attached.**
- Y N Is this application filed in response to a violation notice?
- Y N Is this application a modification of plans previously-approved (date(s) _____) by the HDC?
- Y N Does this project require other approvals? Zoning _____ CRMC _____ Other (describe): _____
- Y N Does access to the subject property require special arrangements? _____

SUMMARY OF PROPOSED WORK

Describe all proposed exterior alterations to the subject property here.

Do not leave this section blank.

Check off all applicable categories below.

Sheep Shed:

- Demolition of shingled, 2 bay garage attached to historic stone structure.
- Raise existing wood framed roof and remove skylights from historic stone structure. Proposed addition of wood clerestory between stone walls and shed roof structure. Replace roof shingles with Standing Seam roof, painted "Freedom Gray."
- Existing doors and windows to be restored.
- Addition of (1) door opening in stone structure. Door to match existing existing openings in size, material, and space between bays.
- Addition of cedar clad mechanical lean-to on foundation of existing garage, with shed roof to match adjacent.

New Construction:

- Proposed construction of detached single family home.

Y N Repair/replacement of exterior architectural features?

Y N Minor Alteration(s) – Any alteration(s) that replace existing building features or any new construction of *less than 25%* of the existing structure's square footage?

Y N Major Alteration(s) – Any addition(s) of *more than 25%* of an existing structure's square footage or any new freestanding structure(s)?

Y N New Construction?

Y N Demolition?

Y N Roof(s) or skylight(s)?

Y N Window(s) or door(s)?

Y N Porches or Entries?

Y N Chimney(s)?

Y N Foundation?

Y N Mechanical and/or electrical equipment?

Y N Shutters or awnings?

Y N Sign(s)?

Y N Pools and/or site structures?

Y N Other? Describe: _____

REQUIRED APPLICATION MATERIALS

**PLEASE READ CAREFULLY TO CONFIRM THAT ALL REQUIRED MATERIALS
ARE INCLUDED IN COMPLETED APPLICATION PACKET.**

All HDC application materials must be submitted on 8.5x11 or 11x17 paper, single-sided, to facilitate electronic scanning, posting and archiving.

**10 COPIES OF EACH APPLICATION ARE REQUIRED.
1 DIGITAL COPY OF ALL MATERIALS SHOULD BE SUBMITTED TO
PRESERVATIONCOA@CITYOFNEWPORT.COM**

COMPLETED APPLICATION FORM AND 10 COPIES OF EACH REQUIRED MATERIAL (PHOTOGRAPHS, DRAWINGS AND MATERIALS/PRODUCT LITERATURE/SAMPLES) INCLUDED?

PHOTOGRAPHS?

Ten (10) color copies of color photographs (4" x 6" or larger) clearly depicting current existing conditions at the property are **required** for all applications. Include a minimum of one (1) street view of the property showing any portions of the building(s) that are visible and a minimum of one (1) photograph of each elevation that will be affected by the proposed work. **Photographs must be submitted on 8.5x11 or 11x17 paper. Prints are not accepted.** Date and legal address of subject property should be indicated on all photographs. Including historic views of the subject property is encouraged.

DRAWINGS?

If drawings are required, one (1) original drawn scale set should be submitted along with ten (10) copies of the original, reduced to fit on 8.5x11 or 11x17 paper. Drawings must include date, scale, cardinal points (N, S, E and W) and proposed materials. If the application proposes modifications to a plans previously approved by the HDC, an 11x17 copy of the previously-approved drawings must be included along with new drawings depicting proposed modifications. *Please note that applications for any major construction require drawings that meet professional standards.*

Elevation drawings are required for most projects and should show existing conditions and proposed alterations at all elevations that will be affected by proposed work. (1/4" = 1' scale or larger for most residential-scale projects)

Elevation detail and cross section drawings are required for proposed projects (including new construction and major alteration) that involve new or altered windows, doors, dormers, porches, trim elements and other new or altered architectural features. (3/4" = 1' scale or larger)

Full scale details are required for certain proposed new architectural elements (moldings and other trim elements, for example.)

Site plan is required for any alteration to existing building footprints, including proposed free-standing construction or additions to existing buildings as well as for the addition of at-grade mechanical equipment. (1"=20' scale or larger)

Perspective drawings (or some other form of perspective depiction, such as photomontage) may be required for proposed new free-standing construction or substantial alteration of existing buildings or sites.

MATERIALS/PRODUCT LITERATURE/SAMPLES?

Ten (10) copies of product literature and/or manufacturer specification sheets for stock items should also be submitted. Material samples are requested on a case-by-case basis, but are generally required for any proposed new construction or substantial alteration of existing buildings.

SIGNATURE

I certify that (i) I am the Legal Owner of Record or legally authorized to sign on behalf of the property's Legal Owner of Record and (ii) all of the information provided in and with this application is true and accurate to the best of my knowledge.

Applicant Signature:  Date: 02/18/2020

Applicant Printed Name: BARRY FETNER

**COA APPLICATION -
MANUFACTURED MATERIAL CUTSHEETS
FOR MARCH 17, 2020 HDC HEARING**

NAKAMOTO FORESTRY

Suyaki



Installation Details

Overage

Please add a healthy overage ranging 15-20%, as shipping additional material can be very expensive.

Fastening (Exterior)

Two ring- or screw-shank headed face nails per furring strip within 1" of each edge

Substrate (Exterior)

Rigid furring minimum 16"OC

Fastening (Interior)

Tube adhesive and pin nails

Substrate (Interior)

Per design specifications

Installation Layout

Vertical or horizontal, all profiles

Dimensions & Grades Available

Select Grade		
6" Lap	6" S3S	8" S3S

Profile	SF/pc	Length	Reveal	Thickness
6" Lap	5.37	145 11/16"	5 5/16"	9/16"
6" S3S	5.75	145 11/16"	5 11/16"	9/16"
8" S3S	7.76	145 11/16"	7 11/16"	9/16"

Manufacturer

Nakamoto Forestry North America
Warehouse and Office (By Appt Only)
6400 SE 101st Ave Unit 2C
Portland Oregon 97266
Tel. (503) 512-6780

Mailing and Billing
4110 SE Hawthorne Blvd. #190
Portland OR 97214
Tel. (503) 512-6780



Yakisugi "shou sugi ban" siding and paneling. Original unbrushed charred surface, suitable for exterior and interior use. Exterior grade finish is not generally suitable for commercial applications. Interior grade finish is suitable for high-traffic locations. Delivered ready to install.

Product does not shed soot after installation

Copy and Paste into Appropriate CSI Division

SECTION 06 26 00
CHARRED WOOD SIDING

Oil Prefinish Options Available

The SKU indicates surface and prefinish combination only. Please specify SKU together with dimensional profile and wood grade when ordering.

Interior Grade 3 Coats Polyurethane

SKU# NM1686 - BLACK

Exterior Grade 2 Coats Traditional Oil

SKU# NM1685 - EBONY

SKU# NM1602 - NATURAL

Phone +1-503-512-6780 • info@nakamotoforestry.com



4110 SE Hawthorne Boulevard #190, Portland Oregon 97214-5246 USA

121 OCEAN AVENUE | NEWPORT, RHODE ISLAND

FEBRUARY 18, 2020

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741 MOUNT AUBURN STREET, WATERTOWN MA 02472 T. 617-744-5187

NAKAMOTO FORESTRY

Surface & Texture

Suyaki is a surface with small to large crevasse patterns, variable from ¼"-1.5" wide rectangles. The soot layer is approximately 1/16" thick.

Wood Grade

Select - JAS "Small Knot" grade allows for up to 20 tight or 10 dead knots per 79" (2m) board length. Unlimited combination of heartwood and sapwood, pith allowed. Checks allowed to 1/16" as long as plank stability, weather-resistance, and cosmetics are not adversely affected.

Species

Cryptomeria japonica, a monotypic genus in the Cypress family native to Japan. The Japanese name is "Sugi" (as in yakisugi and shou sugi ban), and in the West it is colloquially known as "Japanese Cedar".

Moisture Content

Air dried then burnt to 11-14% MC, but may fluctuate during transport or warehousing. Please acclimate on site for two weeks prior to installation.

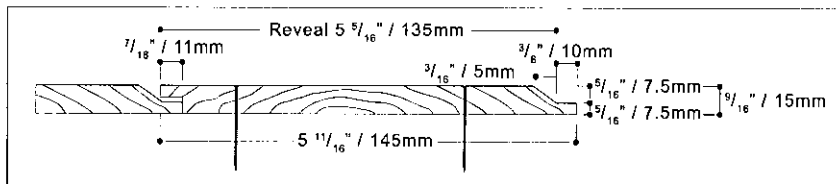
Fire Resistance

Suyaki tests to ASTM E84 and UL723 CLASS A Flame Spread and Smoke Developed with or without fire retardant. Species tests to CAN/ULC S102-10 FS of 25 and SDI of 60 without fire retardant. Fire retardant pretreatment not available for interior.

STANDARD SUYAKI 1X6 SHIPLAP DIMENSIONS

6 inches (150mm) nominal width

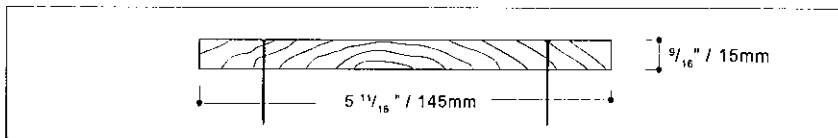
145 11/16 inches (3700mm) actual lengths



STANDARD SUYAKI 1X6 SQUARE EDGE DIMENSIONS

5 11/16 inches (145mm) actual width

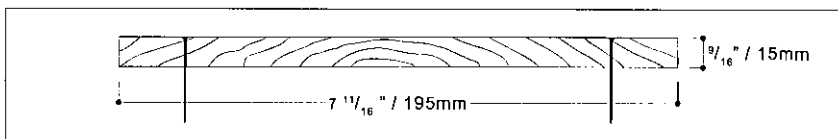
145 11/16 inches (3700mm) actual lengths



STANDARD SUYAKI 1X8 SQUARE EDGE DIMENSIONS

7 11/16 inches (195mm) actual width

145 11/16 inches (3700mm) actual lengths



*Dimensional shrinkage after manufacture is possible due to being a solid-sawn wood product.



SKY-FRAME INLINE.

EN



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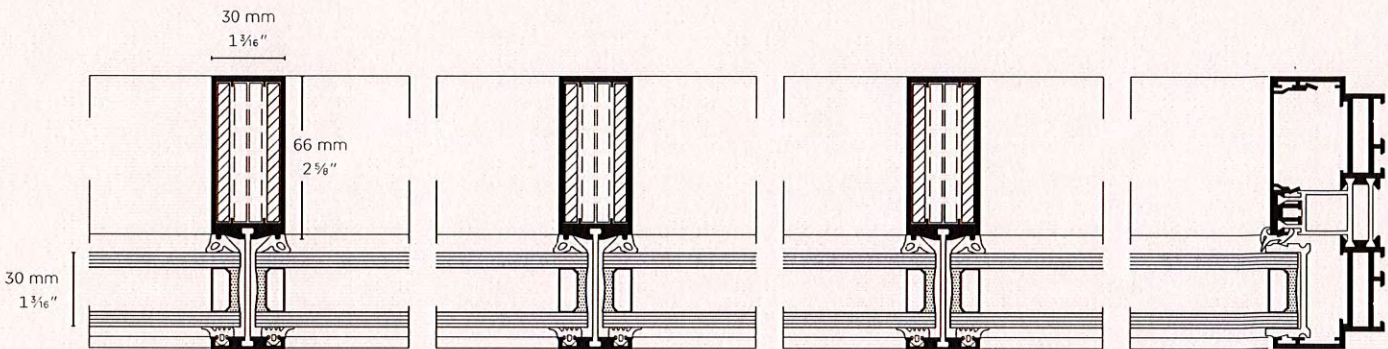
SKY-FRAME INLINE

FEATURE

The Sky-Frame system is supplemented by the filigree post, which has a minimal visible width of just 30 mm. Frameless fixed glass panels can therefore be combined with sliding doors over large areas, forming a flush, continuous glass membrane.

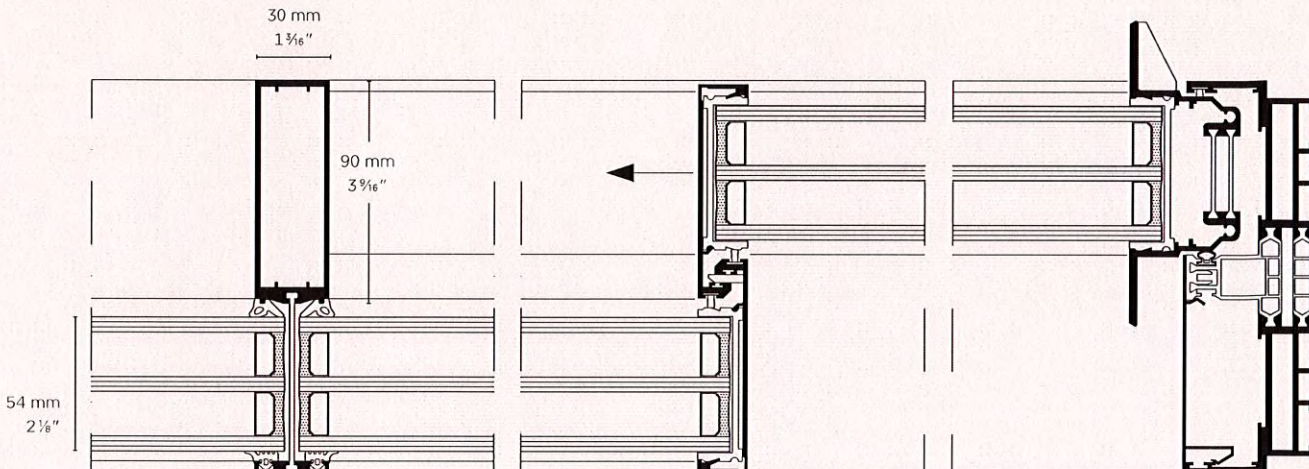
Sky-Frame 2

Example: double glazing



Sky-Frame 3

Example: glazing bar combined with sliding element



SKY-FRAME

PIVOT.



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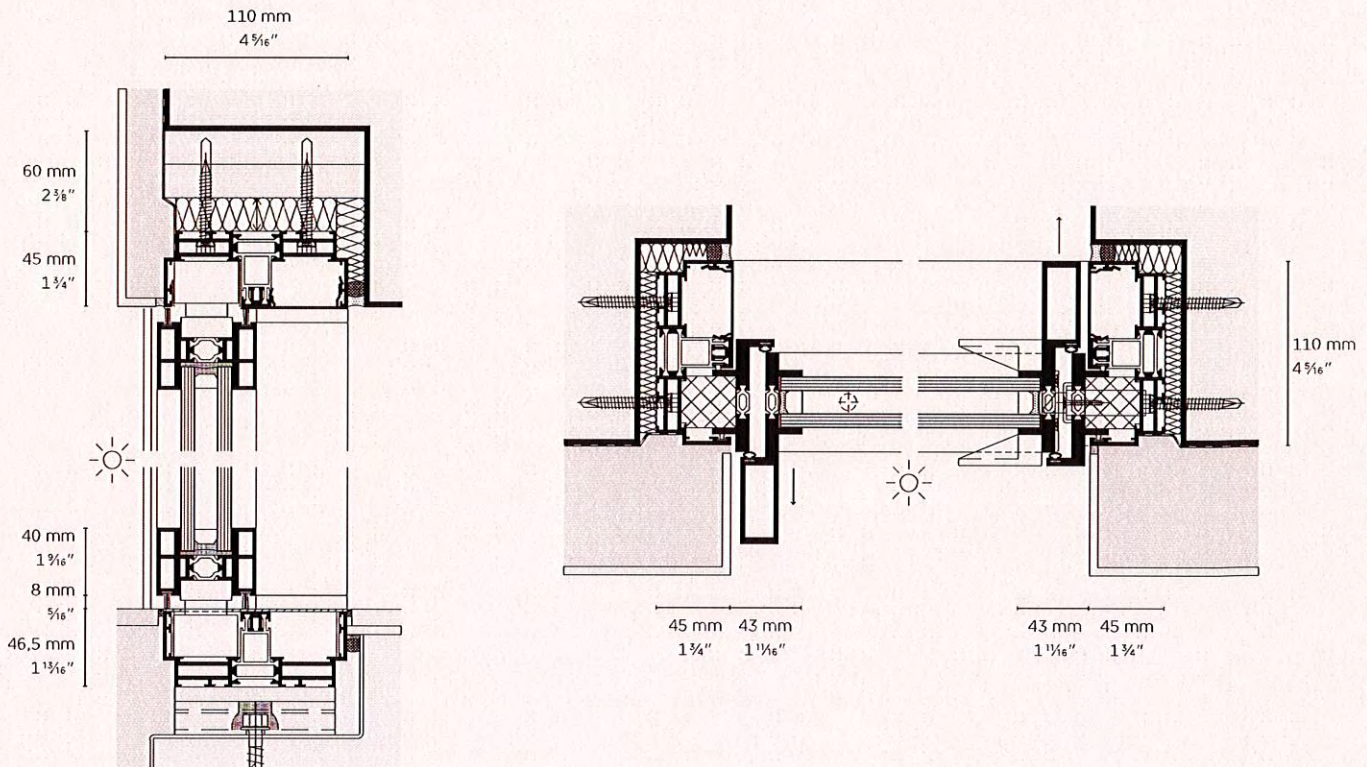
SKY-FRAME PIVOT

SYSTEM

The Pivot system makes opening a door a creative act: the doors swing around the point of rotation, which is centrally located, creating a temporarily spatial structure. This could also be the reason why Le Corbusier preferred these kinds of doors. With just a bit of pressure on the comfortable handle on the long side of the frame the door moves as if it were weightless. The electromechanical multipoint locking system ensures safety and security.

Vertical section

Floor and ceiling connection
(scale 1:5)





THERMALLY-BROKEN PERFORMANCE WITH NARROW SIGHT LINES

Whether it's the conversion of an industrial warehouse, a landmark building in a historic district or a tightly controlled University specification the combination of glazing flexibility, energy performance and narrow thermally broken profiles is a unique combination.

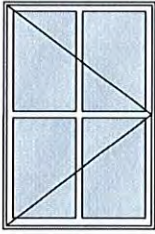
The profile face features widths from 1" to 1 9/16". The new cold rolled steel in combination with the glass fibre-reinforced high performance composite thermal-break results in minimal heat loss with superior strength and stability when compared to traditional hot rolled profiles. The 2 3/8ths inch deep frame accommodates

a wide range of glass specification flexibility without the need of special setup costs or profiles. Whether it is triple glazed, double glazed or combinations of thicker laminated glass & high performance glasses, the flexibility is unique in the steel window industry.

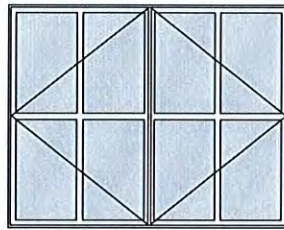
Steel-Arte is also a superior solution for luxury residential applications. The strength of the Steel-Arte coupled with the narrow profile design is a natural for window walls where the mullions are small and the minimal glass to glass dimension are critical to the clean, crisp geometric look of the aesthetic.



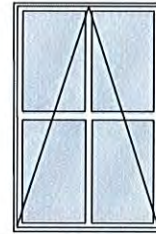
WINDOW ELEVATIONS



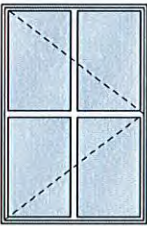
OUTSWING CASEMENT
VENTING OR FIXED CONFIGURATIONS



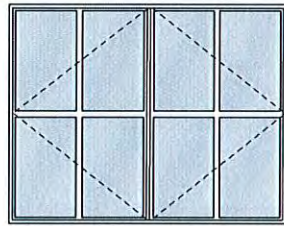
OUTSWING FRENCH CASEMENT



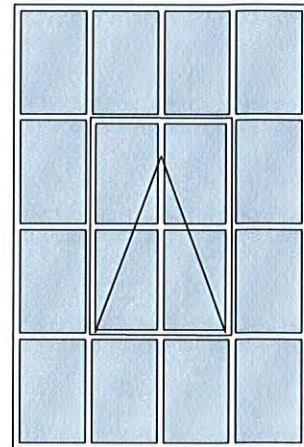
OUTSWING AWNING



INSWING CASEMENT
VENTING OR FIXED CONFIGURATIONS



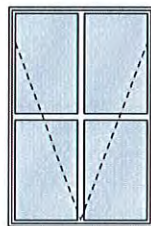
INSWING FRENCH CASEMENT



OUTSWING AWNING IN
WINDOW WALL



DIRECT GLAZED

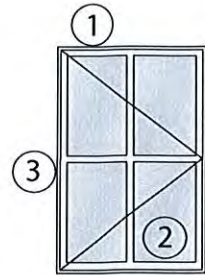


INSWING HOPPER

SECTIONAL DETAILS FOR EACH DESIGN IS INCLUDED IN THIS OVERVIEW. THESE ARE THE STANDARD DETAILS. FOR ADDITIONAL DESIGN FLEXIBILITY QUESTIONS CALL THE DYNAMIC SALES TEAM AT 1.800.661.8111

OUTSWING CASEMENT

MAX. VENTING DIMENSIONS: 31 1/2" X 63"
 CONFIGURATION: VENTING OR FIXED



OUTSWING CASEMENT

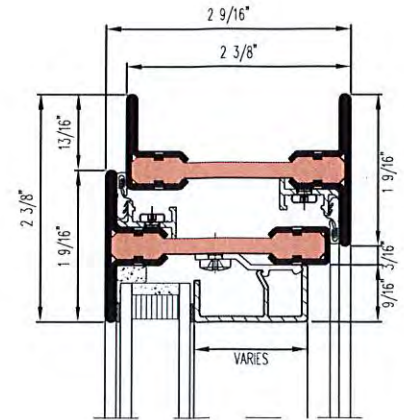
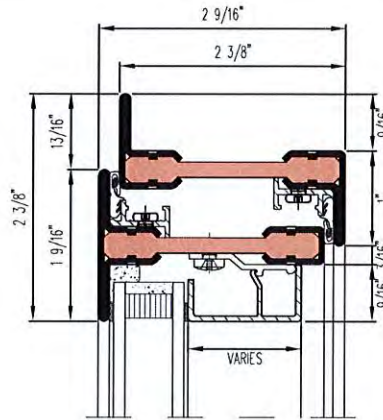
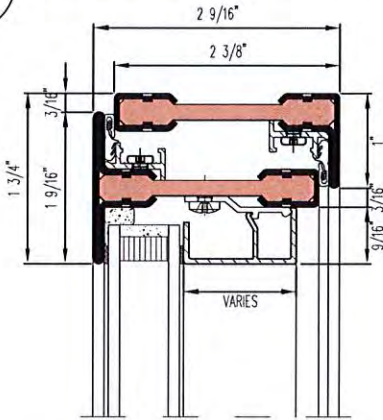
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Z PROFILE

H PROFILE

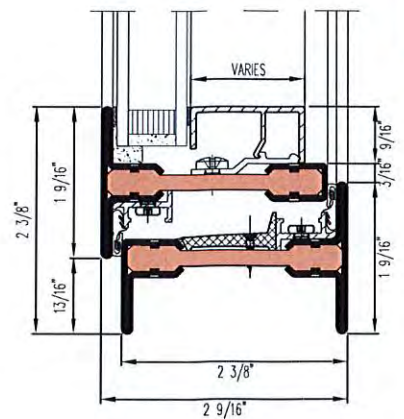
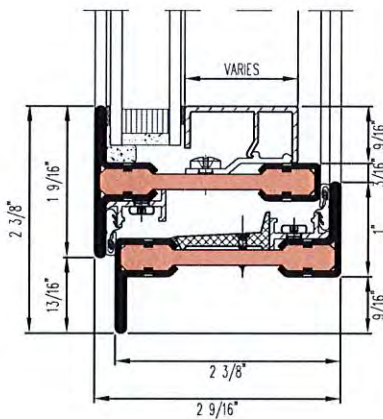
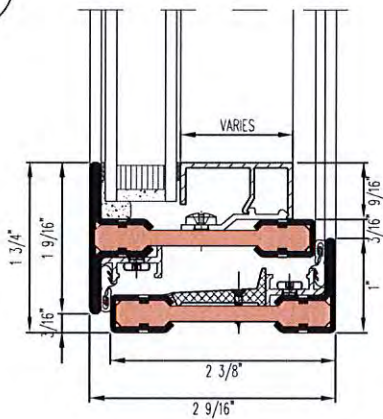
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HEAD DETAILS



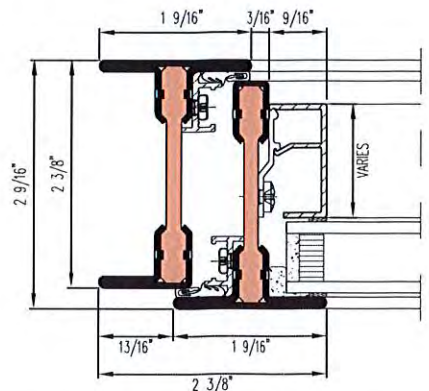
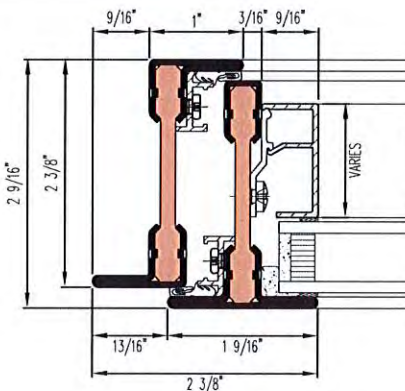
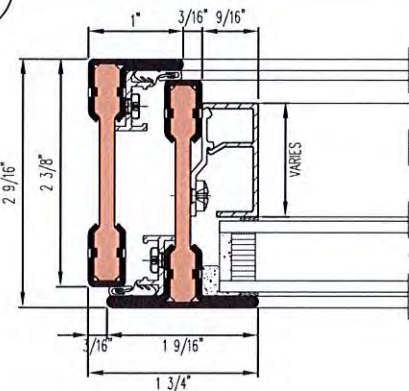
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SILL DETAILS



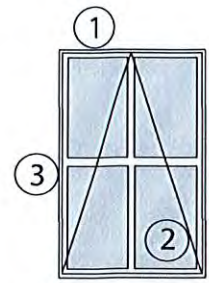
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JAMB DETAILS



OUTSWING AWNING

MAX. DIMENSIONS: 63" x 31 1/2"



OUTSWING AWNING

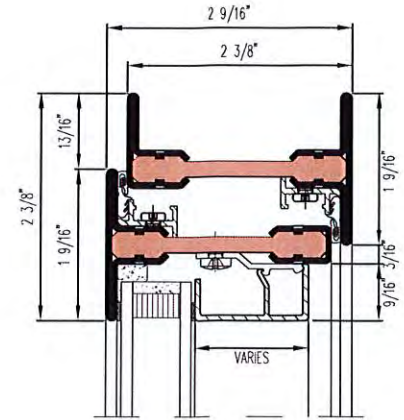
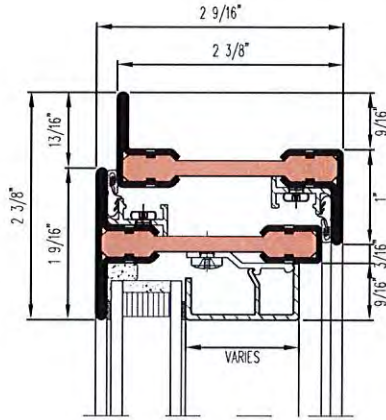
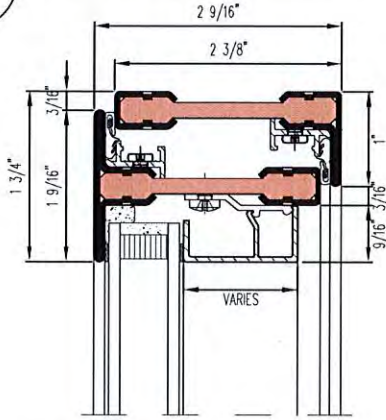
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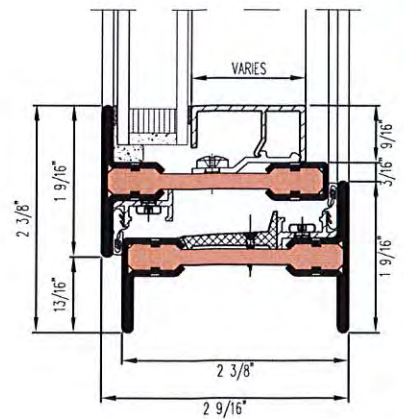
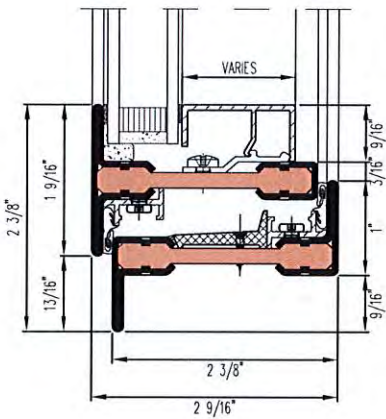
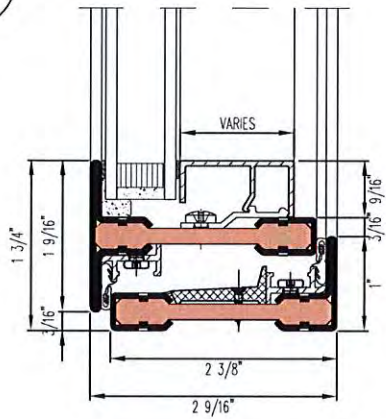
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HEAD DETAILS



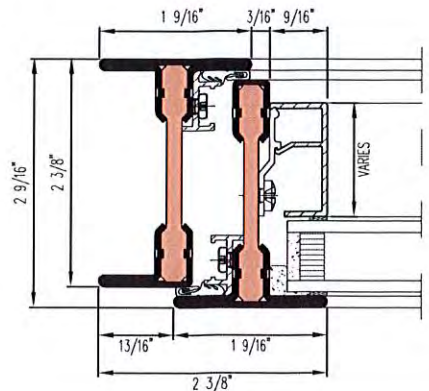
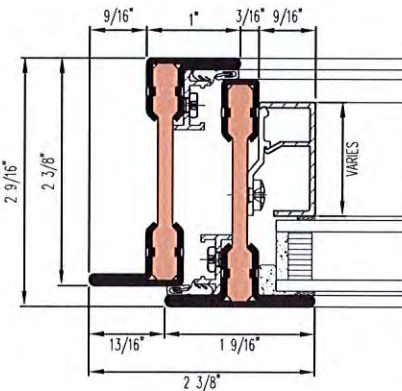
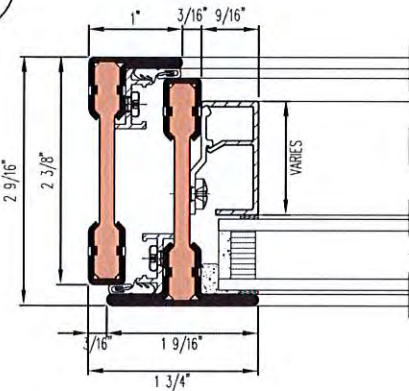
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SILL DETAILS



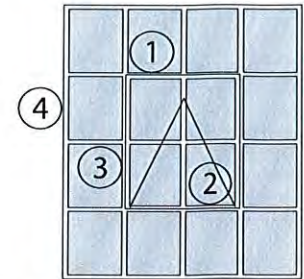
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JAMB DETAILS



OUTSWING AWNING IN WINDOW WALL

MAX. DIMENSIONS (AWNING): 63" x 31 1/2"



OUTSWING AWNING IN WINDOW WALL

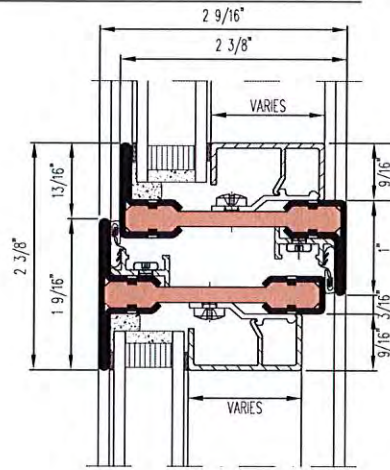
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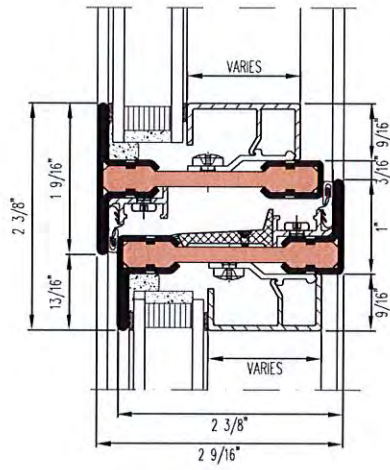
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AWNING HEAD DETAIL



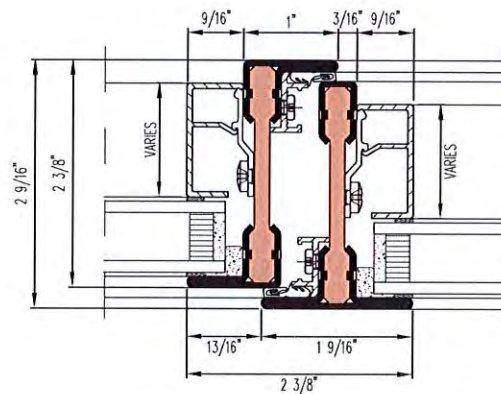
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AWNING SILL DETAIL



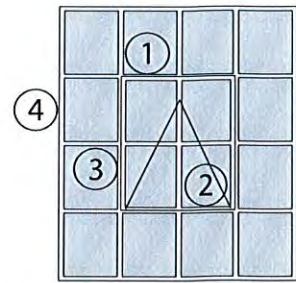
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AWNING JAMB DETAIL



OUTSWING AWNING IN WINDOW WALL

MAX. DIMENSIONS (AWNING): 63" x 31 1/2"



OUTSWING AWNING IN WINDOW WALL

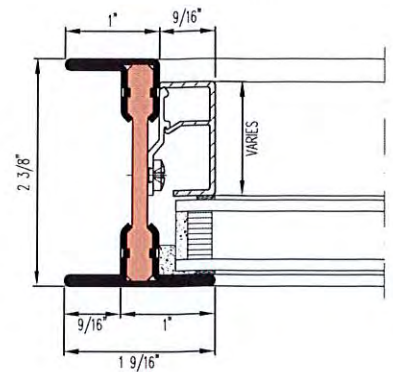
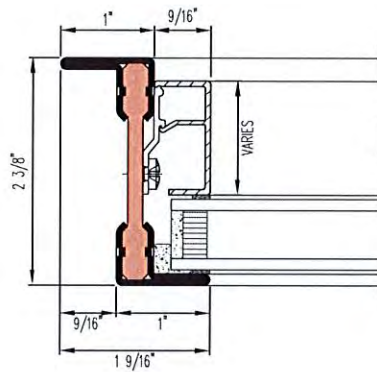
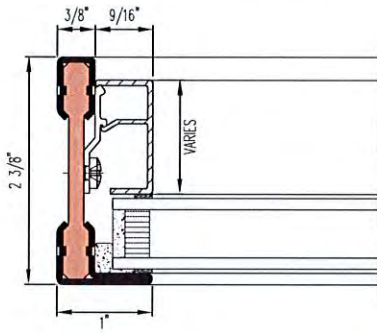
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4

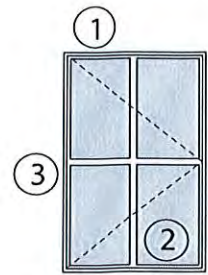
OUTSIDE JAMB DETAILS



INSWING CASEMENT

MAX. VENTING DIMENSIONS:
CONFIGURATION:

31 1/2" X 63"
VENTING OR FIXED



INSWING CASEMENT

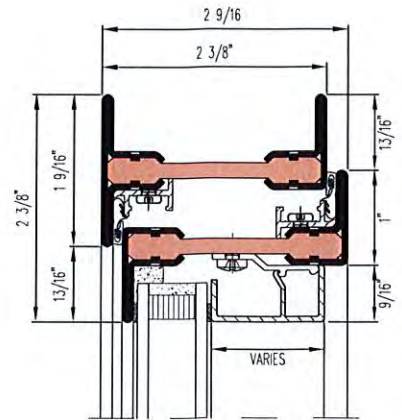
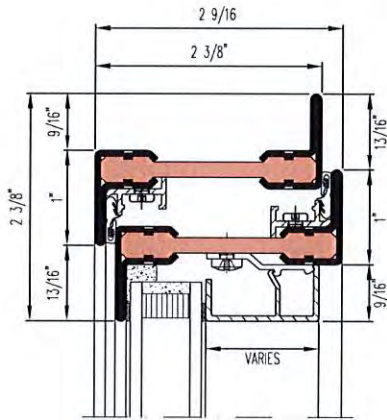
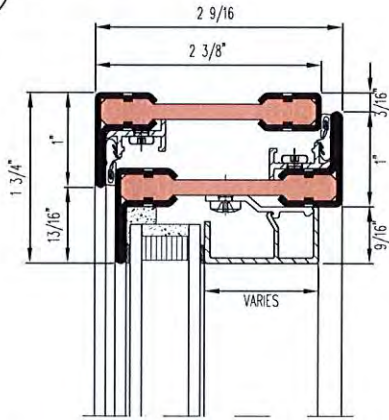
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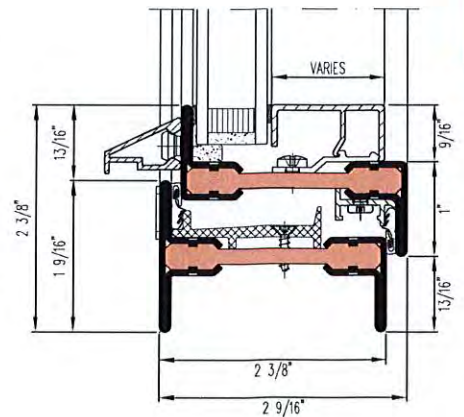
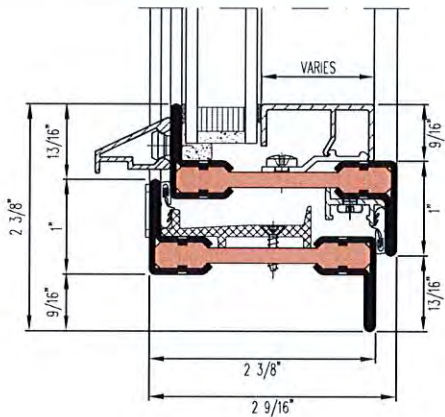
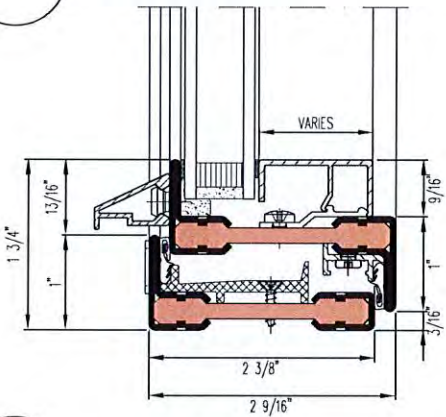
1

HEAD DETAILS



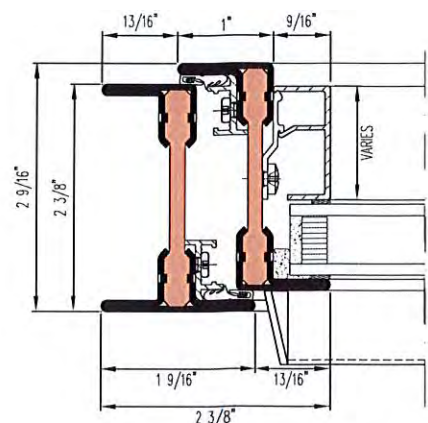
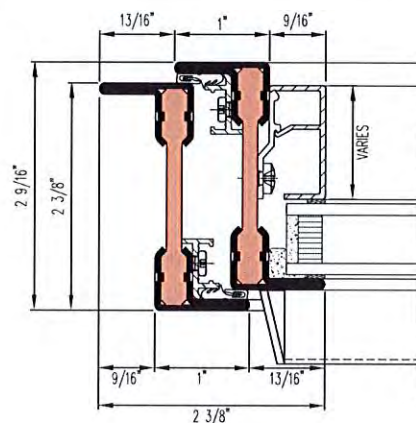
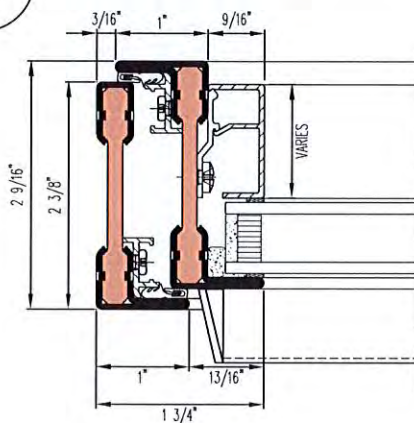
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SILL DETAILS



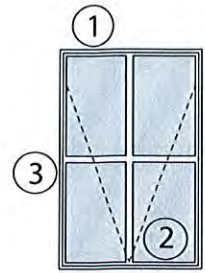
3

JAMB DETAILS



INSWING HOPPER

MAX. DIMENSIONS: 63" X 31 1/2"



INSWING HOPPER

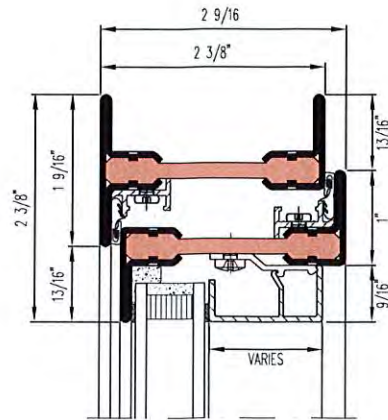
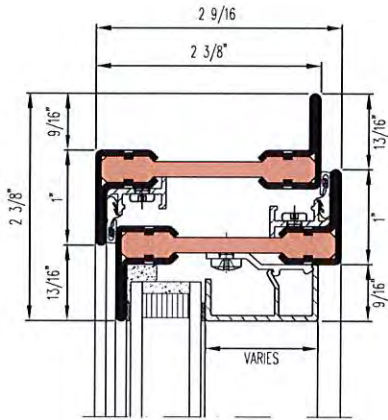
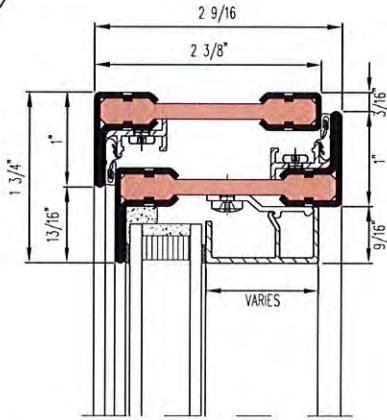
H PROFILE

L PROFILE

Z PROFILE

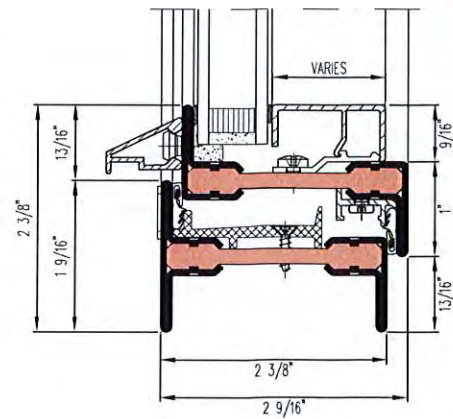
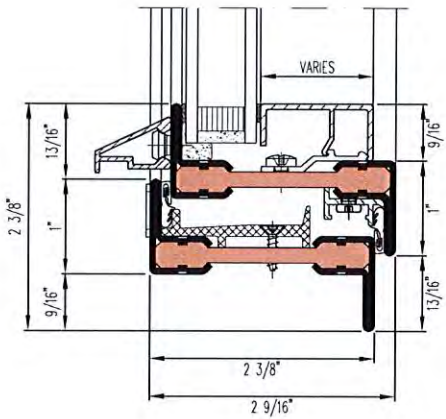
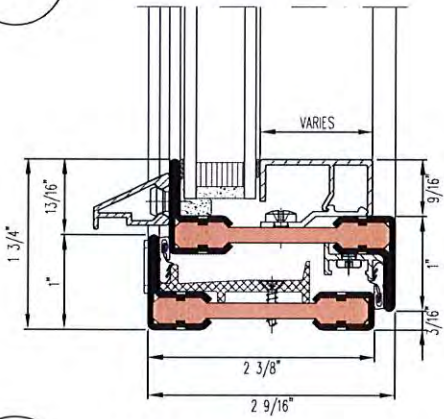
1

HEAD DETAILS



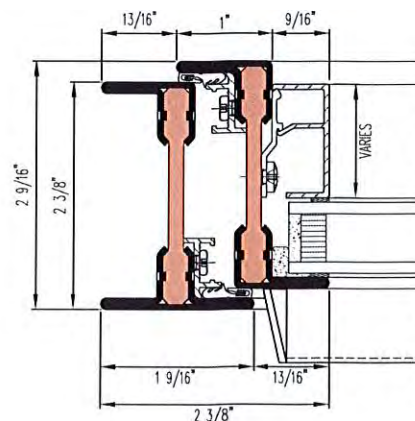
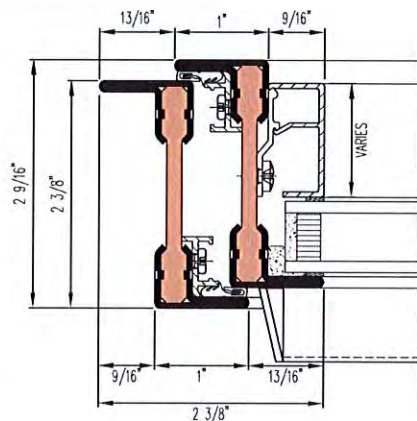
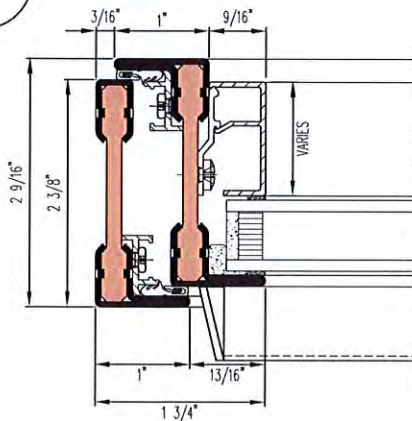
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SILL DETAILS

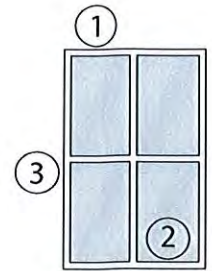


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JAMB DETAILS



DIRECT GLAZED



DIRECT GLAZED

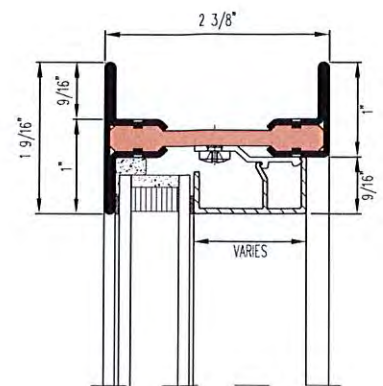
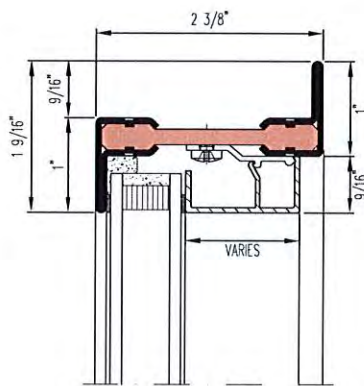
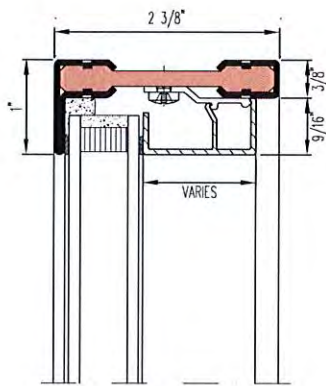
H PROFILE

L PROFILE

Z PROFILE

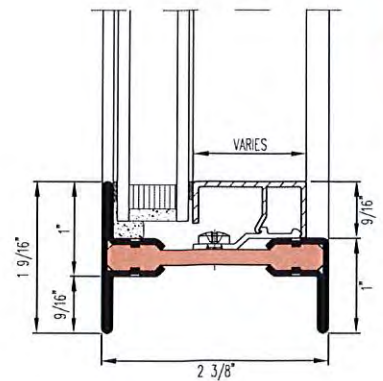
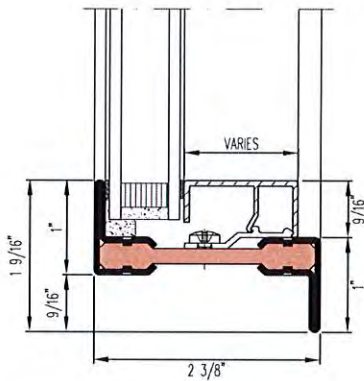
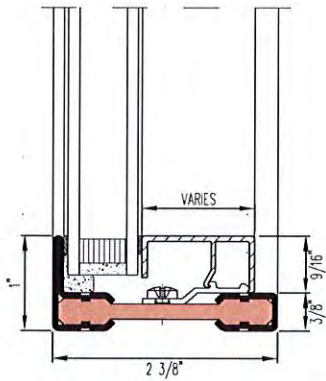
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HEAD DETAILS



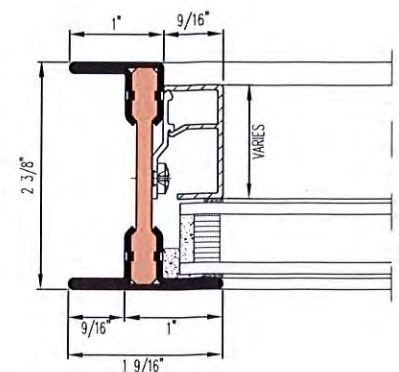
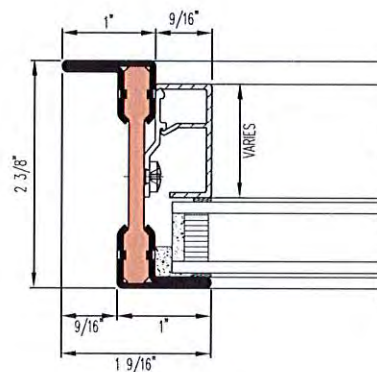
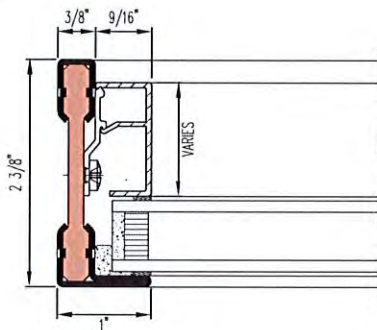
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SILL DETAILS



3

JAMB DETAILS



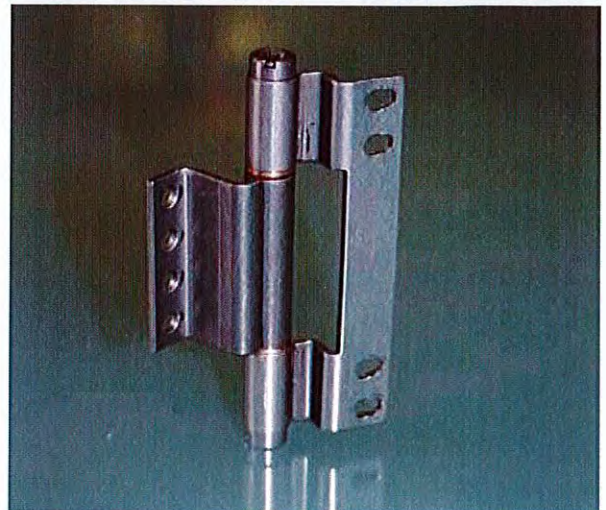
WINDOW HARDWARE OPTIONS

CASEMENT HINGE OPTIONS

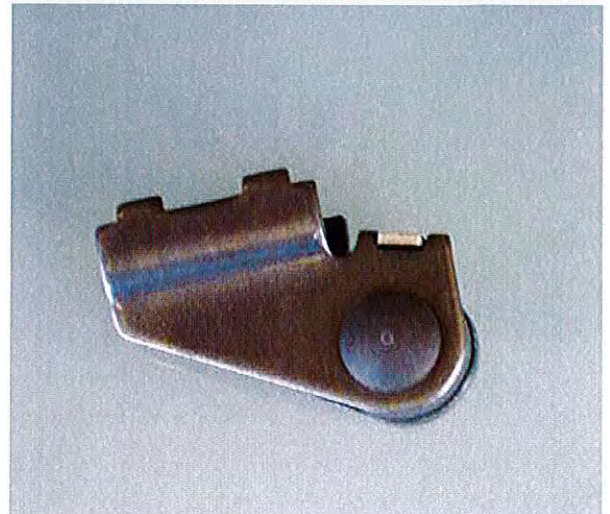
STEEL-ARTE CASEMENT WELDED HINGE



STEEL-ARTE CASEMENT SCREW-ON HINGE



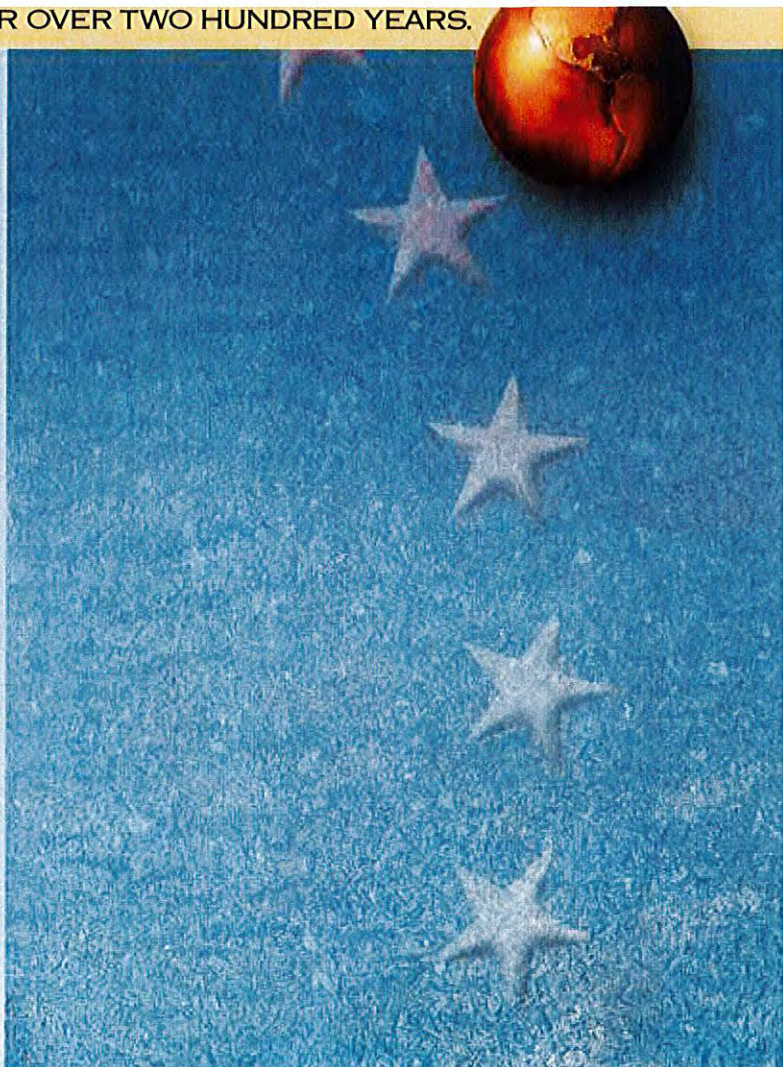
STEEL-ARTE CASEMENT EXTENDED HINGE



Freedom Gray[®]

Z-T Alloy™ Coated Copper

For durability, attractiveness
and environmental friendliness,
FreedomGray delivers.



Inside:

Technical Details

Installation

Handling

Specifications



121 OCEAN AVENUE | NEWPORT, RHODE ISLAND

FEBRUARY 18, 2020

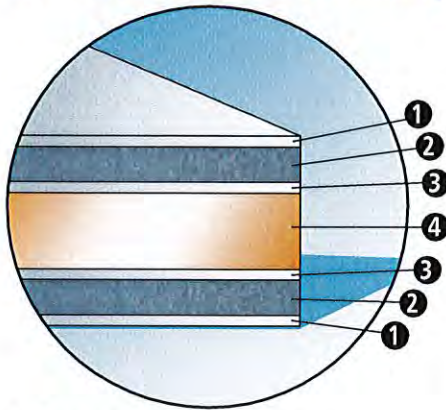
©MARYANN THOMPSON ARCHITECTS

741 MOUNT AUBURN STREET, WATERTOWN MA 02472 T. 617-744-5187

Revere FreedomGray®: Durable, attractive and easy on the environment.

Revere FreedomGray® is standard architectural sheet copper coated both sides with a unique, patented Z-T Alloy™ (tin-zinc alloy). It offers all the advantages of copper in a naturally weathering earthtone gray color. FreedomGray is rugged, environmentally friendly and aesthetically appealing, for use in virtually all architectural metal applications.

The four layers of FreedomGray



- ① Washcoat
- ② Tin/zinc alloy
- ③ Intermetallic layer
- ④ Copper (99.5% pure)

The tin-zinc alloy is applied to both sides of FreedomGray sheets and coils, using the hot-dip process. This ensures complete coverage and eliminates voids.

A pre-weathered (painted) finish is factory-applied to FreedomGray, to reduce initial reflectiveness, provide a natural, weathered appearance and minimize the possibility of "white rust" corrosion during storage and transit.

The paint is applied in a "semi-uncontrolled" manner to assure that some of the surface is covered and some is not. This may create noticeable variations between panels – non-uniform patterns, textures, lines or shading. The uncovered tin/zinc alloy begins to darken immediately upon exposure, while covered areas undergo little or no color transformation until the paint is removed through weathering.

It is important to understand that the paint is a transitional phase only. It is NOT FreedomGray's final color or aesthetics.

Over time, as weathering breaks down the paint and exposes the alloy, the initial differences fade away. Environmental conditions and severity of exposure dictate how long this will take. For roofs, most paint is usually removed within 12 to 18 months, while vertical wall panels may take longer.

As with plain and pre-patinated copper, there will always be differences in the shades and hues of FreedomGray's natural patina. These are NOT an indication of defective material. In many respects it is the variations that give FreedomGray its unique life, vitality and aesthetics.

FreedomGray vs. zinc: A revealing comparison.

When a durable gray architectural metal roof is called for, FreedomGray offers numerous advantages over zinc. Like all architectural copper, FreedomGray is easier to form, simpler to install and more durable in most environmental conditions.

These are the facts:

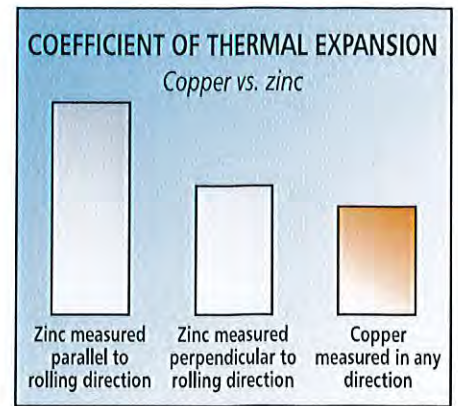
- **More versatile forming** – At temperatures below 45° F, zinc becomes brittle and may break or split when bent, formed or subjected to stress or loads. All coppers, including FreedomGray, can be formed, installed and subjected to sub-freezing temperatures with no adverse effects.

Sharp, zero-radius bends that are typical with all architectural metal work, can stress zinc to the point that it cracks or splits. Expansion movement caused by daily and seasonal temperature changes can aggravate minor splits and make them "run" or grow.

FreedomGray can be formed and installed with the same bends as plain copper.

- **Less restrictive installation** – Moisture on the reverse side of zinc can cause severe and rapid corrosion. In extreme conditions it can "rust through" in less than a year. To avoid this problem, the underside of zinc must be ventilated – installed above the roof deck. This difficult, costly installation is not necessary with copper, including FreedomGray, which can be applied directly over roof decks.

- **Greater durability** – Ice dams in valleys and along eaves are a common winter occurrence in much of the country. Water trapped behind these dams can (and does) penetrate locks and seams.

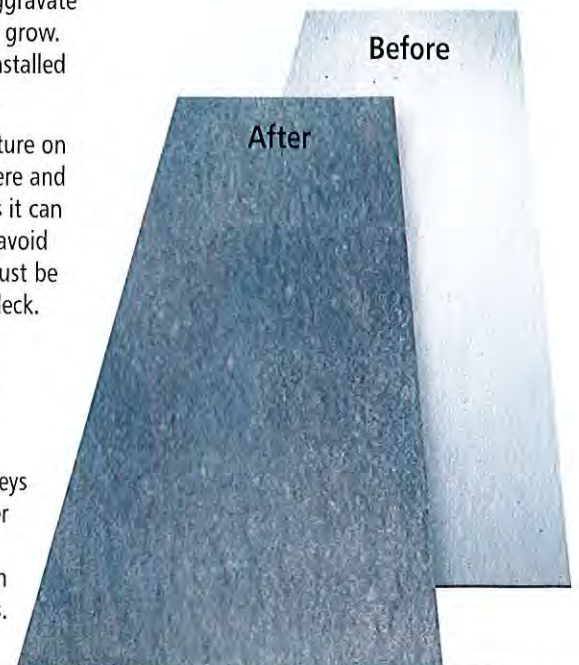


With zinc roofs, this can lead to "underside corrosion." Moisture trapped on the underside of copper, on the other hand, has no negative effects, making FreedomGray the better choice for long-term durability.

- **Physical properties** – Properties of sheet zinc (coefficient of thermal expansion, tensile strength, creep rate, etc.) depend upon temperature and direction of rolling. The above chart compares the coefficient of thermal expansion for zinc and copper.

- **Soldering** – Zinc anneals at 212° F and melts at 784° F. Standard solder begins to flow at 420° F. As a result, soldering changes the grain size of zinc (anneals it) and weakens it at the seam. If too much heat is applied, a hole can easily be burned through zinc.

The melting point of architectural copper is 1,981° F. At 700° F, it takes almost an hour for copper to begin to anneal. As discussed later, FreedomGray is soldered similar to plain copper.



In any environment, FreedomGray fits.

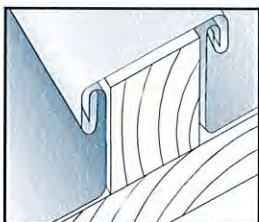
FreedomGray is appropriate for use in any application that would use copper or lead-coated copper. It may be used not only for roofs, but also to form most architectural accents, gutters, downspouts and other rainwater carriers.

Roofs and flashings using the patented tin-zinc alloy have been exposed to industrial, seacoast, urban and rural environments without failure. Salt spray, salt fog and other accelerated weathering tests have also had no adverse effects.

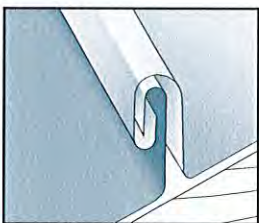
FreedomGray is a practical choice for today's environmentally conscious clients.

Installation Tips & Techniques

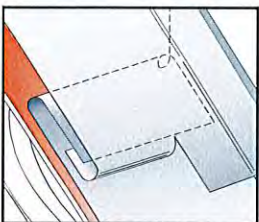
FreedomGray architectural copper is a premium product that requires little, if any, special handling.



Batten Seam Roofing



Standing Seam Roofing



Steep Pitch Transverse Seam

Forming

FreedomGray is installed using the same tools, machines and working techniques as with mill-finish copper. Forming is done in the same manner. The tin-zinc alloy will not crack or flake off tight bends (180 degrees). Portable pan forming machines are used, and bending and seaming are performed without any

special considerations. Double lock-standing seams are closed by hand or with a seaming machine. Cross joints are formed in the same manner as plain copper.

Cutting

Cutting FreedomGray with snips or shears does not cause burrs – a common problem with stainless steel – provided the snips or shears are sharp.



GAP Clothing – Mashpee, MA

Soldering

FreedomGray is soldered in a similar manner as plain copper; however, we recommend you consult our Revere Architectural Services Department for the most up-to-date soldering techniques.

1. Cleaning: To ensure good, strong soldered seams, it is necessary that FreedomGray is clean, bright and free of all oxides, washcoats, etc. Lacquer thinner may be used to remove the washcoat; oxidized metal should be wire-brushed to a bright condition. *The tin-zinc alloy should not be removed.*

2. Form locks: For proper strength, locks must be at least 3/4-inch wide.

3. Flux seam: Apply a tin-bearing flux such as "Flux-N-Solder E127 with pure tin," by Johnson Manufacturing, Princeton, Iowa (563-289-5123), to all surfaces to receive solder. This will greatly aid in soldering FreedomGray.

4. Apply heat and solder: All soldering should be done with heavy soldering coppers only (do not solder with open flame on metal). Coppers should weigh 6 to 10 pounds per pair except when gas-heated soldering torch is used. *For best results, use either pure tin solder OR lead-free, high-tin solders such as Number 497 by Johnson Manufacturing.*

5. Clean soldered seam: Thoroughly rinse soldered seam to remove all residual flux. Normally, flux need not be neutralized if sufficient clean water is used to remove all residues.

Pre-tinning FreedomGray is usually not required.

However, if pre-tinning is desired or necessary to effect a completely sweated seam, use the same solder as will be used for the seam.

Drainage

A minimum positive drainage of 1/8" per foot should be provided for flat seam roofing to avoid water staining.

Handling Considerations

Compatibilities

FreedomGray's tin-zinc alloy is basically inert, allowing it to be used with most other architectural metals. When in doubt, contact Revere's Technical Advisory Service for answers about the nobility and electrochemical potential of certain metals.

In most environments and applications, FreedomGray will not stain other materials below it. However, drips and overhangs should still be designed to minimize water staining.

If desired, FreedomGray may be painted without altering its physical properties.

Inorganic acids, including hydrochloric acid, can damage FreedomGray. Care should be taken to protect against run-off from acid-leaching substances, overspray from masonry cleaners (muriatic acid), etc.

All commonly available underlayments may be used with FreedomGray. Before installing FreedomGray over fire-retardant treated lumber, consult with Revere and the lumber treater.

For safety, Revere always recommends the use of gloves and eye protection whenever handling any architectural metal

Specifications

Architectural Guide Specifications

Revere FreedomGray™ is cut, bent, formed and installed using the same tools and techniques as with mill-finished copper. Complete details and specifications for the installation of architectural sheet copper are contained in the Revere manual Copper & Common Sense.

Materials: Sheet Copper

All sheet copper shall be standard, ounce-weight copper conforming to ASTM specification B370.

Where FreedomGray coated copper is specified or noted on the drawings, copper shall be coated both sides with zinc/tin alloy approximately 0.5 mils thick. Composition of the alloy shall be approximately 50-percent zinc and 50-percent tin with trace elements controlled for durability, corrosion resistance and color.

The Z-T Alloy shall be applied by the hot-dip process. All Z-T Alloy coated copper shall have temporary, degradable pre-weathered coating to minimize water-stains during transit and storage and provide initial weathered appearance.

Solder

Where used on Z-T Alloy coated copper, solder shall conform to ASTM specification B32 and shall be pure tin OR lead-free, high-tin.

Workmanship: Handling & Storage

Store FreedomGray coated copper sheets, coils and formed shapes off the ground, in an enclosed structure. Do NOT store in a manner or location so that the water or moisture may remain between sheets or shapes prior to installation. Do NOT store on bare ground under a tarp or in other manner that may cause condensation to form on or between sheets or shapes.

Handle sheets and shapes in a manner to reduce scratches, dents, etc.

COMMENTARY

In the absence of oxygen, standing water may cause water-stains. Water-stains and surface scratches should not affect the life or durability of FreedomGray; however, they can be aesthetically unattractive.

Soldering

Before soldering Z-T Alloy coated copper, the pre-weathered coating must be removed and surfaces to receive soldering chemically and/or mechanically cleaned to produce clean, bright alloy.

COMMENTARY

To ease soldering, a tin-bearing flux may be applied to all surfaces to receive solder.

Installation

Except as noted elsewhere, form and install FreedomGray as noted on the drawings and in the same manner as described for plain copper in Revere's sheet copper design manual Copper & Common Sense, latest edition.

Protection

FreedomGray shall be protected during installation and cleaning of masonry with tarps, polyethylene sheeting, or similar impervious materials. To prevent water stains due to condensation trapped on metal's surface, protection must be removed at the end of each workday.

Cleaning

Remove excessive dirt and construction debris by washing thoroughly with clear water. Grease, oils, etc., may be removed by washing with alkaline commercial cleaning agent in hot water. Do not otherwise chemically or mechanically clean FreedomGray.

Available Forms:

Types Sheets and coils

Weights 16-oz.; 0.0216" thick
20-oz.; 0.027" thick

Temper H00- cold rolled

Stock sizes 36"x120"x16oz. sheets
36"x120"x20oz. sheets
250 lin. ft. coils of 20"
and 24" wide, 16oz.

Note: Other sizes and corresponding lead times available on request

Ordering Information:

Price

FreedomGray is priced at a premium above Revere's *Classic Copper* finish. Contact your local Revere distributor for prices and lead times.

Minimum order quantity

One standard case or coil.

Availability

Through Revere sheet copper distributors throughout the United States, Canada and South America.

FreedomGray Warranty

Revere warrants that, for a period of 25 years after delivery, FreedomGray will comply with the written specifications accepted by Revere and will be free of defects in workmanship and materials. Call Revere for complete warranty details.

Technical Guidance

If you have questions or concerns about the use of FreedomGray on a particular project, please call (800) 448-1776, ext. 2474 or ext. 2707.

Do NOT use FreedomGray

- 1) Below plain or pre-patinated copper.
- 2) In areas subject to impingement (e.g., in areas where water falls off a higher roof onto FreedomGray)
- 3) In areas of concentrated or abrasive flow (such as in valleys on slate or tile roofs)
- 4) Below or next to fire retardant treated (FRT) lumber, including FRT cedar shingles and siding.

Cautionary Uses:

- 1) Interior applications where the pre-weather Paint may be objectionable and/or will not Break down and allow natural weathering of the Tin/zinc alloy.
- 2) Soffits and similar "protected" applications where weathering will be extremely slow (if at all)

Copper & Common Sense

Since 1945, Revere has published **Copper & Common Sense**, which is now the industry's most widely referenced sheet copper design manual. To learn how to obtain the latest edition, call, fax, or e-mail Revere at the address below.



Revere Copper Products, Inc.

One Revere Park, Rome, NY 13440-5561
1-800-448-1776 Fax: 315-338-2105
www.reverecopper.com e-mail: archcopper @
reverecopper.com

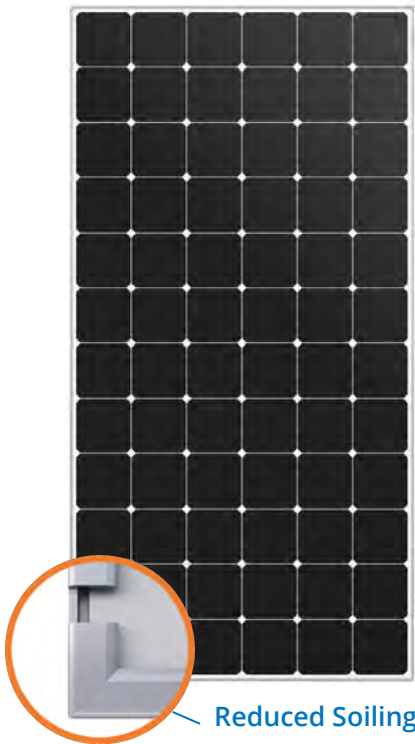
FreedomGray is a trademark of Revere Copper Products, Inc. Z-T Alloy is the registered trade name for Follansbee Steel's patented zinc/tin alloy and the method of applying it to architectural copper.



430–450 W Commercial A-Series Panels

SunPower® Maxeon® Technology

SunPower® Maxeon® cell-based panels maximize energy production and savings by combining industry-leading power, efficiency, and durability with the best power, product, and service warranty in the industry.^{1,2}



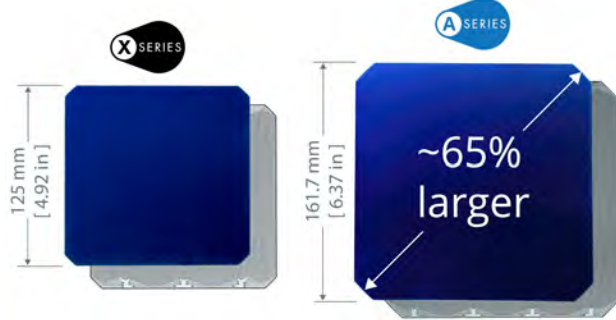
Reduced Soiling

NEW drainage notch improves performance

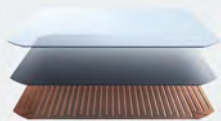


Highest Power Density Available

SunPower's new Maxeon® Gen 5 cell is 65% larger than prior generations, delivering the most powerful cell and highest efficiency panel in commercial solar. The result is more power per square meter than any commercially available solar.¹



SUNPOWER MAXEON SOLAR CELL TECHNOLOGY



Fundamentally Different. And Better.

- Most efficient cell in commercial solar²
- Delivers unmatched reliability³
- Patented solid metal foundation prevents breakage and corrosion

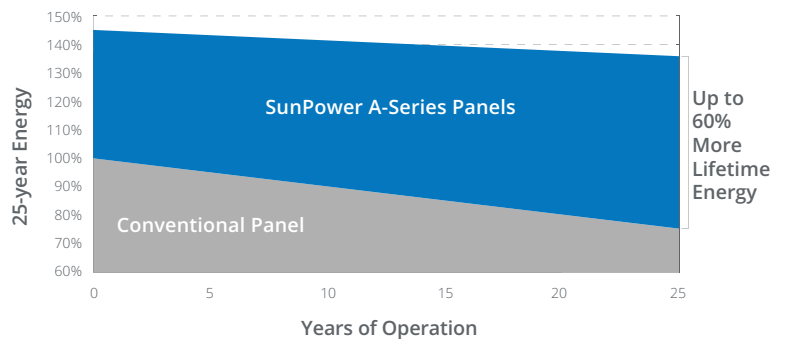
As sustainable as the energy it produces.

- Achieved the #1 ranking on the Silicon Valley Toxics Coalition's Solar Scorecard for 3 years running
- SunPower modules can contribute to your business's LEED certification⁴



Maximum Lifetime Energy and Savings

Designed to deliver up to 60% more energy from the same space over the first 25 years in real-world conditions like partial shade and high temperatures.¹



Best Reliability, Best Warranty

SunPower technology is proven to last and we stand behind our panels with the industry's best 25-year Combined Power, Product and Service Warranty.

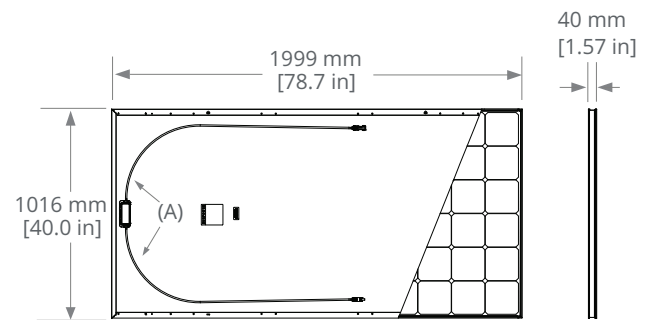


430–450 W Commercial A-Series Panels

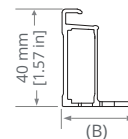
Electrical Data			
	SPR-A430-COM	SPR-A440-COM	SPR-A450-COM
Nominal Power (P _{nom}) ⁵	430 W	440 W	450 W
Power Tolerance	+5/0%	+5/0%	+5/0%
Panel Efficiency	21.2%	21.7%	22.2%
Rated Voltage (V _{mpp})	42.7 V	43.4 V	44.0 V
Rated Current (I _{mpp})	10.1 A	10.2 A	10.2 A
Open-Circuit Voltage (V _{oc})	51.2 V	51.6 V	51.9 V
Short-Circuit Current (I _{sc})	10.9 A	10.9 A	11.0 A
Max. System Voltage	1500 V UL		
Maximum Series Fuse	20 A		
Power Temp Coef.	−0.29% / ° C		
Voltage Temp Coef.	−136 mV / ° C		
Current Temp Coef.	5.7 mA / ° C		

Tests And Certifications	
Standard Tests	UL1703
Quality Management Certs	ISO 9001:2015, ISO 14001:2015
EHS Compliance	OHSAS 18001:2007, lead free, Recycle Scheme
Ammonia Test	IEC 62716 (Pending)
Desert Test	MIL-STD-810G (Pending)
Salt Spray Test	IEC 61701 (maximum severity) (Pending)
PID Test	1500 V: IEC 62804
Available Listings	UL, CEC

Operating Condition And Mechanical Data	
Temperature	−40° F to +185° F (−40° C to +85° C)
Impact Resistance	1 inch (25 mm) diameter hail at 52 mph (23 m/s)
Appearance	Class A
Solar Cells	72 Monocrystalline IBC cells
Tempered Glass	High-transmission tempered anti-reflective
Junction Box	IP-68, TE (PV4S)
Weight	47.7 lbs (21.6 kg)
Max. Load	Wind: 75 psf, 3500 Pa, 357 kg/m ² front & back Snow: 125 psf, 6000 Pa, 612 kg/m ² front
Frame	Class 2 silver anodized



FRAME PROFILE



(A) Cable Length: 1320 mm +/-10 mm [52 in +/-0.4 in]

(B) Long Side: 32 mm [1.3 in]

Short Side: 24 mm [0.9 in]

Please read the safety and installation guide.

1 SunPower 450 W, 22.2% efficient, compared to a Conventional Panel on same-sized arrays (310 W, 16% efficient, approx. 2.0 m²), 4.9% more energy per watt (based on PVsyst pan files for avg US climate), 0.5%/yr slower degradation rate (Jordan, et. al. "Robust PV Degradation Methodology and Application." PVSC 2018).

2 Based on search of datasheet values from websites of top 20 manufacturers per IHS, as of January 2019.

3 #1 rank in "Fraunhofer PV Durability Initiative for Solar Modules: Part 3". PVTech Power Magazine, 2015. Campeau, Z. et al. "SunPower Module Degradation Rate," SunPower white paper, 2013.

4 A-Series panels additionally contribute to LEED Materials and Resources credit categories.

5 Standard Test Conditions (1000 W/m² irradiance, AM 1.5, 25° C). NREL calibration Standard: SOMS current, LACCS FF and Voltage.

See www.sunpower.com/company for more reference information.

For more details, see extended datasheet: www.sunpower.com/solar-resources. Specifications included in this datasheet are subject to change without notice.

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