

# FORTINA™

**BN**

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Fortina Battens used in direct application both horizontally and vertically, as well as on Stringers as a canopy. Finish in Maquillage Elm W.

# **FORTINA**

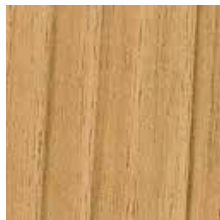
**is a remarkable architectural system that will fool your senses: replicating wood slats and Battens with aluminum**

**and a hyper-realistic non-pvc surface. The combination of these materials makes the collection perfect for "green" building. The large collection of finishes have a touch and feel that is indistinguishable from real wood. It dramatically enhances environments with the benefits of lighter weight, less cost, less waste, easier installation, as well as more consistent color and finish than real wood. Because of the materials and highly-controlled manufacturing process, Fortina For B+N can be used in both interior and exterior situations such as walls, ceilings, screens, and countless other applications. With a variety of installation hardware, Fortina facilitates installation and shortens project construction times while bringing the warm look and feel of wood to the project.**

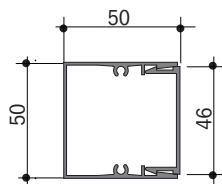
# The Fortina Quick Ship Program

Manufactured domestically, our Quick Ship Program has been revamped to meet your urgent project needs. With a lead time of just 72 hours, you can count on fast delivery of our Fortina battens. Our Quick Ship program offers four profiles and five finishes, making it easier than ever for designers and specifiers to meet tight deadlines. Whether you're working on interior or exterior installations, we have you covered.

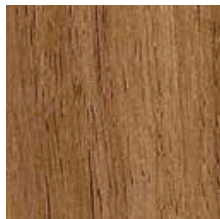
Combine any of the below profiles and finishes to expedite your project with Fortina.



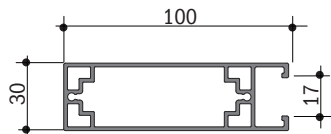
**TA-758**  
Vent Walnut N



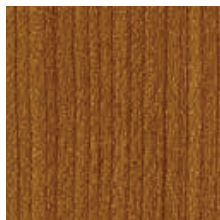
50mm x 50mm Louver  
Available in 20 ft. lengths  
Application: Direct



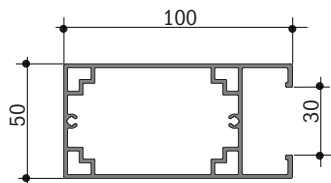
**TA-647**  
Earl Walnut M



30mm x 100mm Louver  
Available in 12 ft. lengths  
Applications: Stringer, Floor-to-Ceiling and Direct



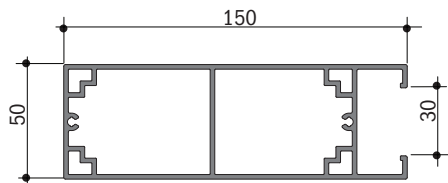
**TA-532**  
Cherry Line M



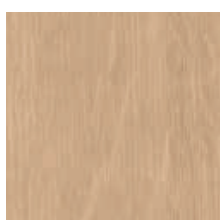
50mm x 100mm Louver  
Available in 12 ft. lengths  
Applications: Stringer, Floor-to-Ceiling and Direct



**TA-775**  
Carina Elm D



50mm x 100mm Louver  
Available in 12 ft. lengths  
Applications: Stringer, Floor-to-Ceiling and Direct



**TE-SN2035\***  
Axis Oak N



\*TE-SN2035 is suitable for interior only.

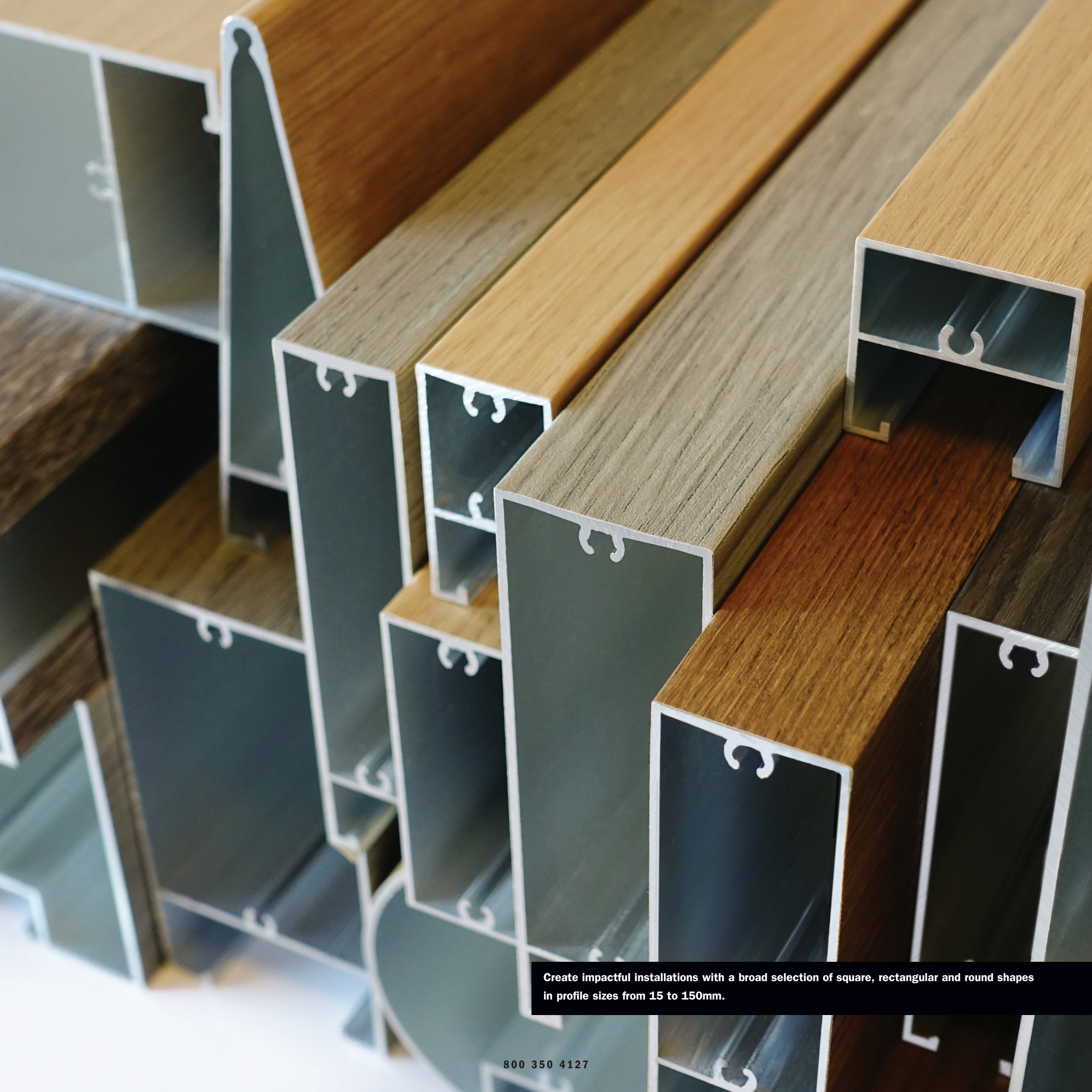


THS-5015 in TA-532 Cherry Lime M at the Marion Fire Station Headquarters.



**Battens are wrapped in an extremely durable non-PVC film. These films replicate real wood veneers with an astounding realism, indistinguishable from real wood but with a consistency and durability beyond actual timber.**






Create impactful installations with a broad selection of square, rectangular and round shapes in profile sizes from 15 to 150mm.

800 350 4127





**Kauppa keskus Plaza, Salo, Finland. Architect: Suunnittelutoimisto Ameriikka Oy.  
Fortina Batten: THS-5015. Finish: TA-026 White Elm Neo**



Fortina Battens. Here in Elm finish with painted Endcaps.



The Capitol Hotel Tokyu. Lobby walls with Direct Attachment Fortina Battens in Rokko Cedar





**Griffin Club Los Angeles. Batten: THS-50125. Finish: TA-758 Vent Walnut N.  
Architect: CCY Architect.**



**NYAKERS** Swedish  
Gingerbread  
Tins  
There is no cookie that says "Christmas in Sweden"  
more than traditional Pepperkaker. Made with real  
pepper, they're crunchy and spicy flavor  
is a delicious holiday treat.







Cost Plus World Market - Brooklyn, NY. Batten: THS-5015. Finish: TE-720 Novel Birch L.





UVU Center for Autism - Orem, Utah. Batten: THSN-5050. Finish: TE-905 Long Valley Maple.





Mudd Library, Northwestern University. Batten: THS-3015. Finish: TE-836 Raffine Cherry M and clear anodized.

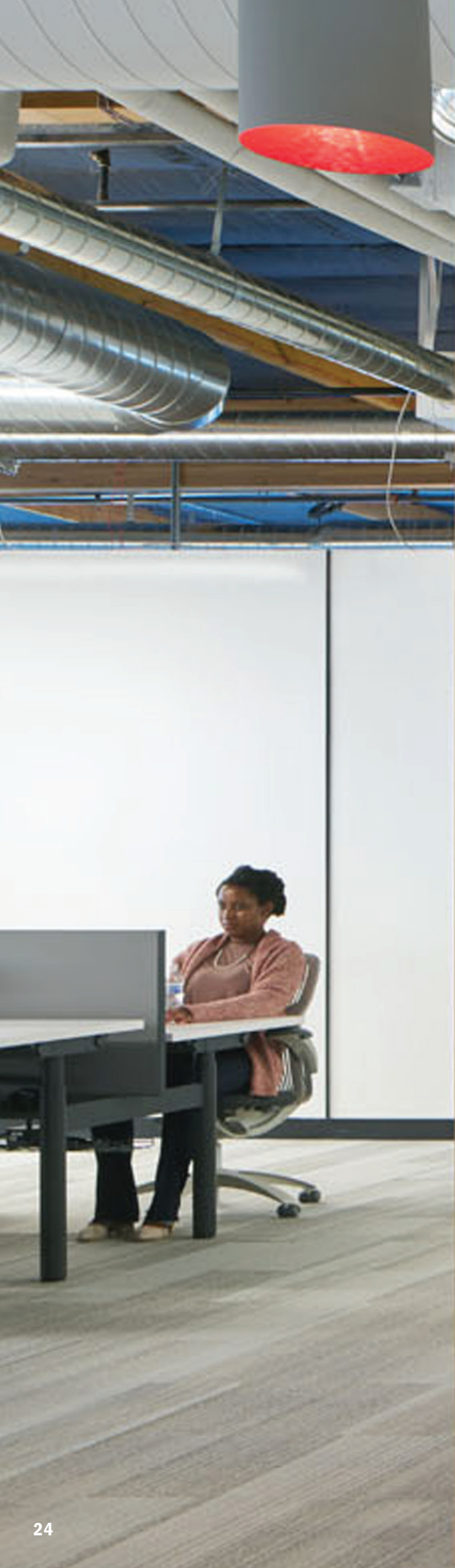




GLORIA  
BREVIS EST

HONOR  
LONGA

Northland Controls. Batten: THS-5015. Finish: TE-2036 Axis Oak.







Northland Controls. Batten: THS-5015 and THS-7575. Finish: TE-2036 Axis Oak.





160 E Tasman Dr, San Jose, CA. Batten: THS-50125. Finish: TA-758 Vent Walnut N.





**Fortina ceiling at Toppan Headquarters in Tokyo uses triangular THV-3512 Battens in TE-216 Persian Walnut W . Stringer installation.**





2236 S Barrington Ave, Los Angeles. Architect: Shubin + Donaldson. Batten: THS-2010. Finish TA-009 Aging Metal.

ACE

The Kit And Ace stores use two different profiles of Fortina Battens as both interior ceiling and wall applications, as well as an exterior facade. Interior finish is TE-770 Modesty Birch, exterior finish is TA-004 Rocco Cedar. Battens: THS-2010 and THS-1040.

PULL









Fortina is mounted on the ceiling and walls with an interlocking backrail system.  
Batten: TLKS-5010, finish: TE-882 Norte Oak L.



Paola Lenti used Fortina Battens to create a semi-private garden pavilion, and also to screen the building in the background. Fortina Battens in TA-808 Vent Walnut finish.

© TOPPAN REALAZIONI - PAOLA LENTI 2016





A serene garden pavilion by Paola Lenti at Fuorisalone Milan. Fortina Battens in Vent Walnut finish.

© TOPPAN REALAZIONI - PAOLA LENTI 2016

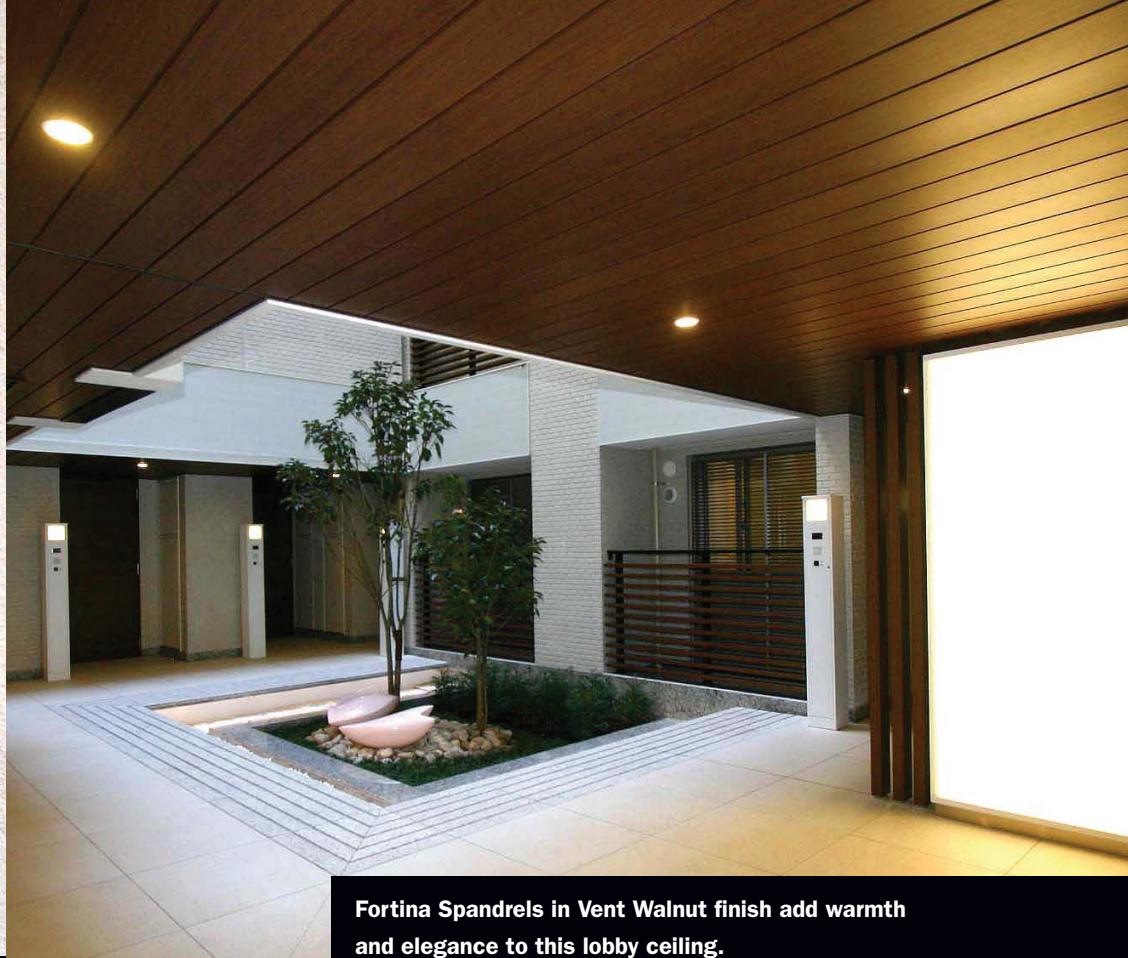


Dramatic evening lighting at Paola Lenti + Toppan. Fortina Battens in Vent Walnut finish.



A complex stepping-down of Fortina Battens with dramatic lighting on this office lobby interior. All in Moving Pear .





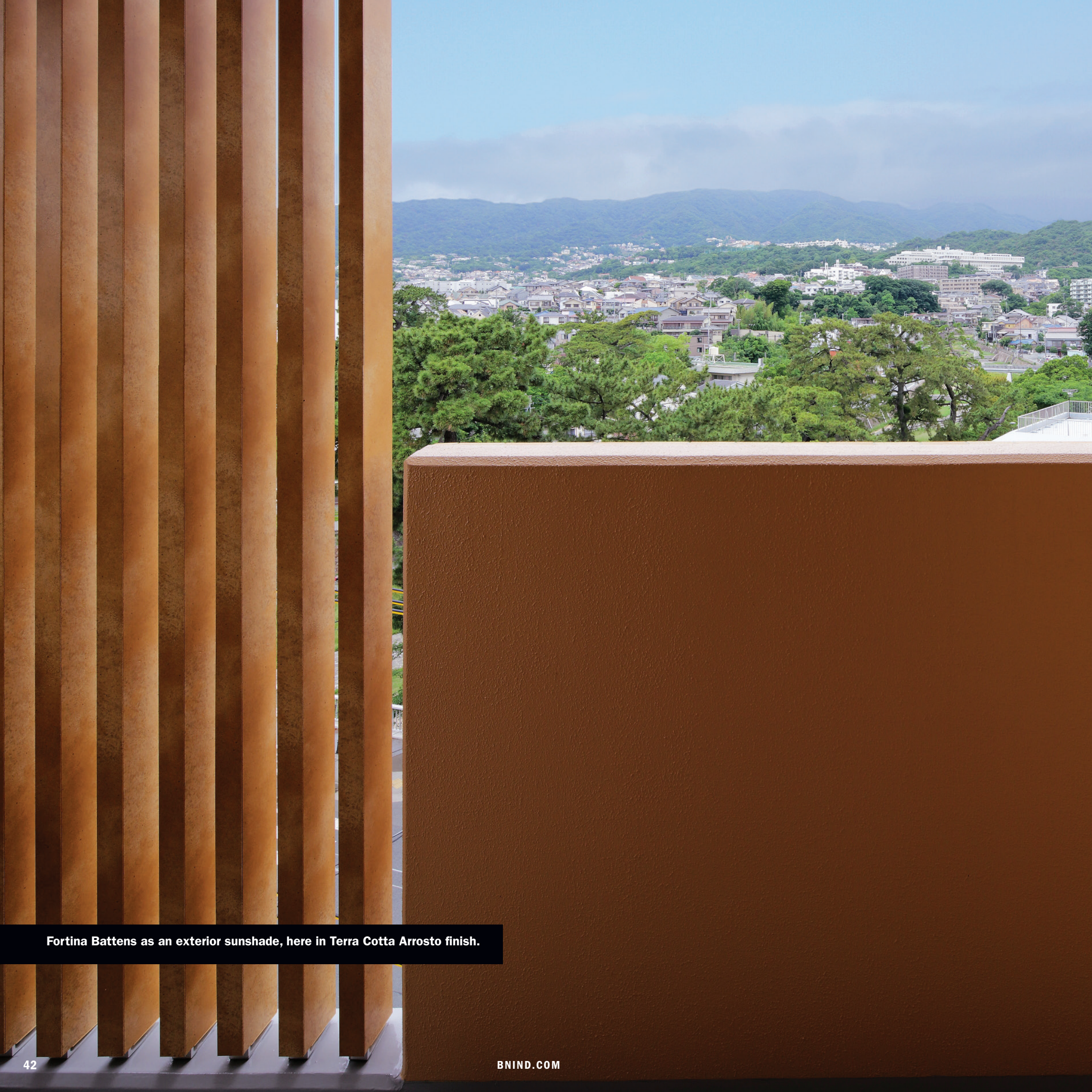
Fortina Battens can be stacked for a more solid play of forms and back-lit. Here in Vintage Walnut finish.

Fortina Spandrels in Vent Walnut finish add warmth and elegance to this lobby ceiling.



Fortina Battens as an interior sunshade, here in Vintage Walnut finish.

Adding Fortina Battens to interior or exterior walls and ceilings is an inexpensive way to change and enhance the drama of natural light. Here, Rokko Cedar finish at an exterior entrance canopy.



Fortina Battens as an exterior sunshade, here in Terra Cotta Arrosto finish.



Even when installed on large commercial building, Fortina offers a consistent expression with ease of installation that can shorten construction time. Here in Vintage Walnut.

This exterior focal wall is made up of 4 different size Fortina Battens in the same finish to create a corrugated three-dimensional look. All in Vent Walnut finish.

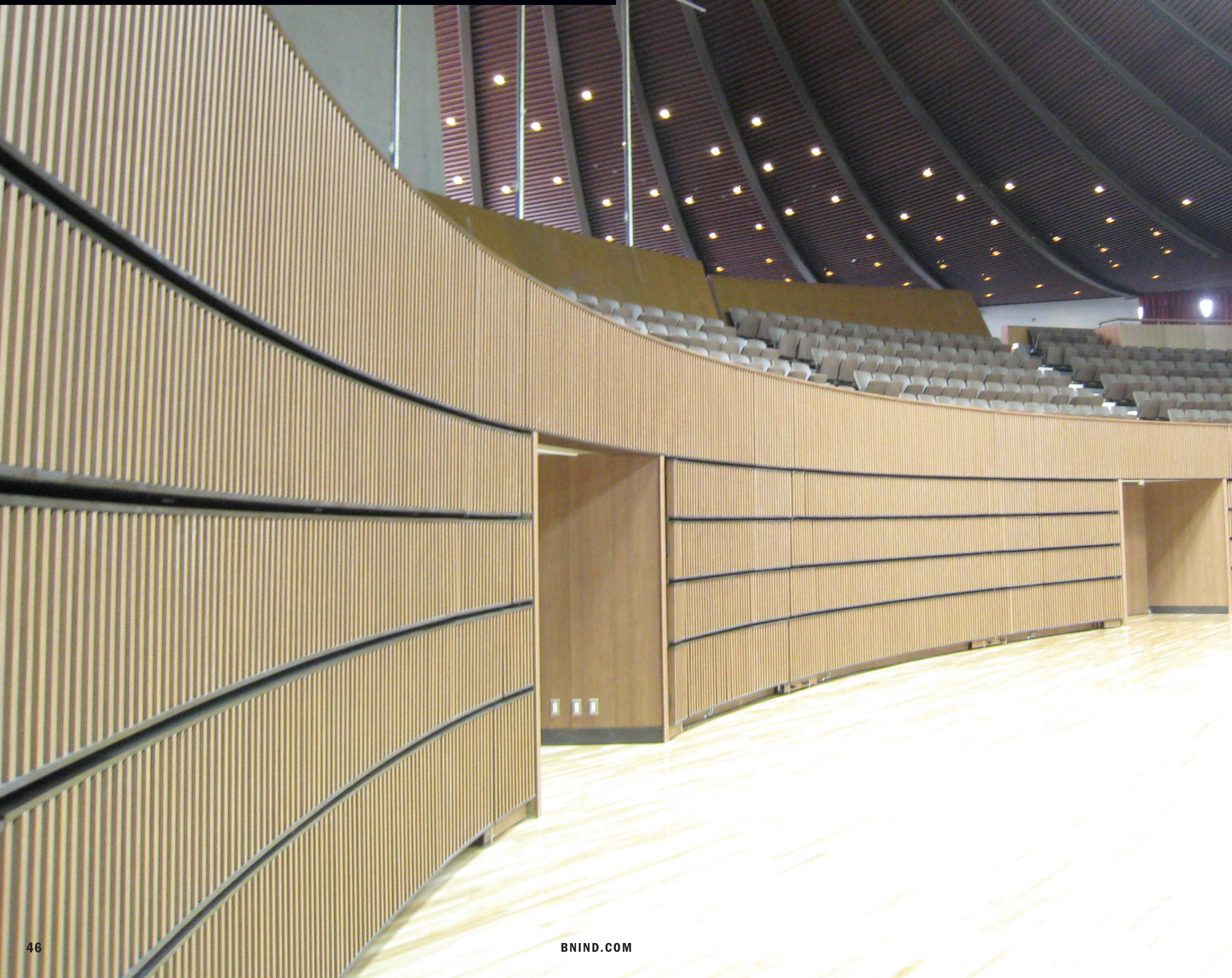
# *THE GRAN* *SUITE ROOM*

ND

GREEN

A WEDDING

At this sports arena, the original design called for real wood Battens. The Architect changed to using Fortina Battens and reduced project's installation and lead time considerably, resulting in significant cost savings. Here in Primary Oak finish.





**A dramatic entrance with a complex ceiling design made completely with Fortina, lifts this ceiling to a higher aesthetic. All in Raffine Cherry finish.**



A playful, yet elegant, ceiling in this transit station uses slats in Vent Walnut, Prime Teak, and Norte Oak finishes. Custom flooring is made to match.





West



Fortina Spandrels can adapt to ceiling lighting installations. Here in Blossom Birch Finish.

# Interior Finishes

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



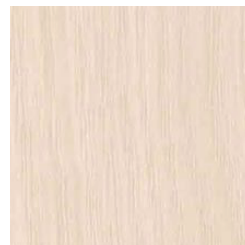
**TE-SN2015**  
Crema Chestnut CW



**TE-SN710**  
Crema Cedar



**TE-SN2065**  
Sklira Ash W



**TE-SN2014**  
Crema Chestnut FW



**TE-SN2084**  
Brook Willow W



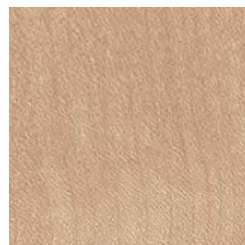
**TE-SN2080**  
Marble Wood W



**TE-SN2063**  
Brilas Wood W



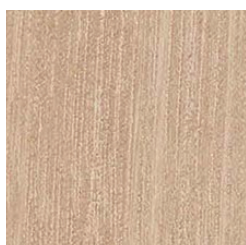
**TE-SN947**  
Madras Walnut W



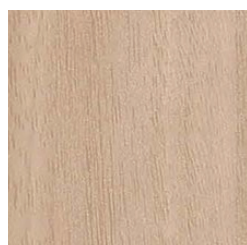
**TE-SN2052**  
Stylish Maple N



**TE-SN940**  
Abel Oak N



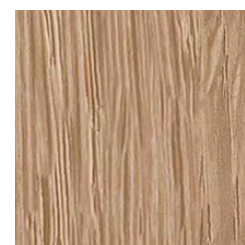
**TE-SN2025**  
Maquillage Elm TG



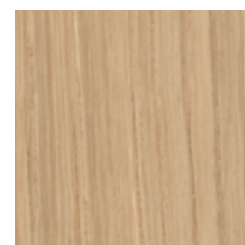
**TE-SN2055**  
Revlon Wall W



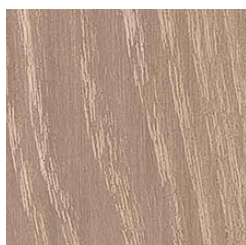
**TE-SN2035**  
Axis Oak N



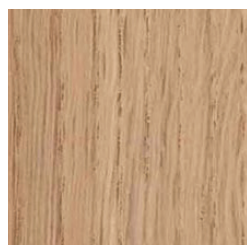
**TE-SN2053**  
Frettare Oak N



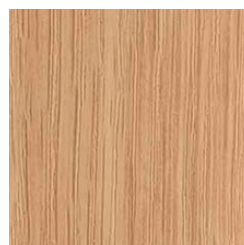
**TE-SN2073**  
Pulito Oak N



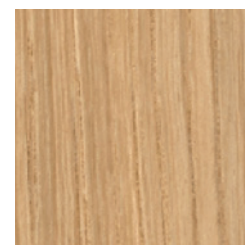
**TE-SN2058**  
Legacy Ash G



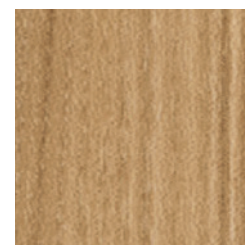
**TE-SN901**  
Alba Oak



**TE-SN882**  
Norte Oak L



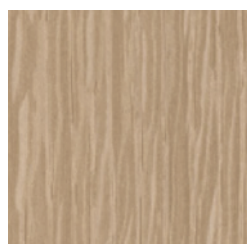
**TE-SN2074**  
Pulito Oak L



**TE-SN2098**  
Humming Elm N



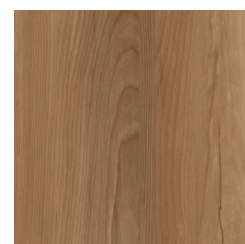
**TE-SN2099**  
Humming Elm G



**TE-SN2087**  
Thermos Oak LG



**TE-SN941**  
Abel Oak MC



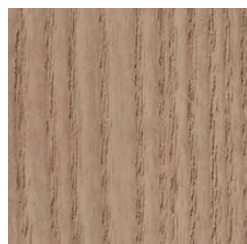
**TE-SN2105**  
Sieg Birch G



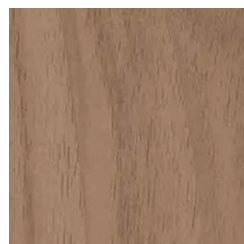
**TE-SN2075**  
Pulito Oak G



**TE-SN2060**  
Tendre Walnut LG



**TE-SN2066**  
Scrilla Ash G



**TE-SN2039**  
English Walnut G



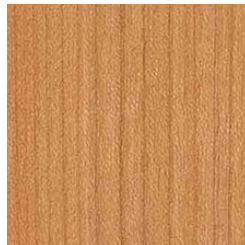
**TE-SN2095**  
Saloon Eucalyptus G



**TE-SN2033**  
Autumn Chestnut



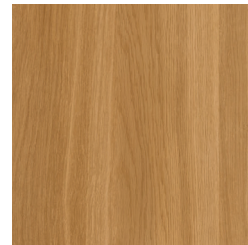
**TE-SN2036**  
Axis Oak L



**TE-SN835**  
Raffine Cherry L



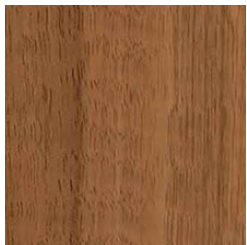
**TE-SN2104**  
Sieg Birch N



**TE-SN 2100**  
Diera Oak N



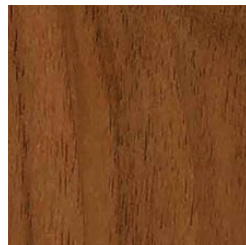
**TE-SN2103**  
Ars Cherry M



**TE-SN2067**  
Lindo Acacia M



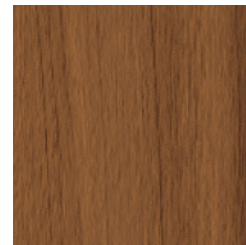
**TE-SN2068**  
Lindo Acacia LB



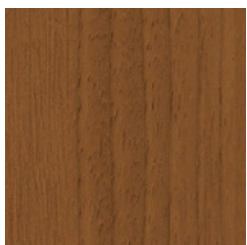
**TE-SN2017**  
English Walnut M



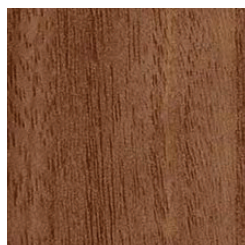
**TE-SN2038**  
Stretta Teak M



**TE-SN2090**  
Allegro Cherry M



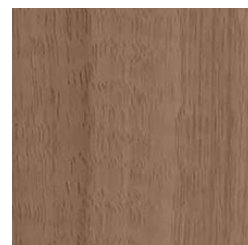
**TE-SN2078**  
Iris Noche M



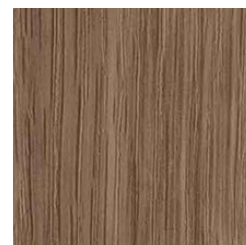
**TE-SN2056**  
Revlon Wall M



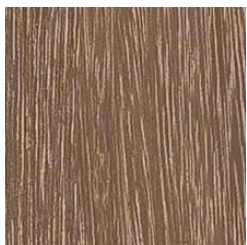
**TE-SN2106**  
Plage Tineo B



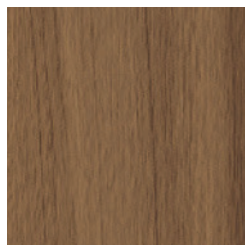
**TE-SN2069**  
Lind Acacia G



**TE-SN883**  
Norte Oak G



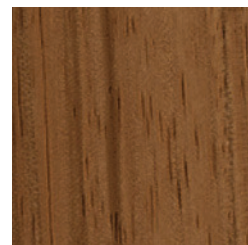
**TE-SN2022**  
Chalked Sucupira SG



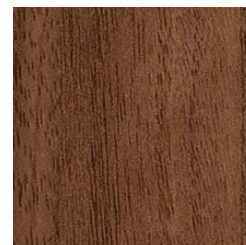
**TE-SN2091**  
Allegro Cherry G



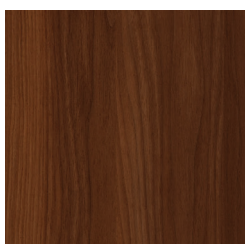
**TE-SN2085**  
Ligne Cedar G



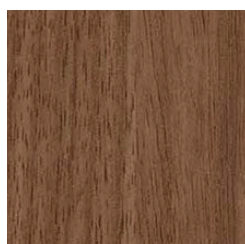
**TE-SN2094**  
Variowood M



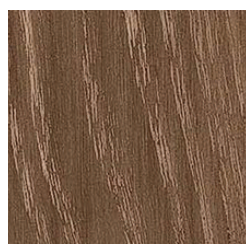
**TE-SN2057**  
Revlon Wall B



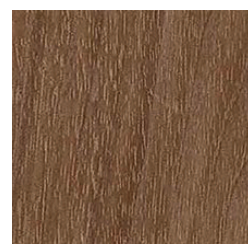
**TE-SN2101**  
Canaletto Walnut D



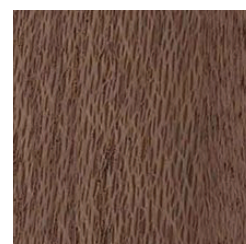
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Bliss Walnut B



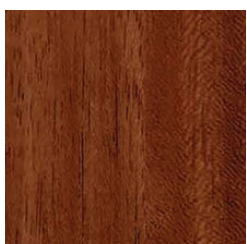
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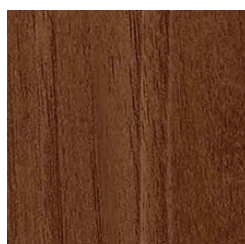
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Tendre Walnut MG



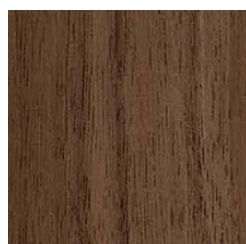
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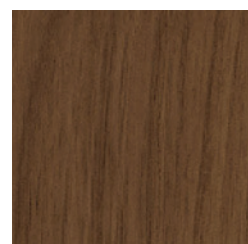
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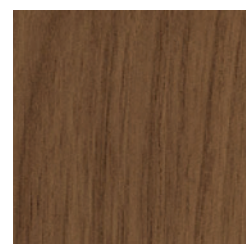
**TE-SN2050**  
Symphony Walnut B



**TE-SN948**  
Madras Walnut DG



**TE-SN2093**  
Agile Walnut B



**TE-SN2092**  
Agile Walnut M

# Interior Finishes

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



**TE-SN2088**  
Thermos Oak MG



**TE-SN2018**  
English Walnut B



**TE-SN2077**  
Vintage Oak MG



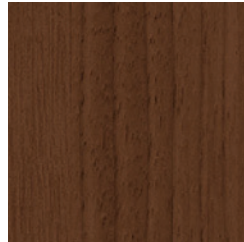
**TE-SN2096**  
Saloon Eucalyptus B



**TE-SN2089**  
Thermos Oak D



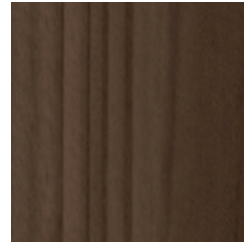
**TE-SN2076**  
Vintage Oak B



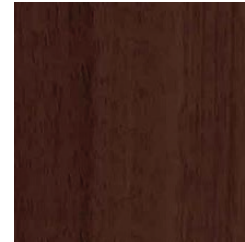
**TE-SN2079**  
Iris Noche B



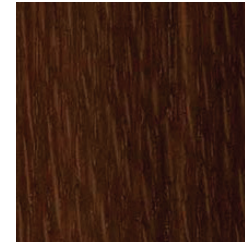
**TE-SN2097**  
Stella Elm BL



**TE-SN2086**  
Ligne Cedar DG



**TE-SN2070**  
Lind Acacia BL



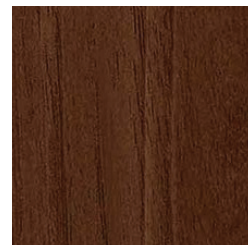
**TE-SN944**  
Fram Oak D



**TE-SN2081**  
Marble Wood DG



**TE-SN2040**  
English Walnut BL



**TE-SN2051**  
Symphony Walnut D



**TE-SN2062**  
Noir Imbuia D



**TE-SN7002**  
Pure Black



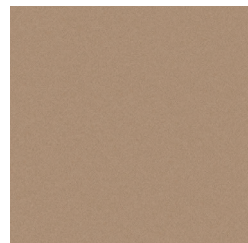
**TE-SN7104**  
Mode Metal BL



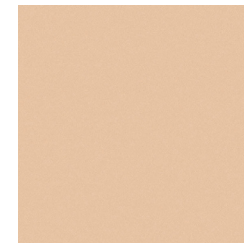
**TE-SN7103**  
Mode Metal B



**TE-SN7102**  
Mode Metal G



**TE-SN7101**  
Reflet Cloth G



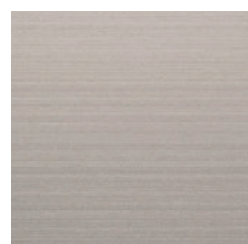
**TE-SN7100**  
Reflet Cloth W

# Interior/ Exterior Anodized Finishes

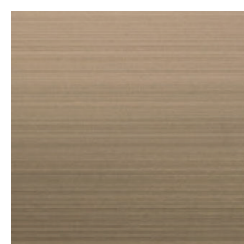
Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



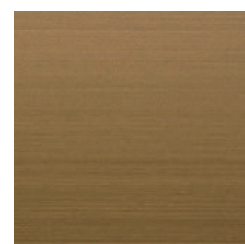
**SN**  
Silver



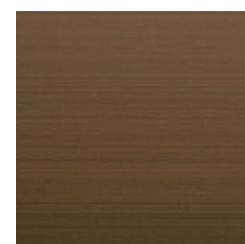
**RB-5N**  
Stain Color



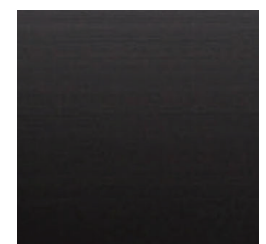
**RB-4N**  
Light Bronze



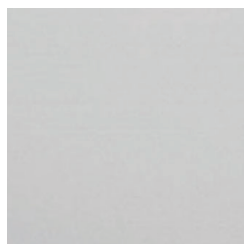
**RB-3N**  
Bronze



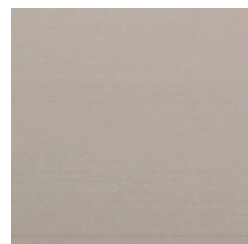
**RB-2N**  
Dark Bronze



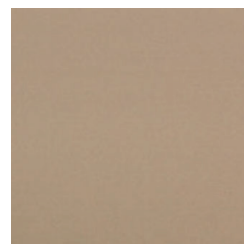
**RB-1N**  
Black



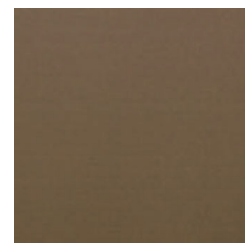
**NS-SN**  
Silver Matte



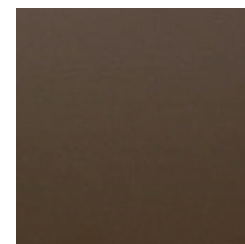
**NS-5N**  
Stain Color Matte



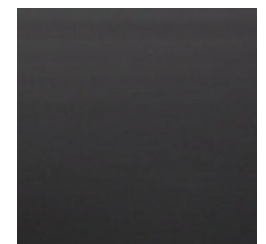
**NS-4N**  
Light Bronze Matte



**NS-3N**  
Bronze Matte



**NS-2N**  
Dark Bronze Matte



**NS-1N**  
Black Matte

# Exterior Finishes

Please note that the color in the brochure may vary from the actual product. Each design collection is subject to change periodically without notice.



**TA-012**  
Bamboo



**TA-005**  
Rican Oak



**TA-758**  
Vent Walnut N



**TA-021**  
Criollo Elm



**TA-028**  
Pacific Gray



**TA-647**  
Earl Walnut M



**TA-031**  
Maple



**TA-532**  
Cherry Line M



**TA-013**  
Antique Cedar G



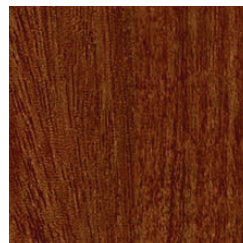
**TA-014**  
Antique Cedar RB



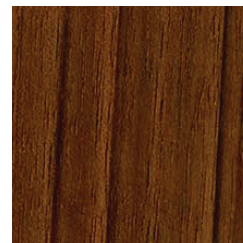
**TA-602**  
Vintage Walnut



**TA-030**  
Machilus



**TA-605**  
Blossom Birch



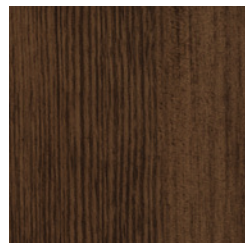
**TA-760**  
Vent Walnut D



**TA-775**  
Carina Elm D



**TA-808**  
Vent Walnut BL



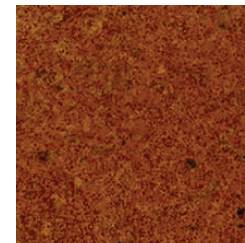
**TA-029**  
Classic Pine



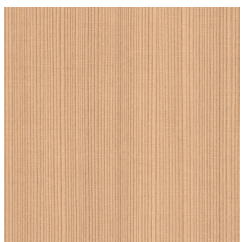
**TA-001**  
Terra Cotta Clay



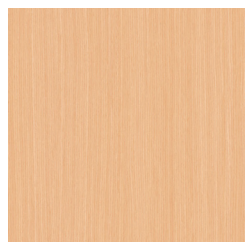
**TA-002**  
Terra Cotta Arrosto



**TA-003**  
Terra Cotta Rosso



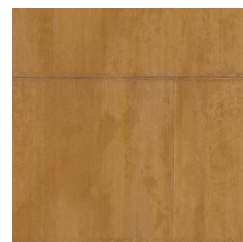
**TA-004**  
Rokko Cedar



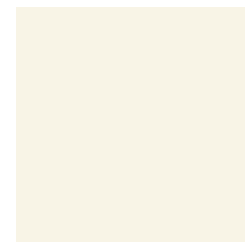
**TA-032**  
Eisen Sakura



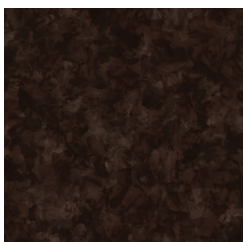
**TA-033**  
Bamboo M



**TA-034**  
Bamboo D



**TQ-093**  
Win White



**TA-006**  
Spangle Metal D



**TA-009**  
Aging Metal PD

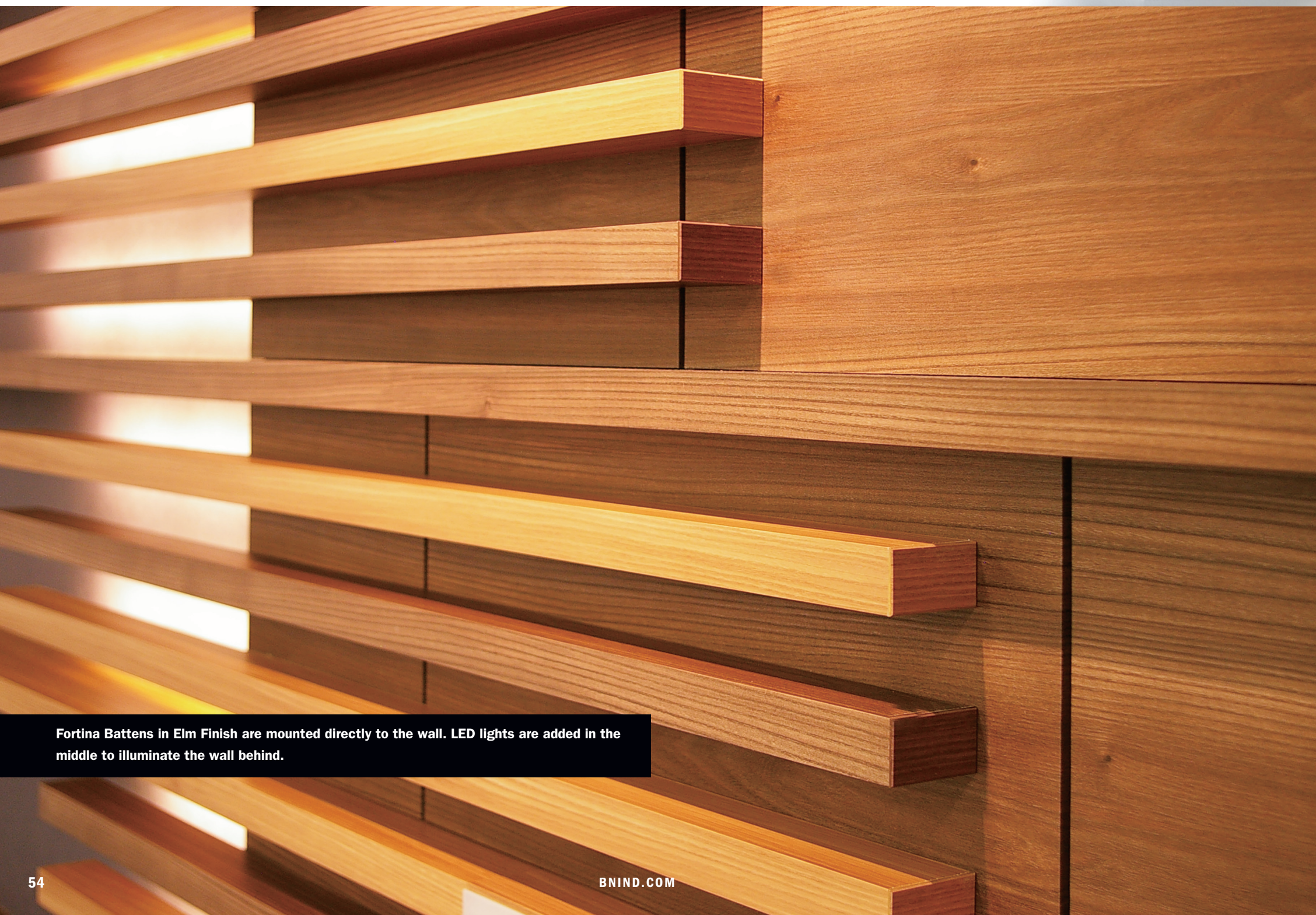


**TA-011**  
Aging Metal C

## What is a Batten and what is a Slat?

# Battens

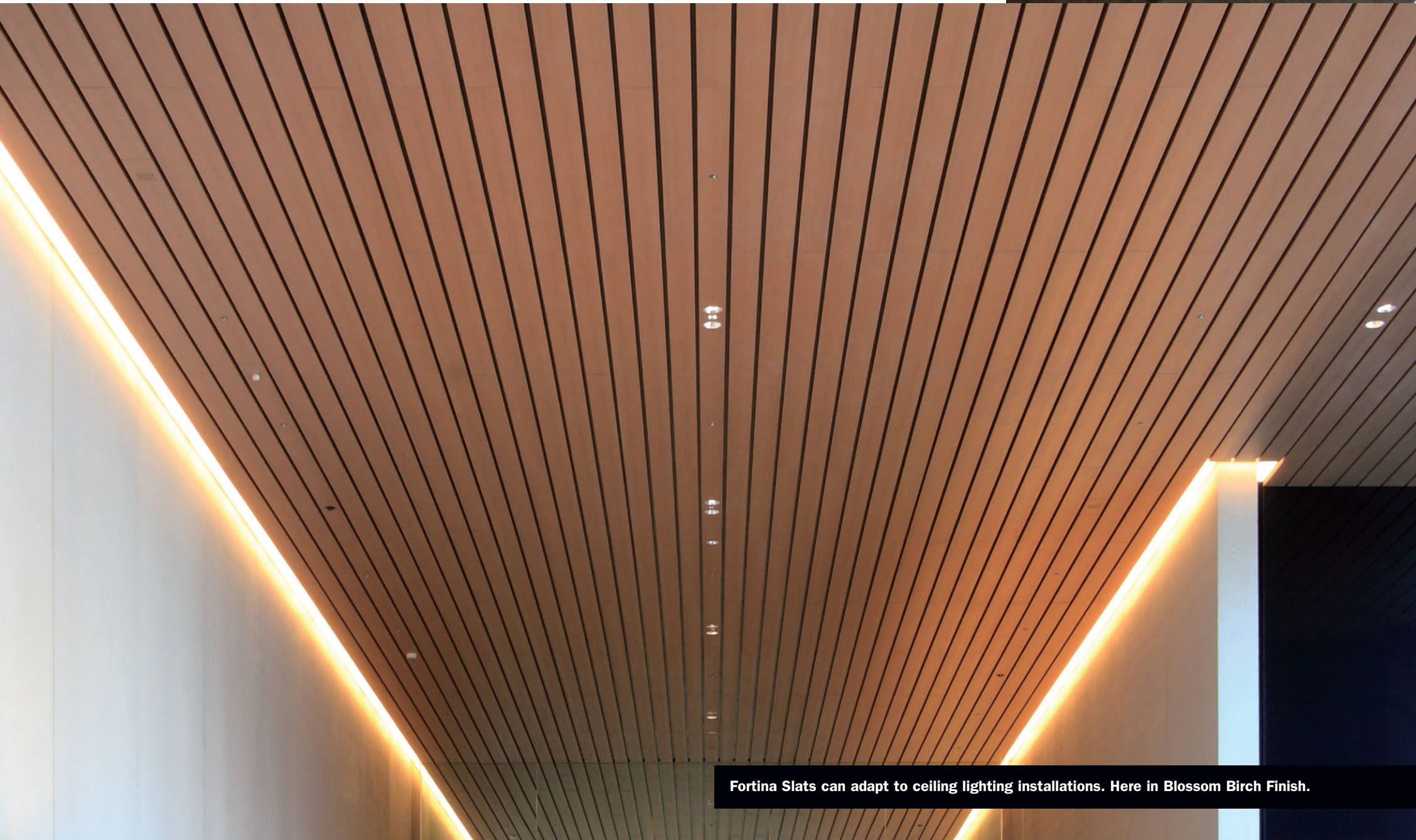
Battens, originally used for blinds to create shade and ventilation, are now seen increasingly as a design component both for interior and exterior applications. Fortina Batten is an aluminum extrusion wrapped in a non-PVC film. They come in over 50 profiles and can be covered in 100 films. They are lightweight, incombustible, weather resistant and quick and cost efficient to install. Fortina Battens are mounted on walls and ceilings with Direct Application or with Stringers to create visual interest and add extra dimension.



Fortina Battens in Elm Finish are mounted directly to the wall. LED lights are added in the middle to illuminate the wall behind.

# SLATS

Lightweight interlocking Fortina Slats are used on walls and ceilings. The extruded slats come in a wide choice of finishes using decorative film to create an individual custom look that coordinates with Fortina Battens. Slats are available with or without a reveal in several widths.



Fortina Slats can adapt to ceiling lighting installations. Here in Blossom Birch Finish.

West



# Lighting

Fortina's authentic wood-like finishes are now complemented by seamlessly embedded, energy-efficient LED lights. This innovation not only amplifies the visual warmth and texture of our versatile Battens but also offers a practical solution for ambient lighting.

## LIGHTING APPLICATIONS:

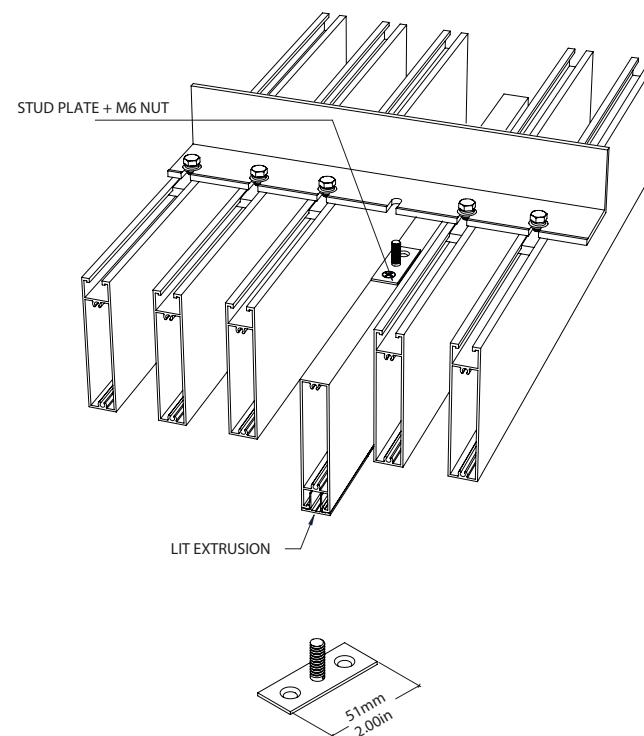
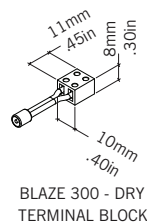
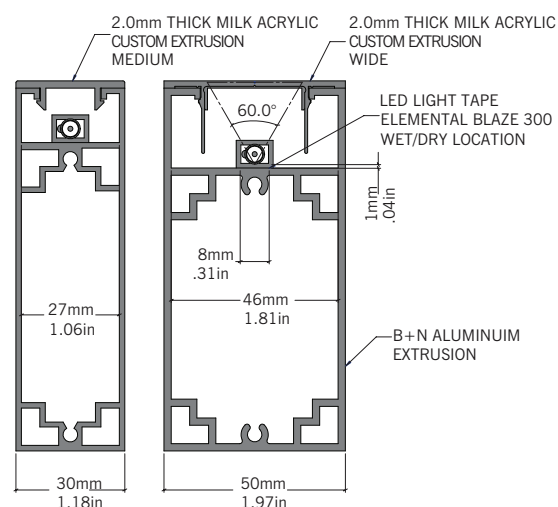
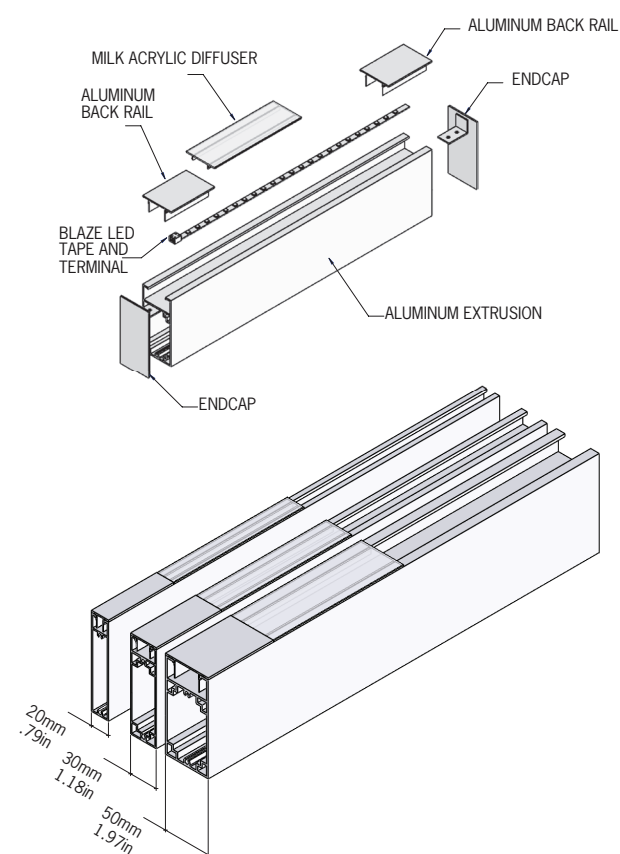
**Direct Lighting:** The light is integrated into the Fortina Batten and shown through our LED diffuser back rails that clip on seamlessly to the Fortina Batten. This causes the light to shine directly at the viewer, producing concentrated strips of light that create a sleek and modern look.

**Indirect Lighting:** The light is integrated into the Fortina Batten but does not face the viewer directly. Instead, the light illuminates from the back of the Fortina Batten, creating a soft glow around the Batten that helps reduce glare and shadows within a space.

**Light Grazing:** This is a lighting technique that uses light strips positioned at an angle against a vertical wall. When lights are illuminated against a wall that contains Fortina, our Fortina Battens benefit from the dramatic play between light and shadow.

## LIGHTING BENEFITS:

- Fully integrated LED lighting within the Fortina Batten
- Light applications customized to your project
- Fully diffused and uninterrupted linear lighting
- Indoor & outdoor options
- Wide range of lumen output options
- Color (CCT) Range: 2000K-6300K
- 95+ CRI: Superior color rendering with high R9-R13 values
- Tunable White, RGBW, and Dim to Warm options available
- Dimming compatible with a wide range of wall dimmers and control systems
- IP65 Rating for outdoor applications





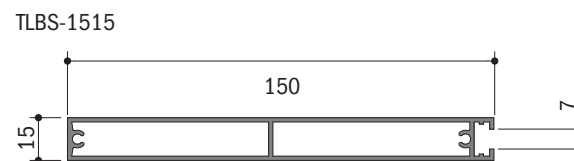
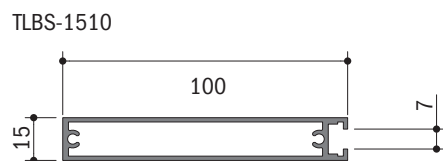
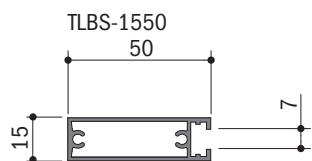


EIT Benefit Funds lobby with a massive waterfall of Forting Battens and Lighting. Finish: TA-647 Earl Walnut M

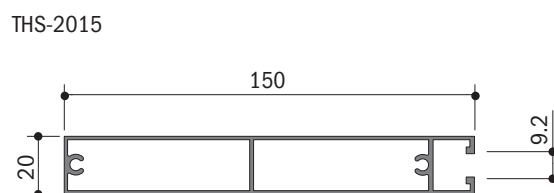
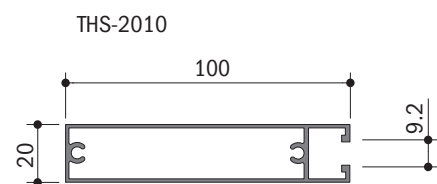
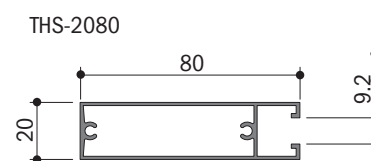
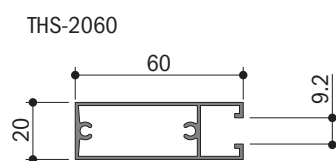
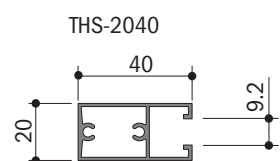
# Interior and Exterior Wall And Ceiling Applications With Stringers > Batten Profiles

Note: all dimensions are in mm. See Finishes Guide for finishes.

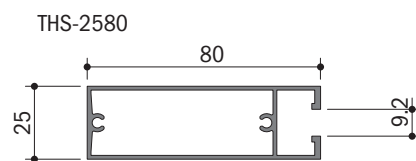
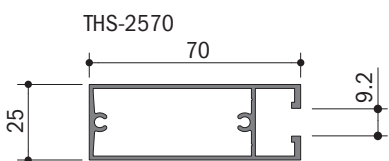
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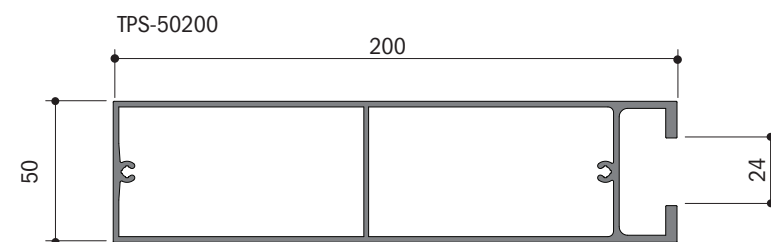
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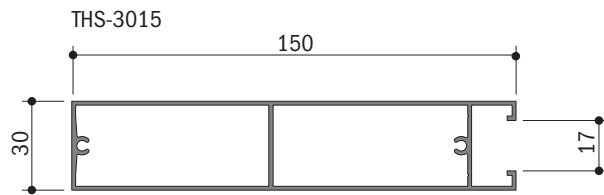
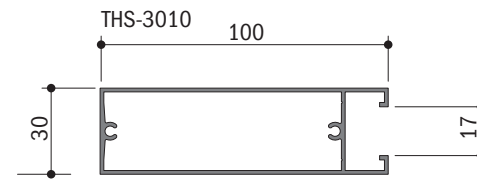
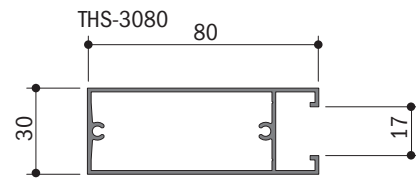
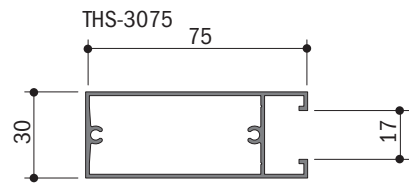
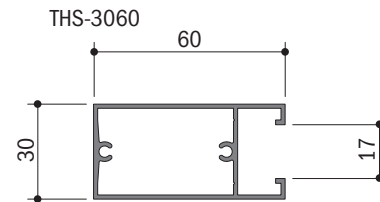
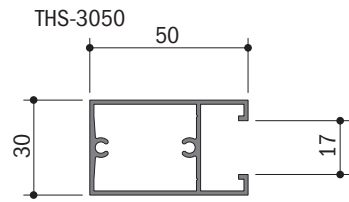
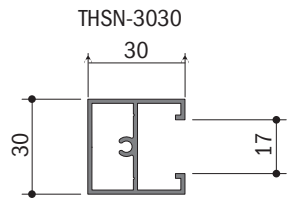
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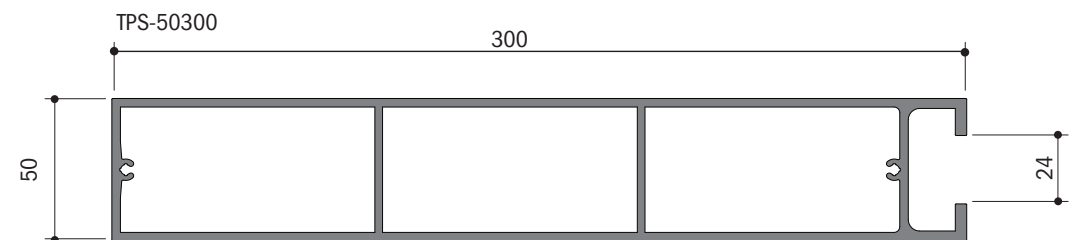
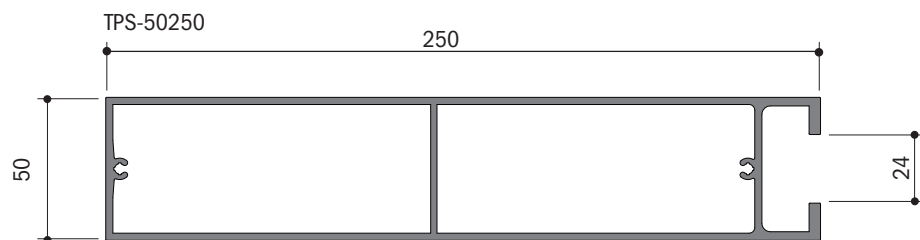
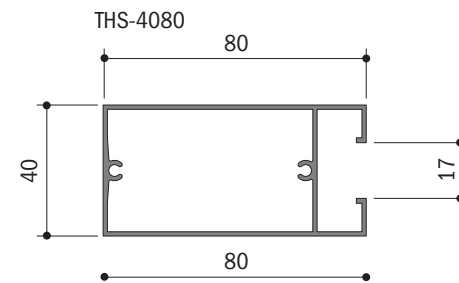
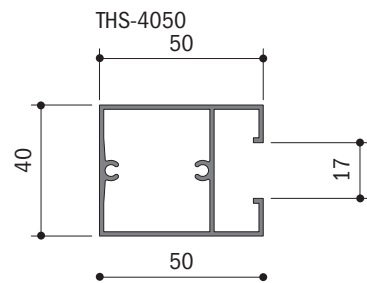
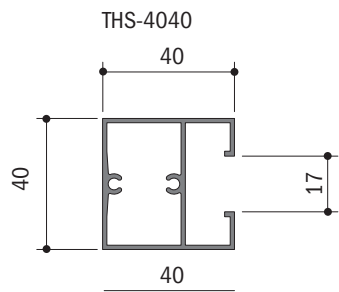
## SQUARE 50



## SQUARE 30



## SQUARE 40

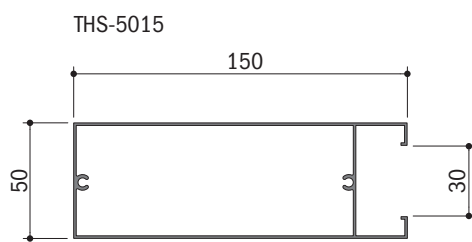
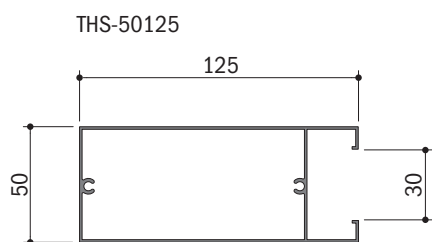
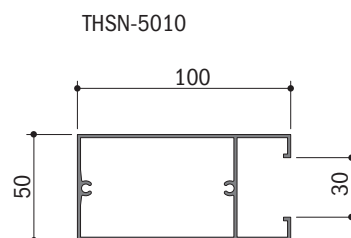
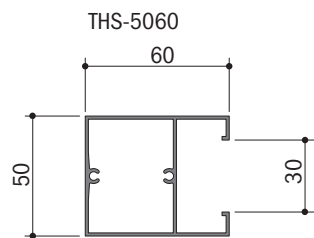
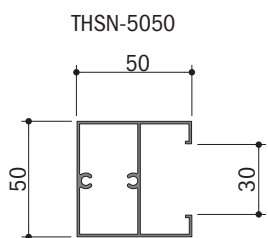


# Interior and Exterior Wall And Ceiling Applications With Stringers > Batten Profiles and End Caps

Note: all dimensions are in mm. See Finishes Guide for finishes.

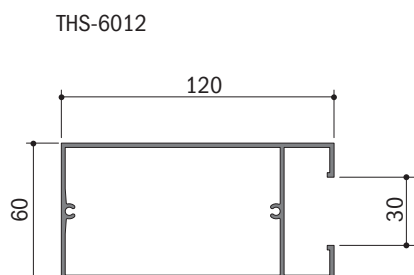
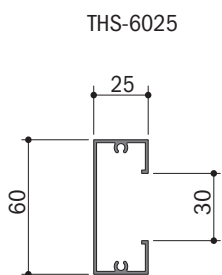
## SQUARE 50

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## SQUARE 60

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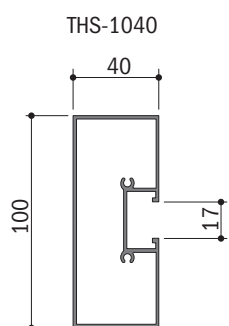
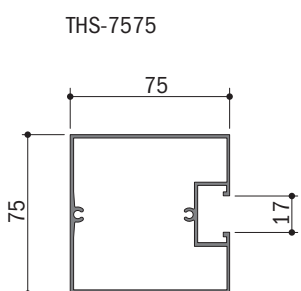


## SQUARE 75

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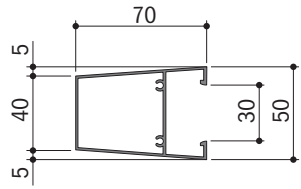
## SQUARE 100

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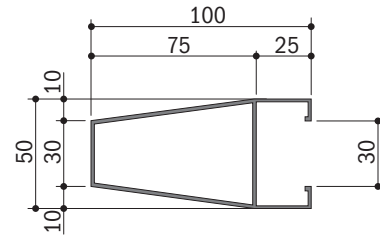


## TRAPEZOID

THTR-4070

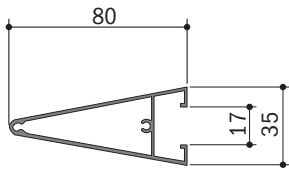


THL-02

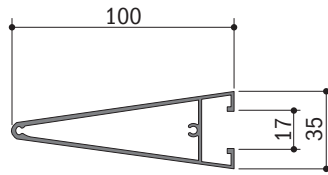


## TRIANGLE

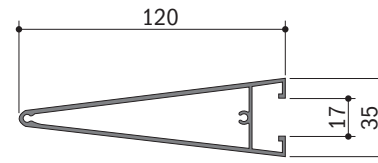
THV-3580



THV-3510

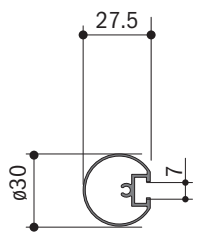


THV-3512

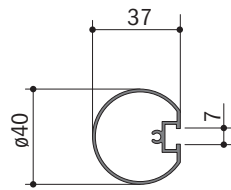


## ROUND

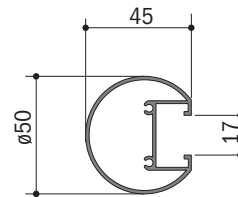
THC-30



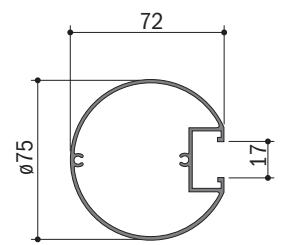
THC-40



THC-50



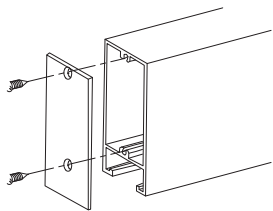
THC-75



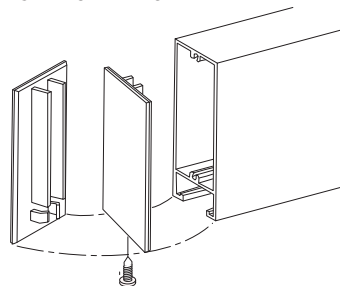
## END CAPS

Materials: Aluminum Plate. Sold in sets of 20.

SCREW-ON END CAP

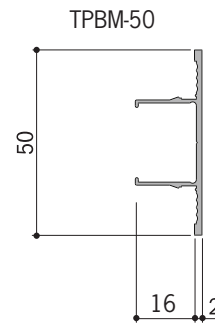
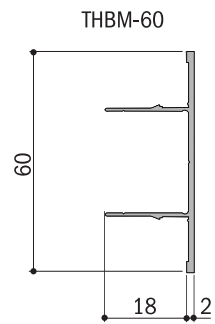
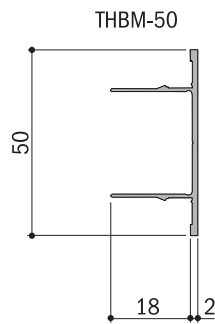
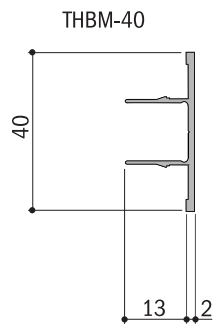
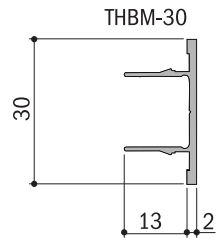
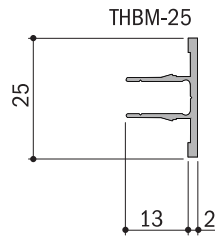
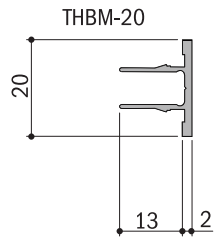


SNAP-ON END CAP



# Interior and Exterior Wall And Ceiling Applications With Stringers > Decorative Backrails

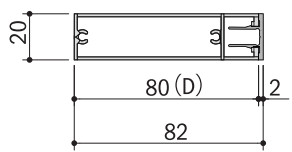
Note: all dimensions are in mm. See Finishes Guide for finishes.



## EXAMPLES OF PROFILES WITH DECORATIVE BACKRAILS INSTALLED

THBM-20

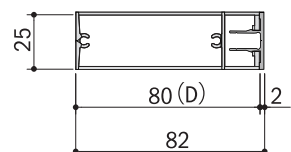
THS-2080 + THBM-20



(D) : 40/60/80/100/150

THBM-25

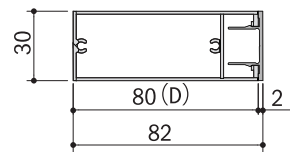
THS-2580 + THBM-25



(D) : 70/80

THBM-30

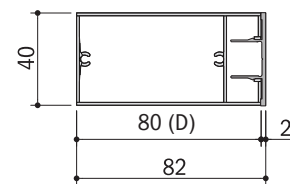
THS-3080 + THBM-30



(D) : 30/50/60/75/80/100/150

THBM-40

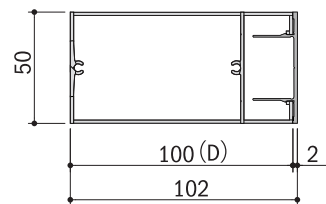
THS-4080 + THBM-40



(D) : 40/50/80

THBM-50

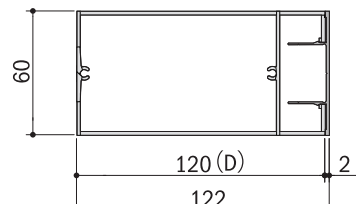
THSN-5010 + THBM-50



(D) : 50/60/100/125/150

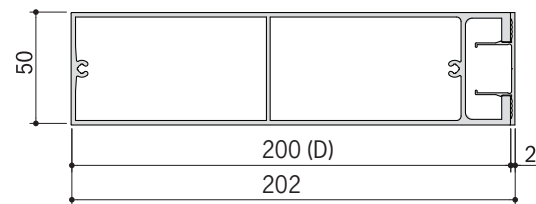
THBM-60

THS-6012 + THBM-60



(D) : 25/120

TPBM-50

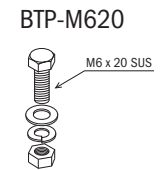
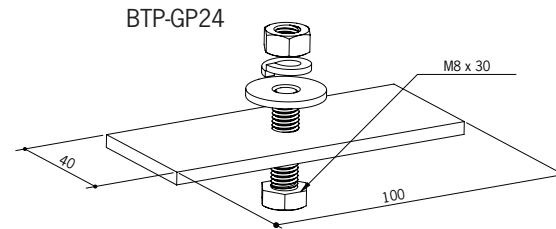
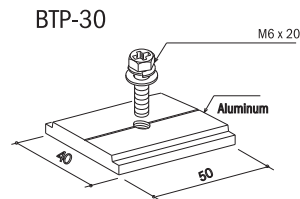
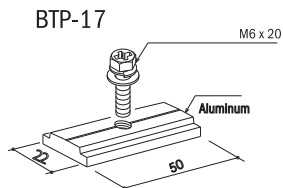
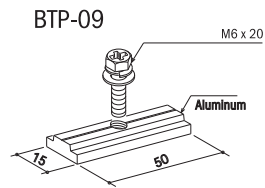


## BATTEN PROFILES AND ACCESSORIES

# Interior and Exterior Wall And Ceiling Applications With Stringers > Accessories

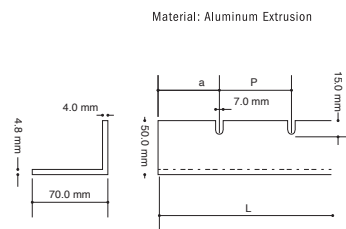
Note: all dimensions are in mm. See Finishes Guide for finishes.

### CLIPS FOR ATTACHING BATTENS TO STRINGERS (SOLD IN SETS OF 20)

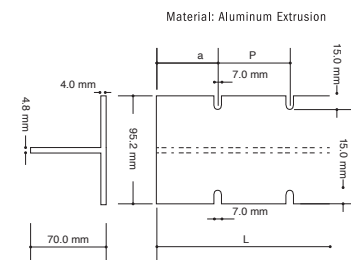


### STRINGERS

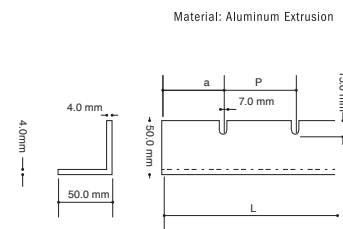
**STAL-5**



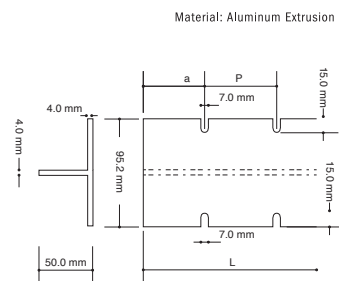
**STAL-6**



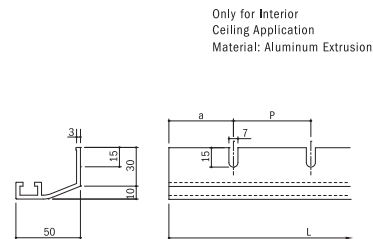
**STAL-7**



**STAL-8**

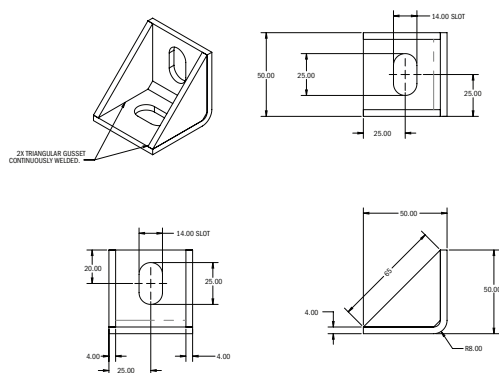


**STCL-1**



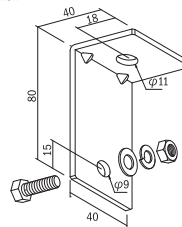
### STRINGER FITTINGS (SOLD IN SETS OF 10)

**BTS-5050 WELDED GUSSET**



**BTS-4080ST**

Material: Polished Chrome Finish  
ST = 3.2mm  
Used with STCL-1 Stringer

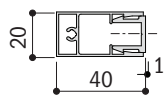


# Interior Wall And Ceiling Direct Applications > Batten Profiles and Endcaps

Note: all dimensions are in mm. See Finishes Guide for finishes.

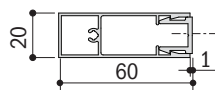
## Attachment 20

TLKS-2040



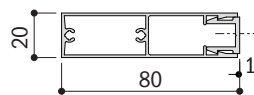
Backrail CLKU-20

TLKS-2060



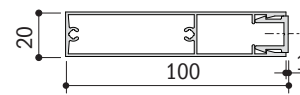
Backrail CLKU-20

TLKS-2080



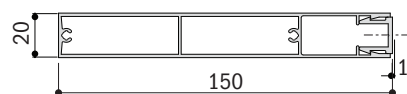
Backrail CLKU-20

TLKS-2010



Backrail CLKU-20

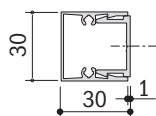
TLKS-2015



Backrail CLKU-20

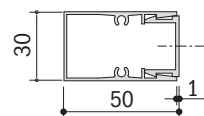
## Attachment 30

TLKS-3030



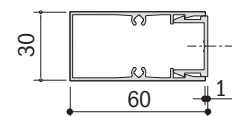
Backrail CLKU-30

TLKS-3050



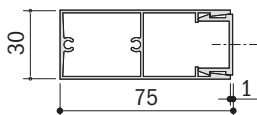
Backrail CLKU-30

TLKS-3060



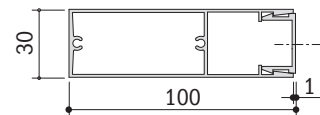
Backrail CLKU-30

TLKS-3075



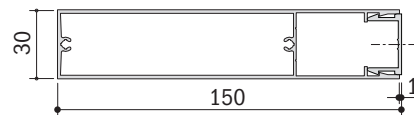
Backrail CLKU-30

TLKS-3010



Backrail CLKU-30

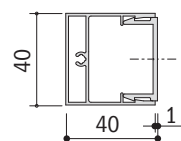
TLKS-3015



Backrail CLKU-30

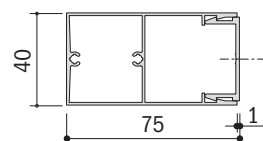
## Attachment 40

TLKS-4040



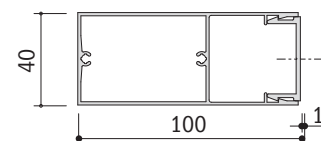
Backrail CLKU-40

TLKS-4075



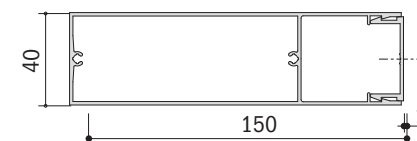
Backrail CLKU-40

TLKS-4010



Backrail CLKU-40

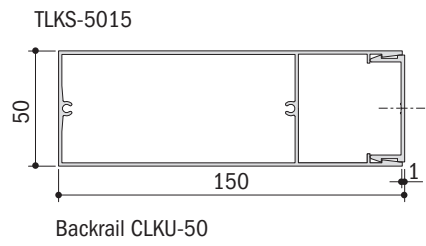
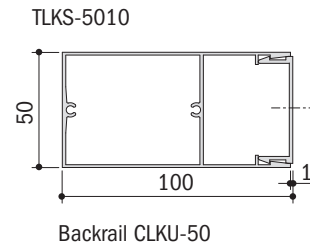
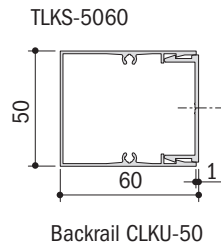
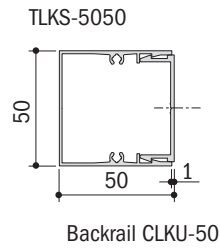
TLKS-4015



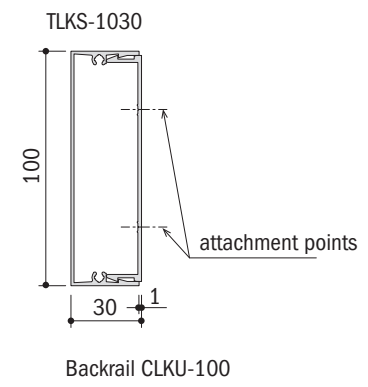
Backrail CLKU-40



## Attachment 50



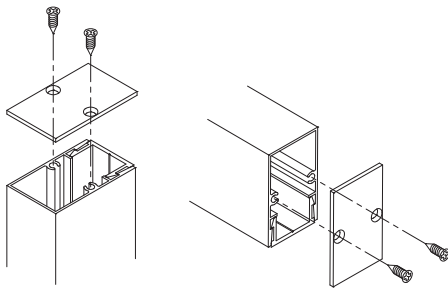
## Attachment 100



## END CAPS

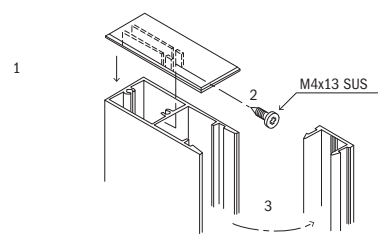
Materials: Aluminum Plate. Sold in sets of 20.

### DIRECT SCREW-ON END CAP



Use with any direct attachment louvers.

### DIRECT SNAP-ON END CAP

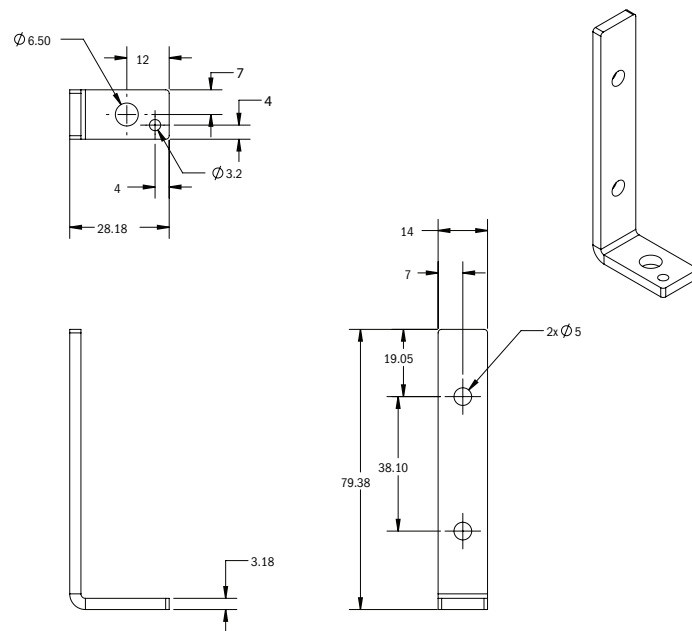


Use with:  
 TLKS-2040  
 TLKS-2060  
 TLKS-2080  
 TLKS-2010  
 TLKS-2015  
 TLKS-3075  
 TLKS-3010  
 TLKS-3015  
 TLKS-4040  
 TLKS-4075  
 TLKS-4010  
 TLKS-4015  
 TLKS-5010  
 TLKS-5015

# Floor-To-Ceiling Applications > L-Brackets

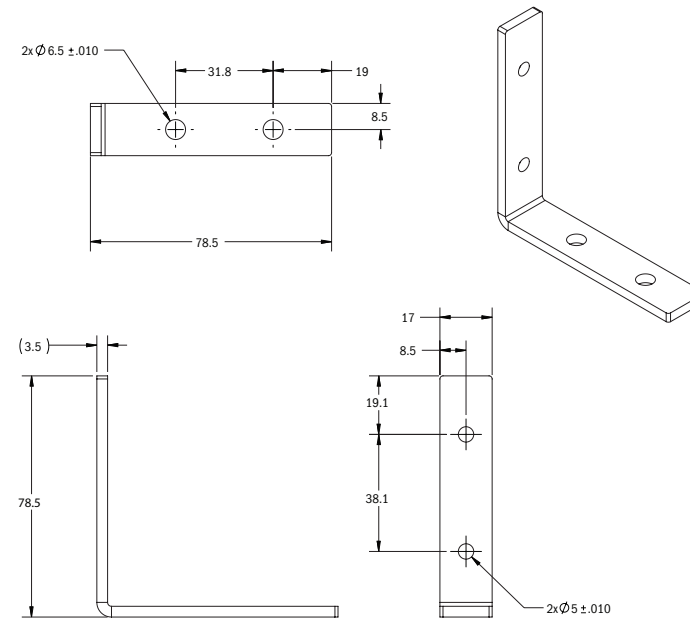
Note: all dimensions are in mm

TBF L-BRACKET LITE



USE WITH:  
 THS-2040  
 THS-2060  
 THS-2080  
 THS-2010  
 THS-2015  
 THS-2570  
 THS-2580  
 THSN-3030  
 THS-3050  
 THS-3060  
 THS-3075  
 THS-3080  
 THS-4040  
 THS-4050  
 THS-4080  
 THSN-5050  
 THS-5060

TBF HD L-BRACKET



USE WITH:  
 THS-3010  
 THS-3015  
 THSN-5010  
 THS-50125  
 THS-5015  
 THS-6012

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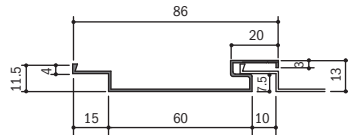
# Interior And Exterior Slats > Profiles

Note: all dimensions are in mm. See Finishes Guide for finishes.

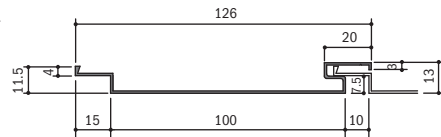
## 13mm height/thickness Profile Selection

### Standard Style With 10mm Reveal

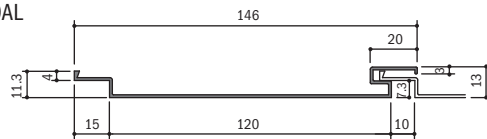
TRA-60ST t = 1.0mm  
TRA-60AL



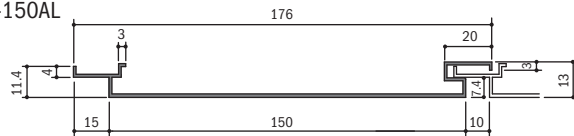
TRA-100ST t = 1.0mm  
TRA-100AL



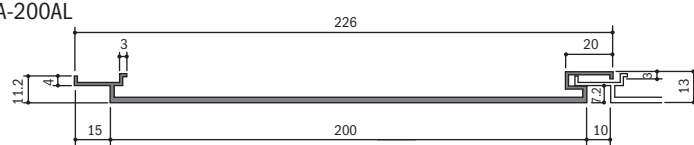
TRA-120ST t = 1.2mm  
TRA-120AL



TRA-150ST t = 1.3mm  
TRA-150AL

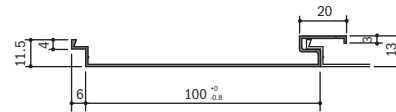


TRA-200ST t = 2.3mm  
TRA-200AL

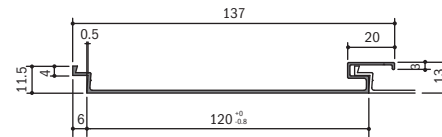


### Flat Style With No Reveal

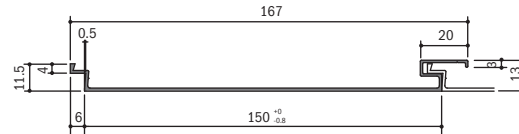
TRA-100MF t = 1.0mm



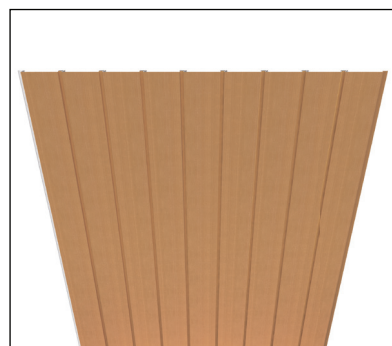
TRA-120MF t = 1.2mm



TRA-150MF t = 1.3mm

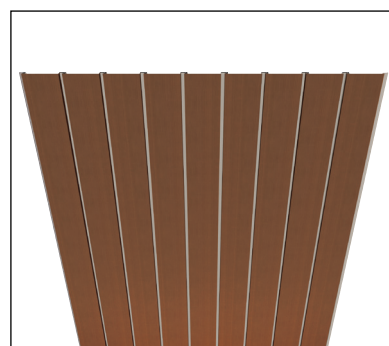


STANDARD STYLE  
WITH WOODGRAIN INSIDE REVEAL



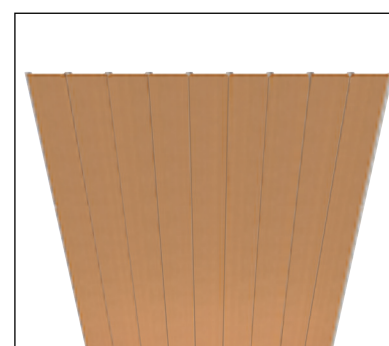
TRA-xxxST

STANDARD STYLE  
WITH ALUMINUM INSIDE REVEAL



TRA-xxxAL

FLAT STYLE



TRA-xxxMF

# SLAT PROFILES AND ACCESSORIES

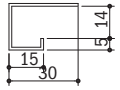
## Interior And Exterior Slats > Accessories

Note: all dimensions are in mm. Finish on a Slat Trims and Accessories is anodized or powder coated.

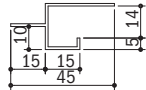
### 13mm

Trims / Edge Treatment

M-16 t=1.2

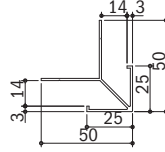


M-19-1 t=1.2



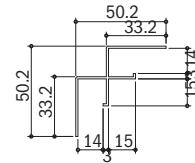
Exterior Corner Trim

M-70 t=1.2



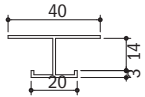
Interior Corner Trim

M-78 t=1.2

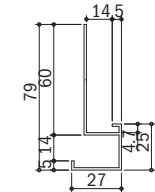


H Joints

M-64 t=1.2



M-71 t=1.3



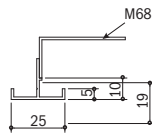
### 13mm/23mm

Corner Trims

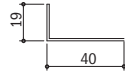
M-6 t=1.5



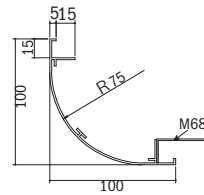
M-67 t=1.2



M-68 t=1.2

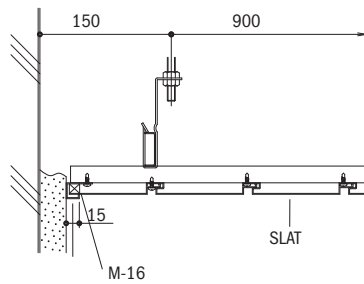


M-69 t=1.5

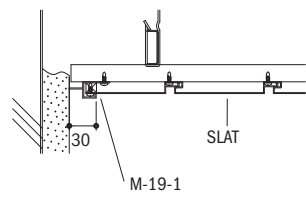


### Slat > Installation Examples

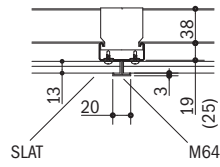
LONGITUDINAL SECTION USING M-16



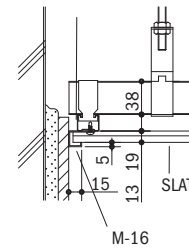
LONGITUDINAL SECTION USING M-19-1



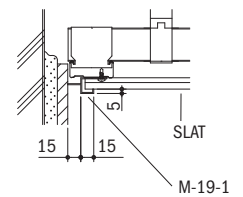
JOINT DETAIL USING M-64



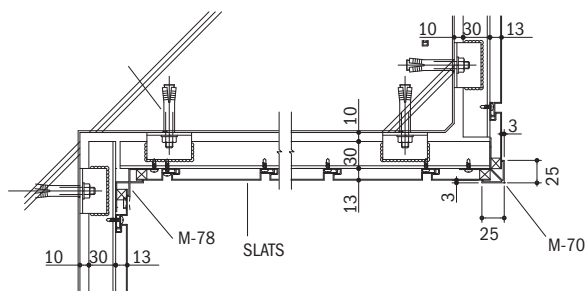
CROSS SECTION USING M-16



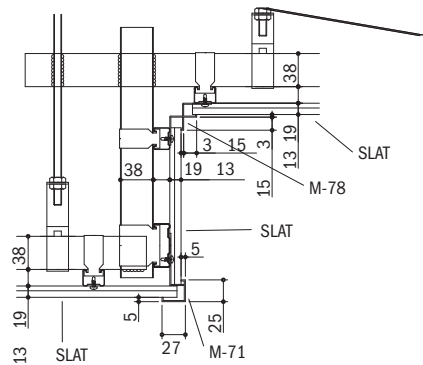
CROSS SECTION USING M-19-1



INSIDE AND OUTSIDE CORNER USING M-70 • 78



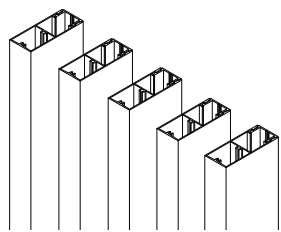
DROP CEILING DETAIL USING M-71 • 78



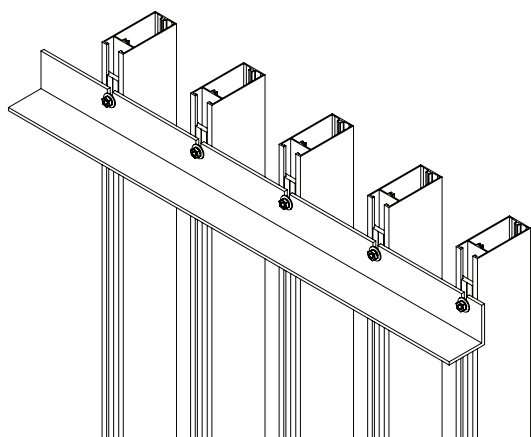
## Interior Applications

### Vertical On Wall

**Direct Attachment** with interlocking Batten and back rail. Screw back rails at desired locations vertically to the wall and lock Batten into it. It is recommended that you secure the back rail with small screw on side at top and bottom. Add end caps if needed.

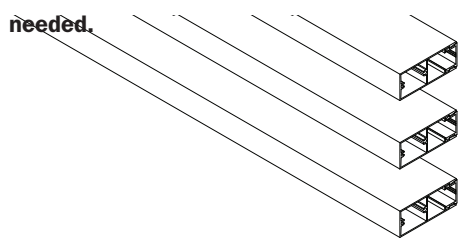


**Stringer Mounted Battens** Attach Stringers horizontally to the wall structure with L-brackets, Unistrut, L-angles or similar. Stringers will be pre-notched to create the designed Batten spacing. Secure Battens to the Stringers with special Fortina clips. Add end caps if needed.

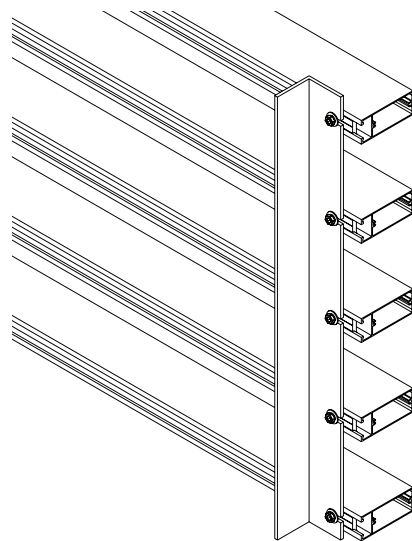


### Horizontal On Wall

**Direct Attachment** with interlocking Batten and back rail. Screw back rails at desired locations horizontally into the wall and lock Batten into it. It is recommended that you secure the back rail with small screw on side at top and bottom. Add end caps if needed.

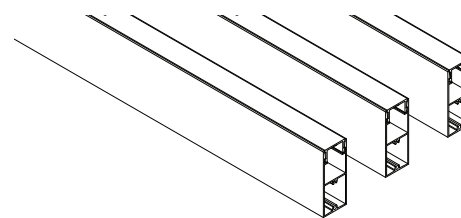


**Stringer Mounted Battens** Attach Stringers vertically to the wall structure with L-brackets, Unistrut, L-angles or similar. Stringers will be pre-notched to create the designed Batten spacing. Secure Battens to the Stringers with special Fortina clips. Add end caps if needed.

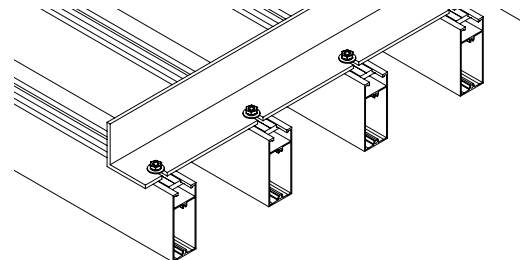


### Ceiling

**Direct Attachment** with interlocking Batten and back rail. Screw back rails at desired locations into the ceiling and lock Batten into it. It is recommended that you secure the back rail with small screw on side at each end. Add end caps if needed.

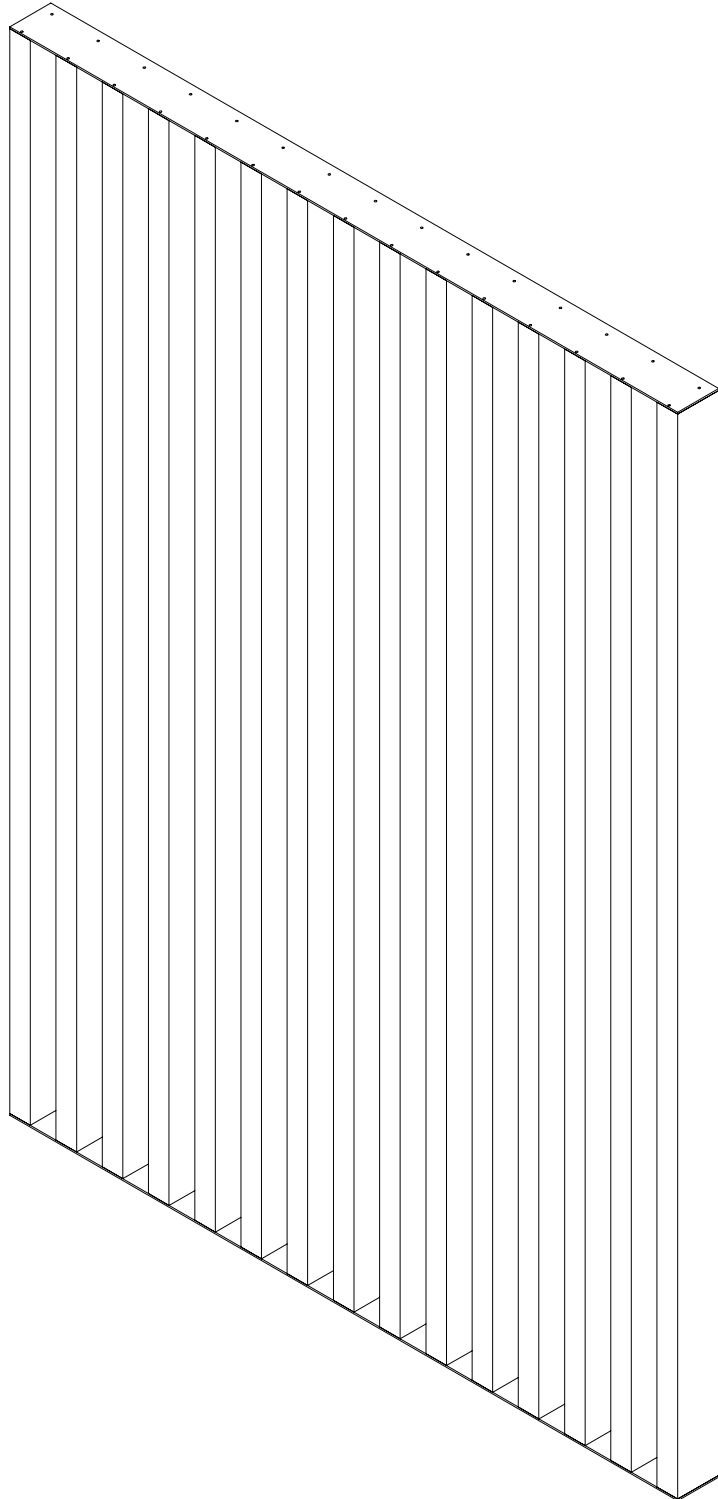


**Stringer Mounted Battens** Hang Stringers from the ceiling structure with rods, Unistrut or L-brackets. Stringers will be pre-notched to create the designed Batten spacing.

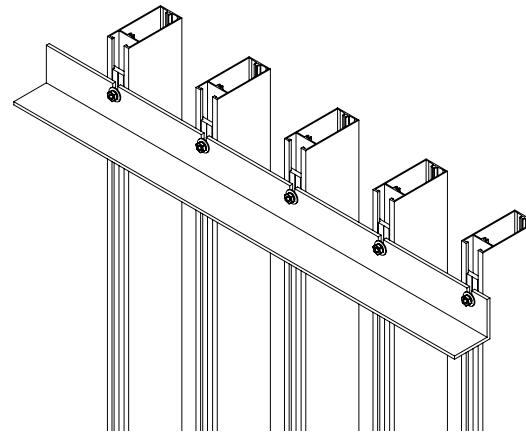


# Exterior Applications

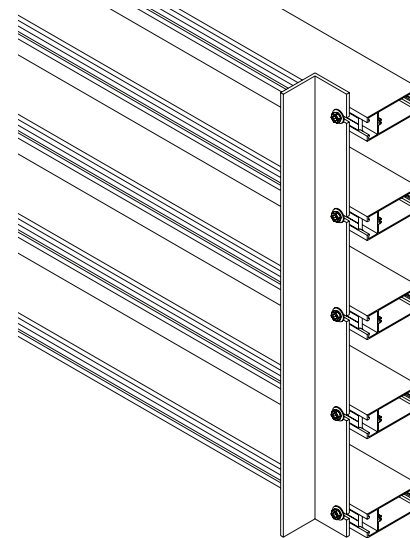
**Floor-To-Ceiling** Battens are connected at top and bottom with L-brackets. Attach short side of the L- bracket to floor and to ceiling at desired locations. Slide in the Batten and attach to brackets. Snap in the back rail to cover the connections.



**Stringer Mounted Vertical Battens** Attach Stringers horizontally to the wall structure with L-brackets, Unistrut, L-angles or similar. Stringers will be pre-notched to create the designed Batten spacing. Secure Battens to the Stringers with special Fortina clips. If adding end caps, drill a small drain hole in each end cap.



**Stringer Mounted Horizontal Battens** Attach Stringers vertically to the wall structure with L-brackets, Unistrut, L-angles or similar. Stringers will be pre-notched to create the designed Batten spacing. Secure Battens to the Stringers with special Fortina clips. Add end caps if needed.

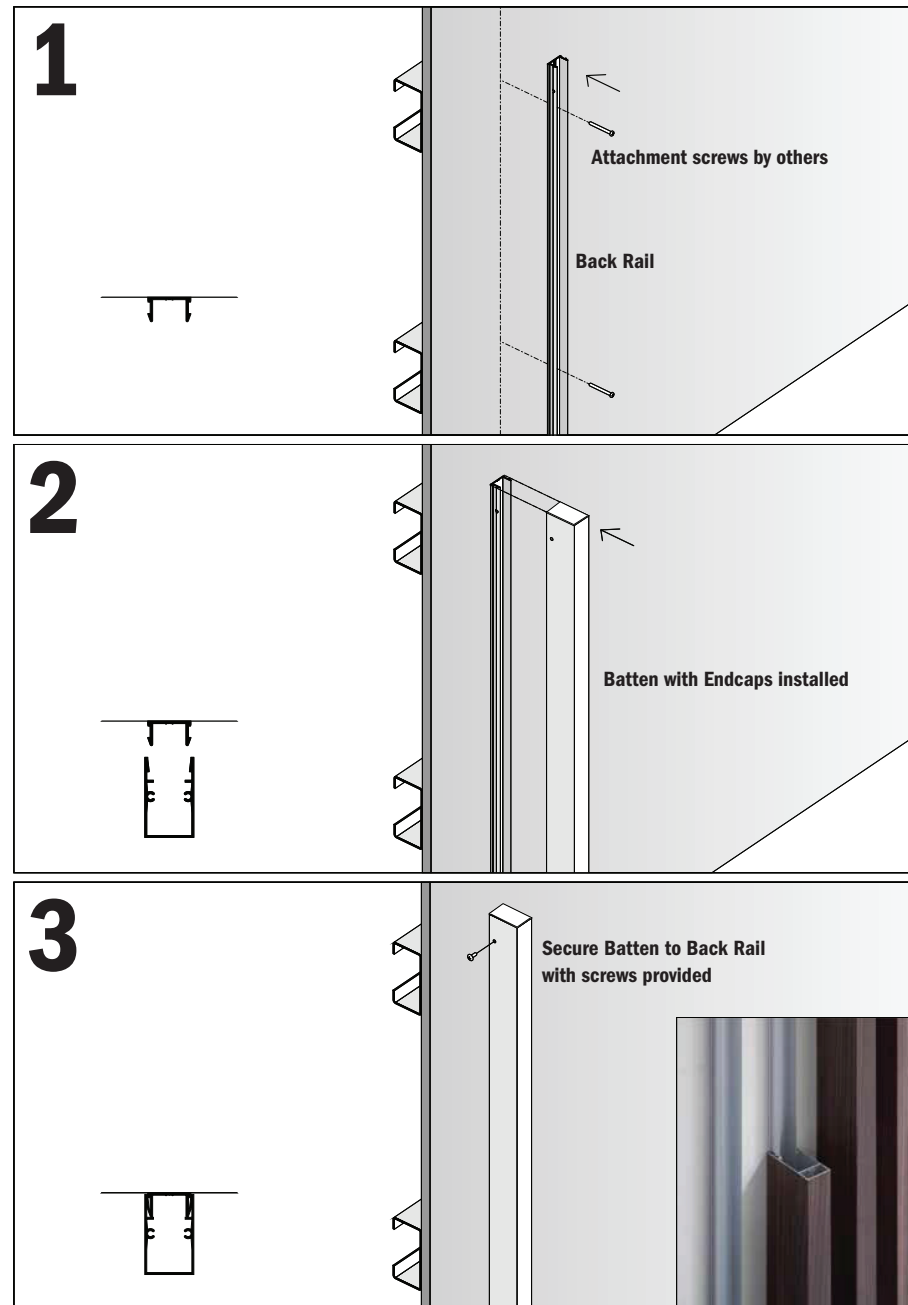


## Fortina Battens > Wall > Direct Attachment > Interior/Exterior

1. Attaching the Back Rail:  
Measure and mark the position of your Battens on the wall.  
Mark and drill pilot holes in the Back Rail in a diameter smaller than the screw you are using.  
Attach to wall at pre-marked locations. Attach Endcaps to the Battens with screws provided before installing the Battens.

2. Install the Batten by snapping into the Back Rail.

3. Secure the Batten to the Back Rail with a screw through the side.





## INSTALLATION INSTRUCTIONS

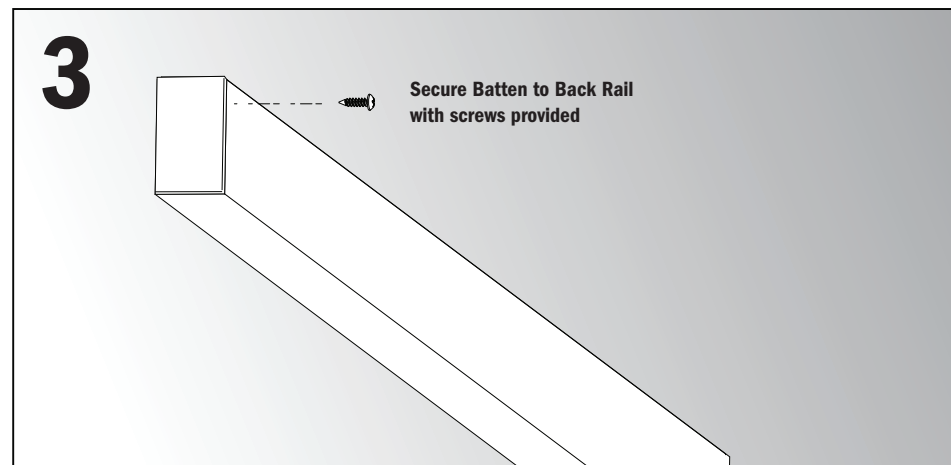
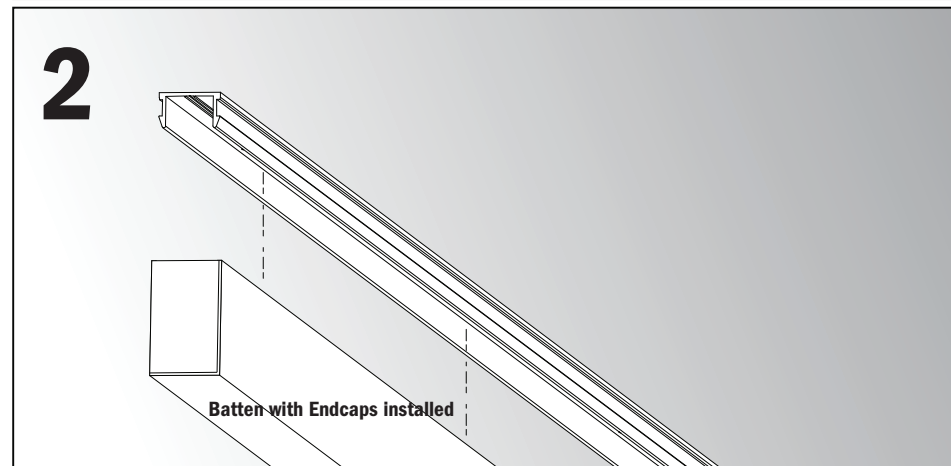
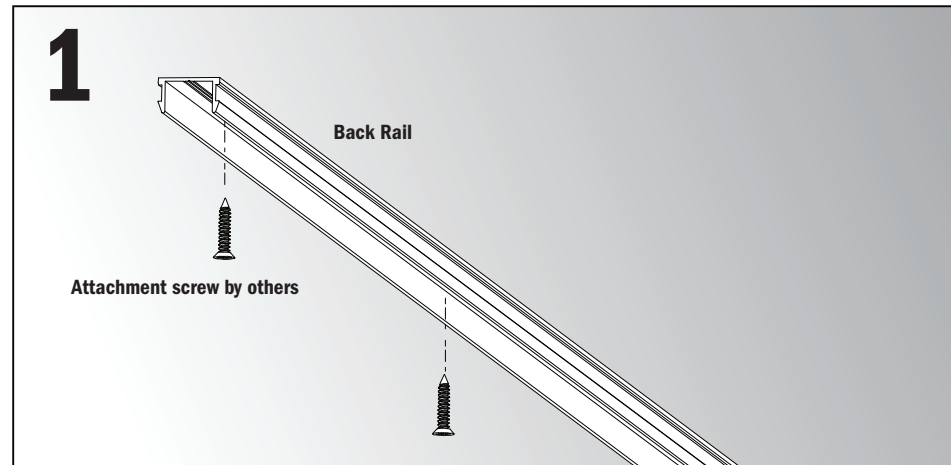
# Fortina Battens > Ceiling > Direct Attachment > Interior Only

1. Attaching the Back Rail:  
Measure and mark the position of your Battens on the ceiling. Mark and drill pilot holes in the Back Rail in a diameter smaller than the screw you are using. Attach to ceiling at pre-marked locations.

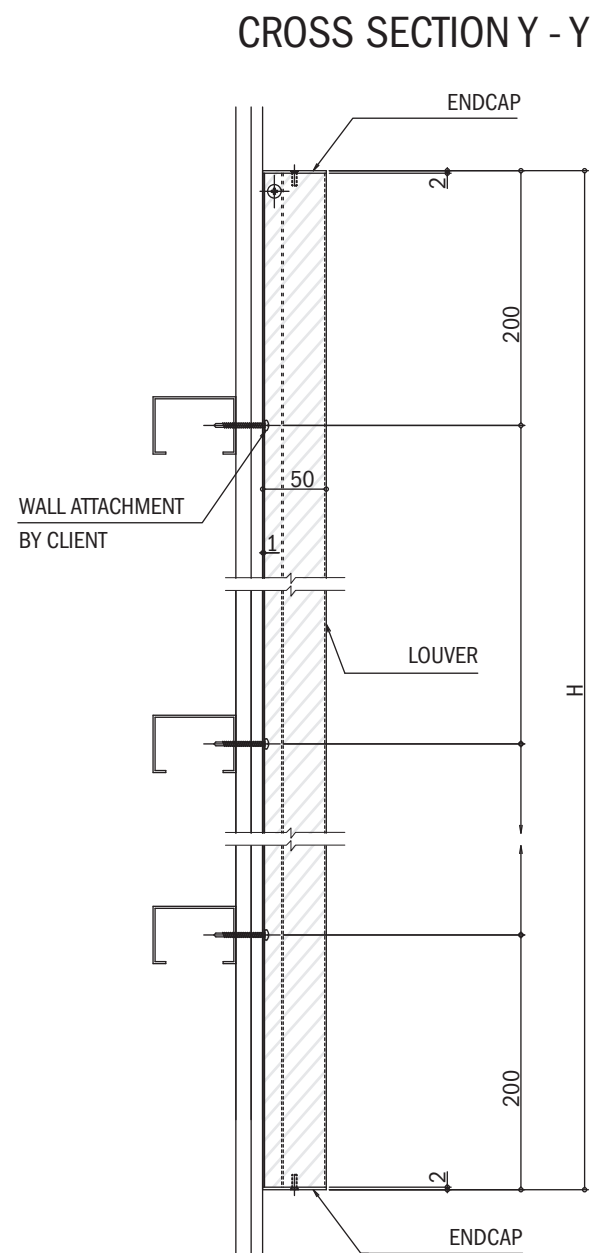
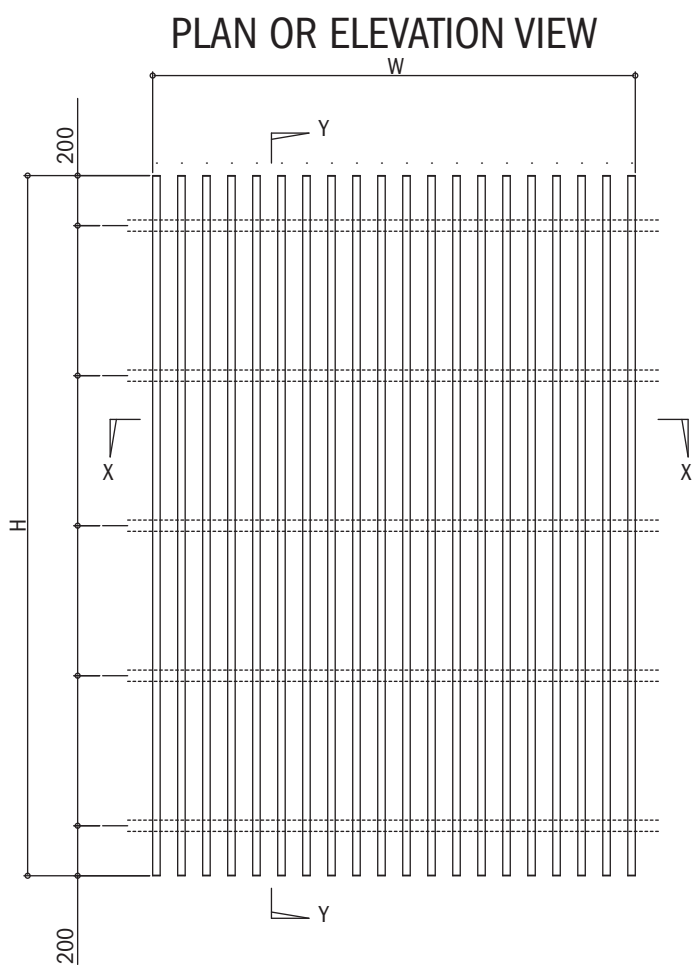
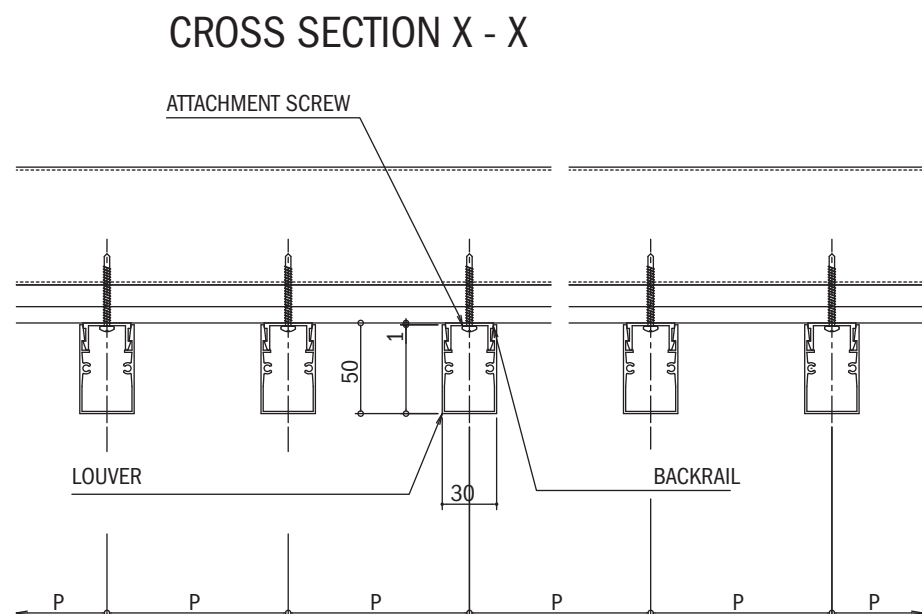
Attach Endcaps to the Battens with screws provided, as shown on the next page, before installing the Battens.

2. Install the Batten by snapping into the Back Rail.

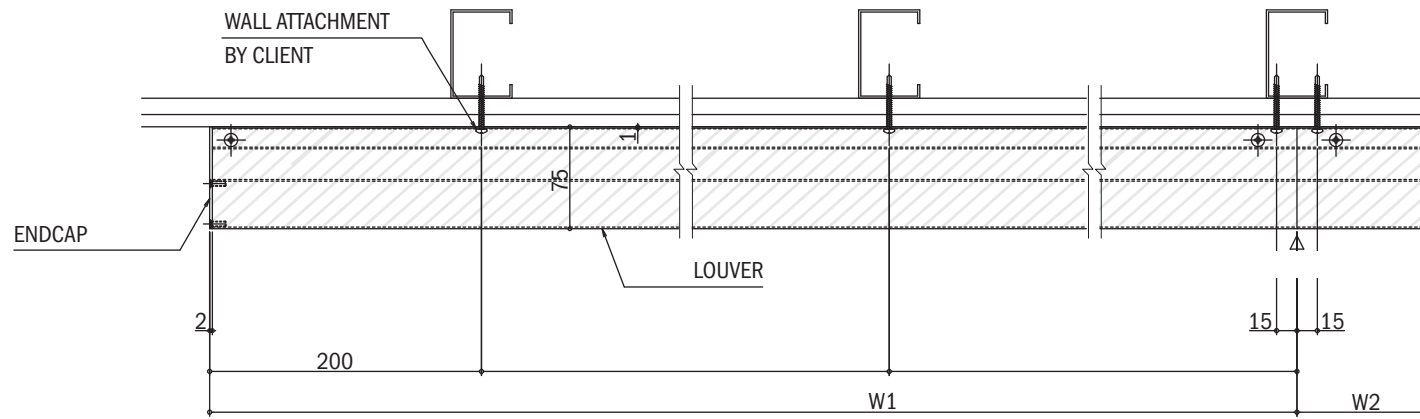
3. Secure the Batten to the Back Rail with a screw through the side.



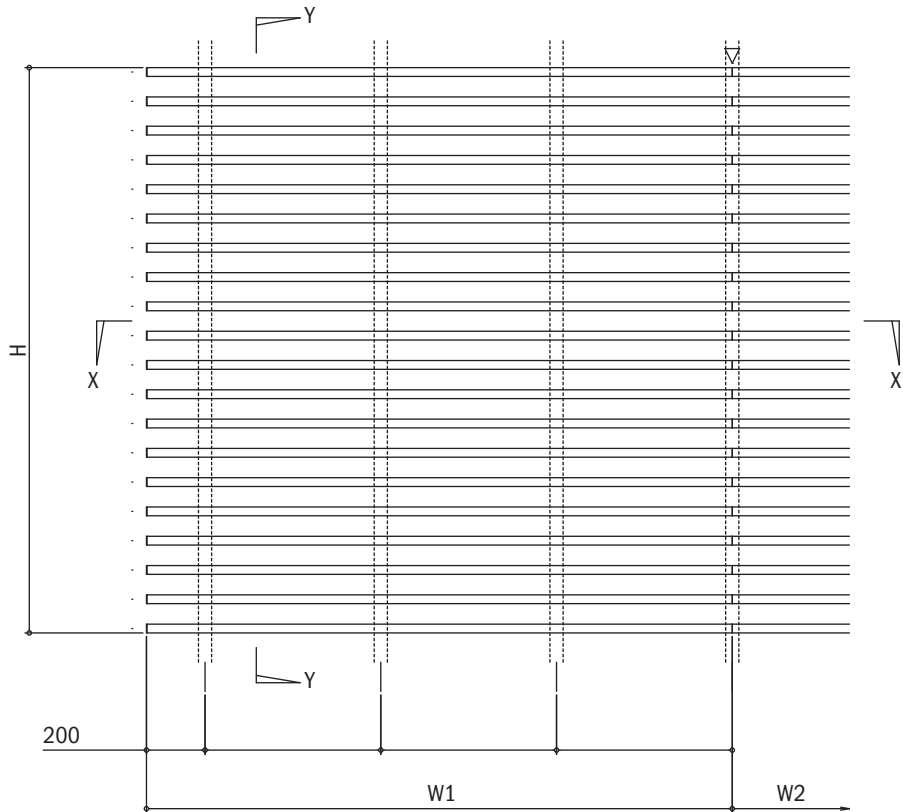
# Interior Wall And Ceiling Direct Applications > Installation Examples



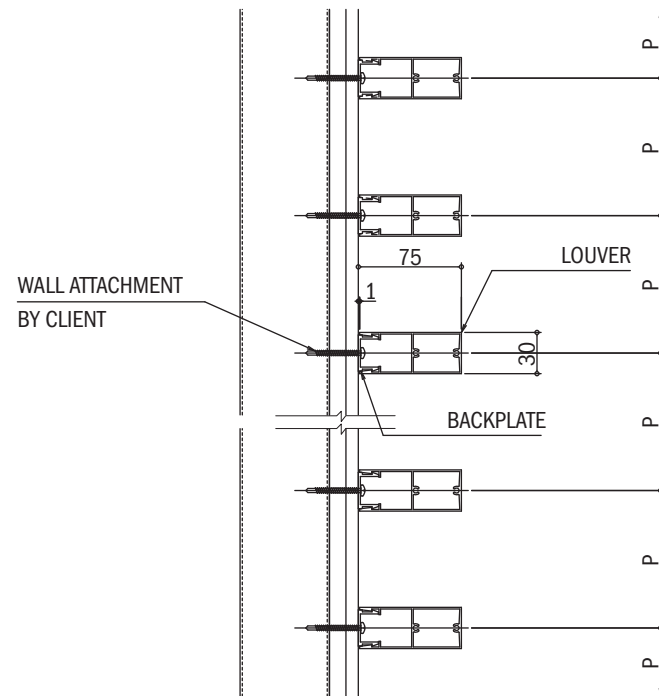
### CROSS SECTION X - X



### PLAN OR ELEVATION VIEW



### CROSS SECTION Y - Y

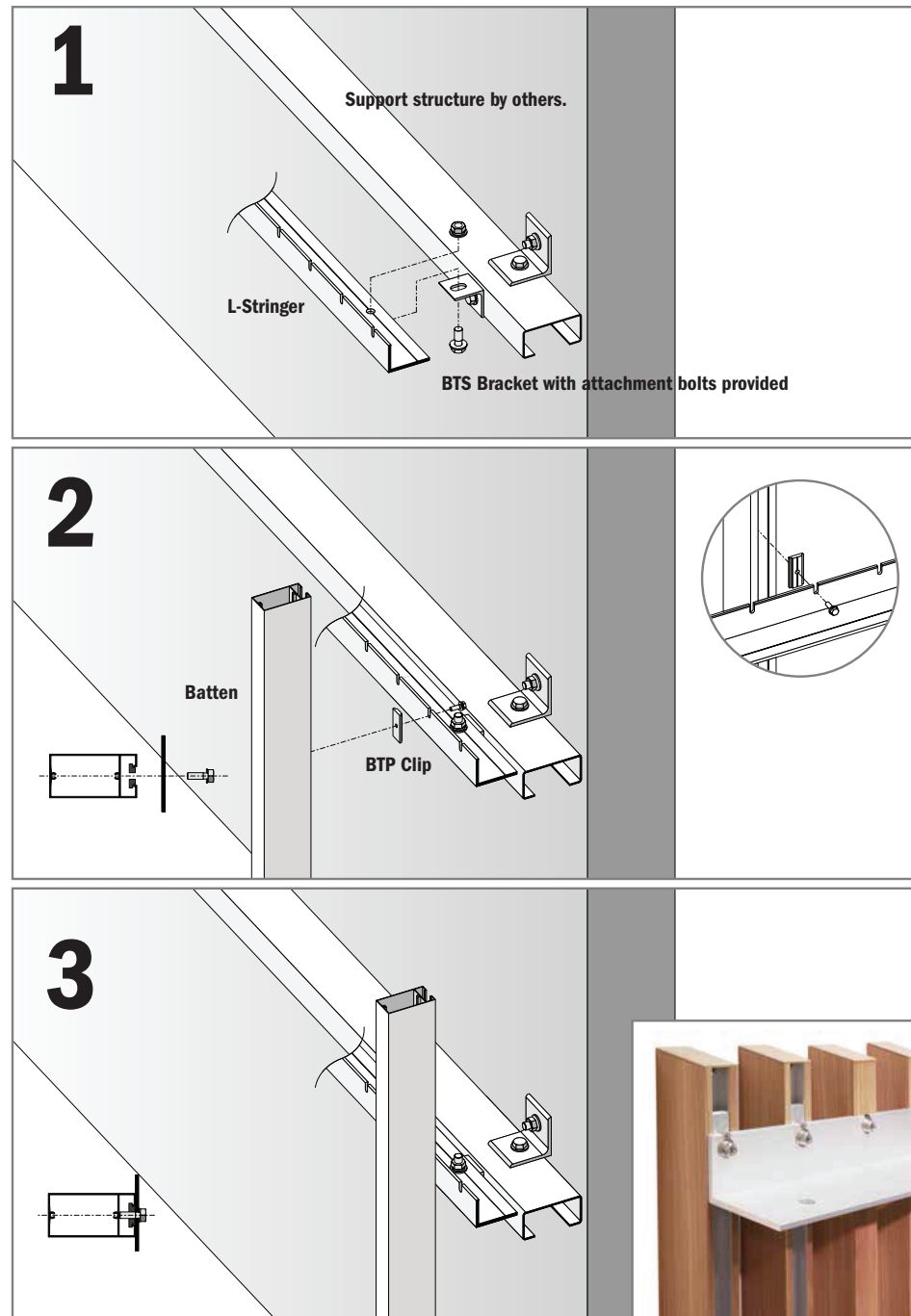


## Fortina Battens > Wall > Stringer Mounted > Interior/Exterior

Stringers come pre-notched for spacing specified.

1. Attach BTS Bracket to supporting structure.
2. Secure L-Stringer to BTS Brackets with the bolts provided.
3. Assemble the Battens onto the Stringers with BTP Clips and tighten to fix them.

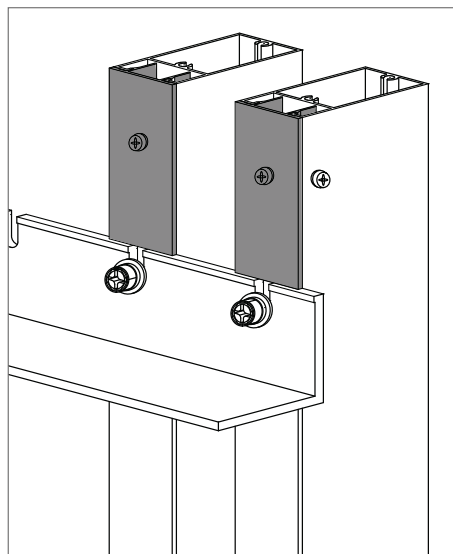
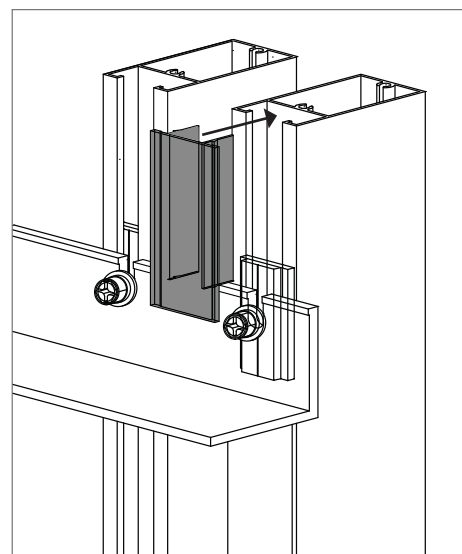
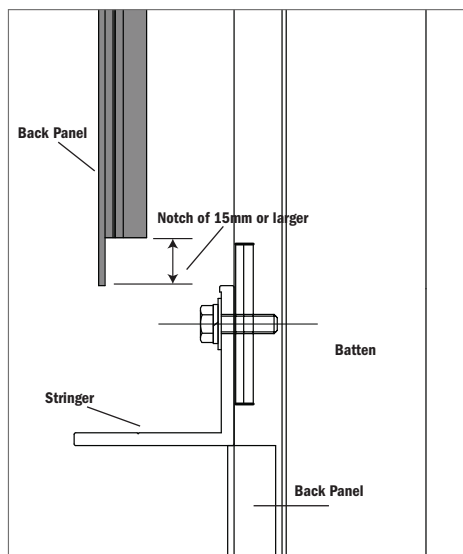
Attach Endcaps to the Battens with screws provided, per instruction on next page.



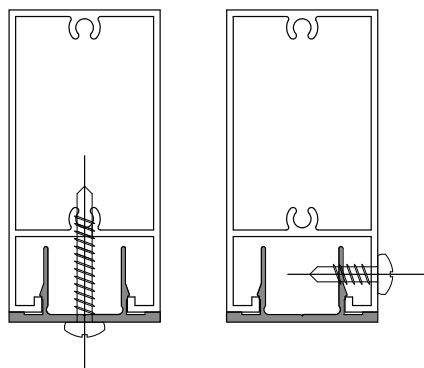
## INSTALLATION INSTRUCTIONS

# Fortina Battens > Wall > Stringer Mounted > Interior/Exterior

### Installation With Back Plate Visible



Back Rails require cutting a notch, as shown above.



Follow instructions mounting Battens to Stringers.

Cut a 15 mm or larger notch at Back Rail to clear installed BTP clip.

Secure Back Rails to Battens with screws through back or sides, as shown at left.

Attach Endcaps to the Battens with screws provided, as shown on the next page.



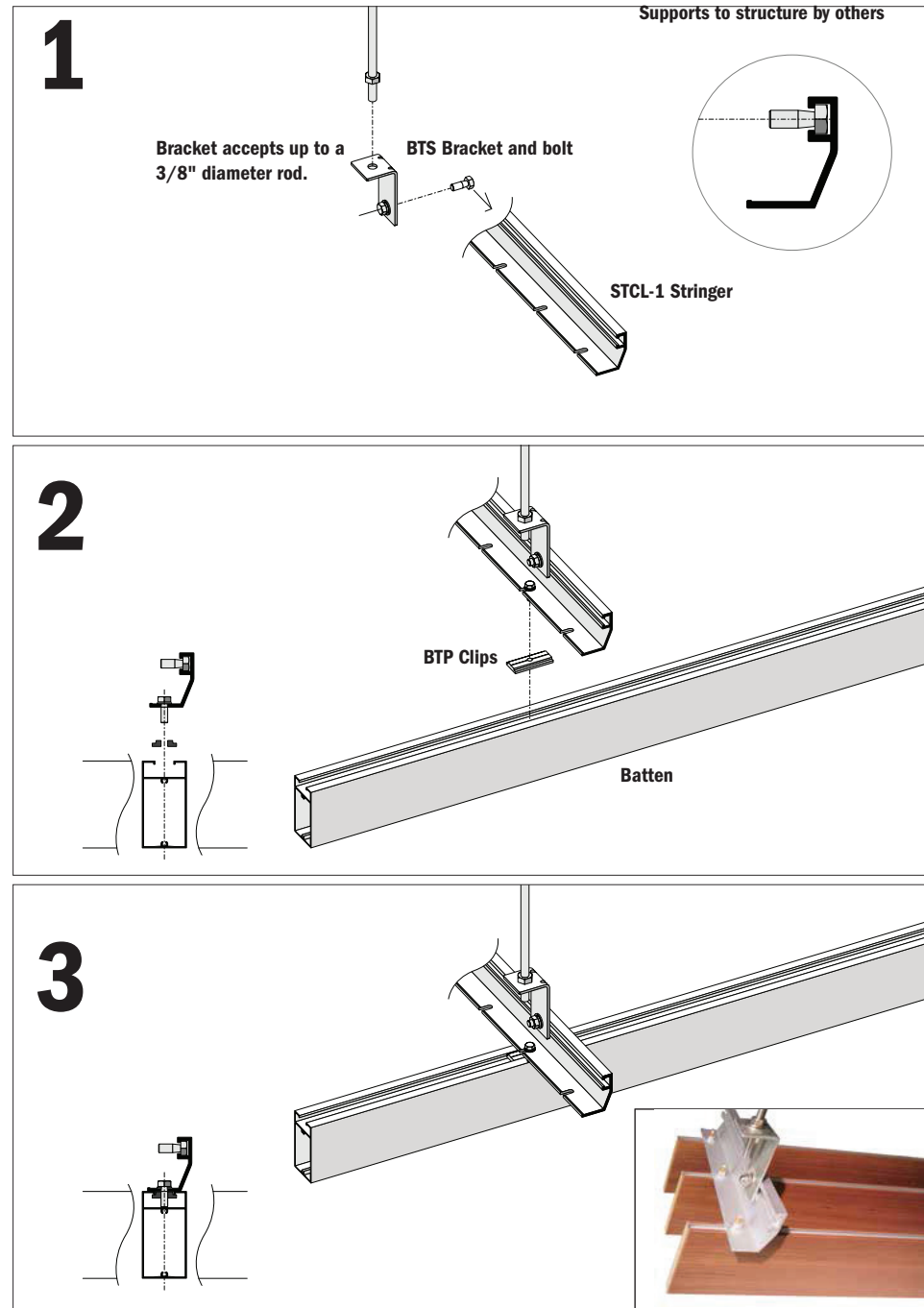
## INSTALLATION INSTRUCTIONS

# Fortina Battens > Ceiling > Stringer Mounted > Interior Only

STCL-1 Stringers are pre-notched per spacing specified. Top channel allows for on-site adjustment of hanging point.

1. Attach the BTS Bracket to your supporting structure. Secure it to the Stringer with bolts provided. The ceiling attachment point can be adjusted by moving bolt along channel before tightening.

2. Attach Endcaps to Battens. Assemble Battens to Stringer with BTP Clips provided and tighten to fix.



## INSTALLATION INSTRUCTIONS

# Fortina Battens > Endcaps

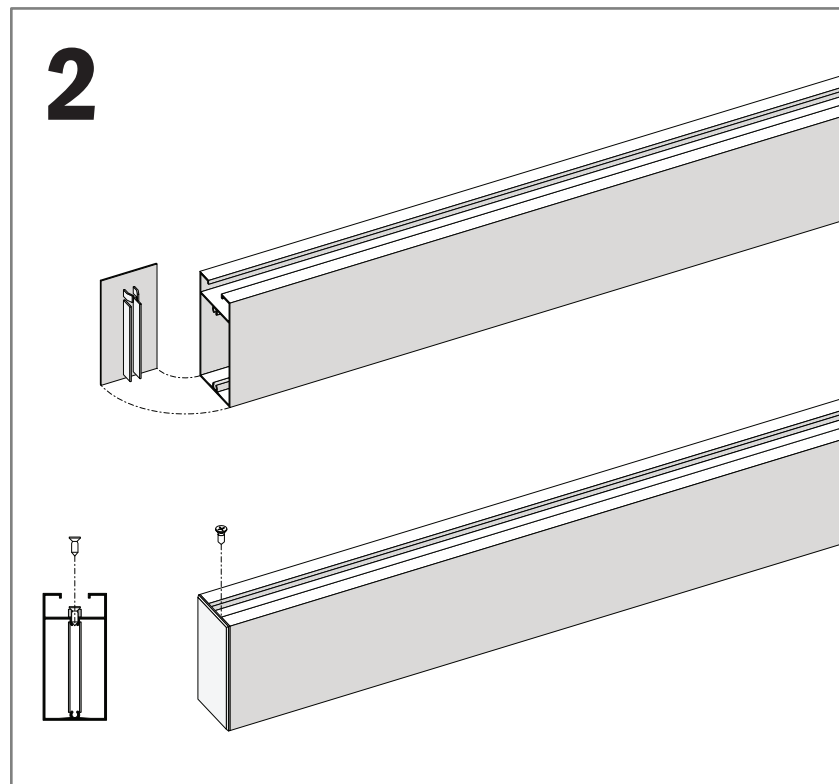
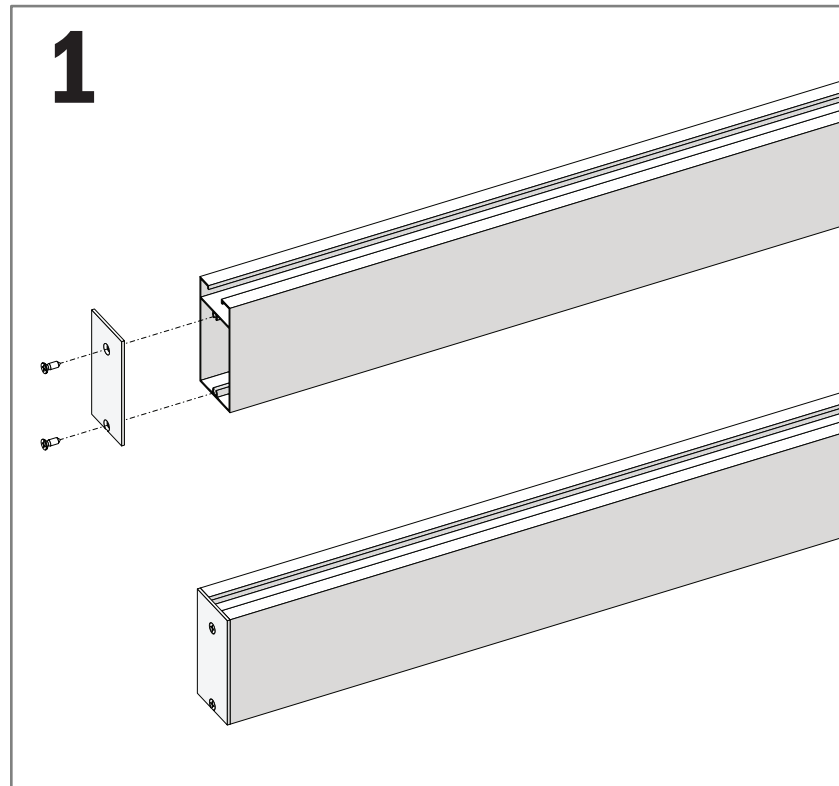
### 1. SCREW-ON Endcap

For all direct attachment  
TLKS- Battens and all  
THS-/THSN- Battens

### 2. SNAP-ON Endcap

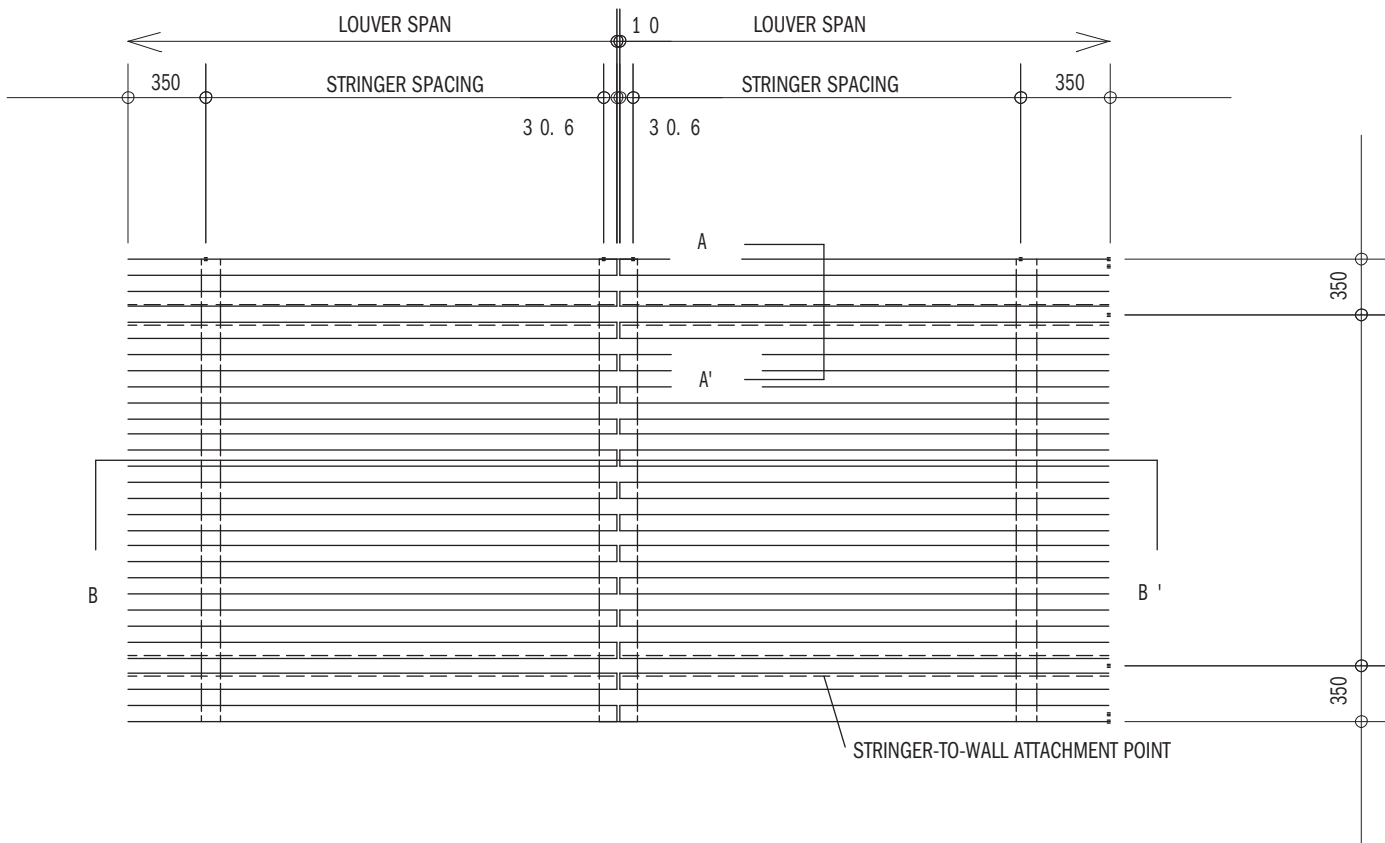
For all THS-/THSN- Battens and  
select direct attachment  
TLKS- Battens only. See  
pages 58-59 for the list of  
direct attachment TLKS Battens.

On exterior vertical installation,  
drill two small weep holes on the  
bottom Endcaps. This will allow  
for any trapped moisture to drain.

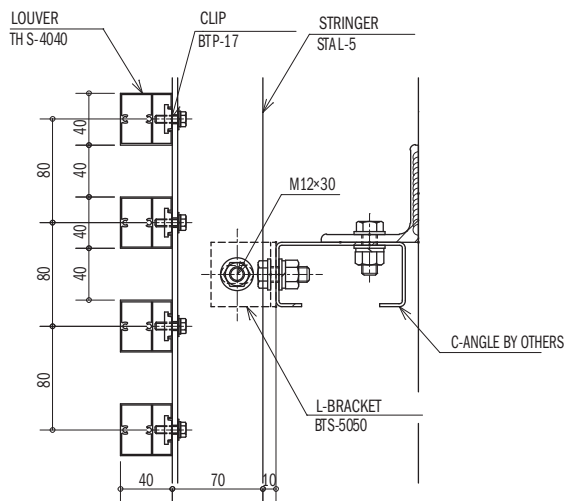


# Interior and Exterior Wall Applications With Stringers > Installation Examples

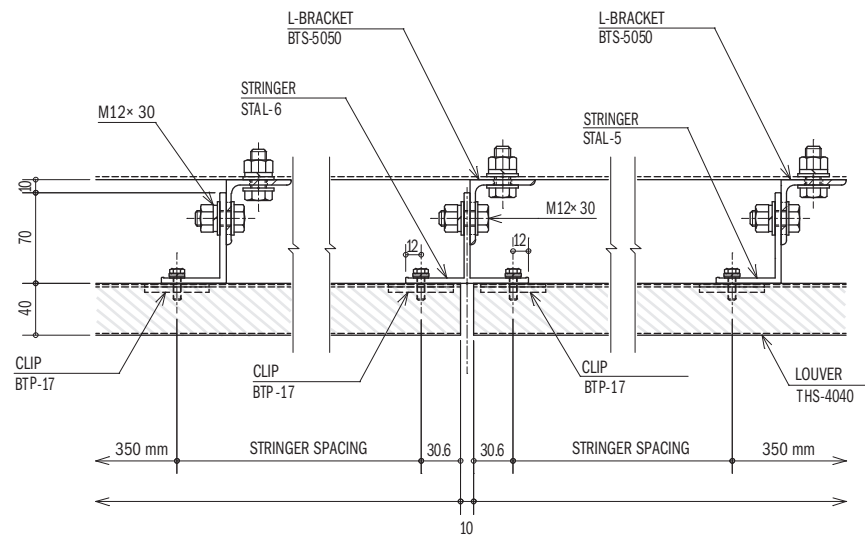
## Interior or Exterior Wall Stringer Application > Horizontal ELEVATION



CROSS SECTION A - A

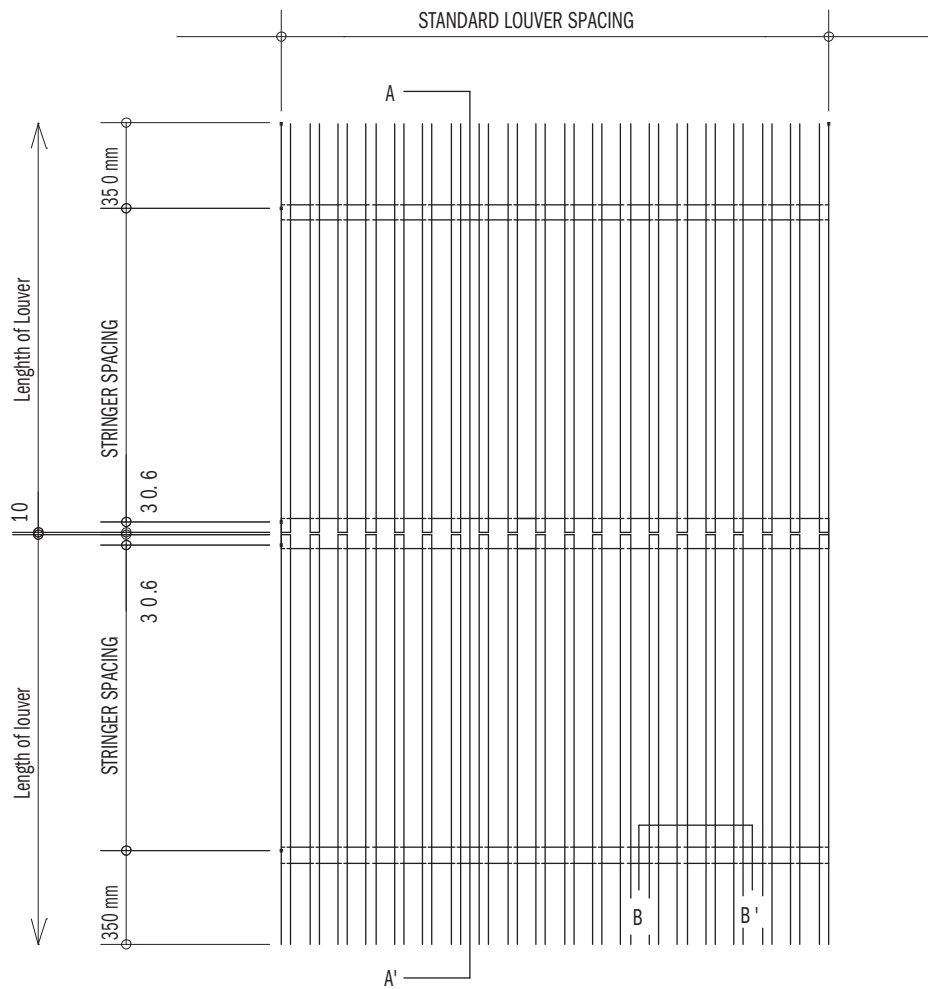


CROSS SECTION B - B

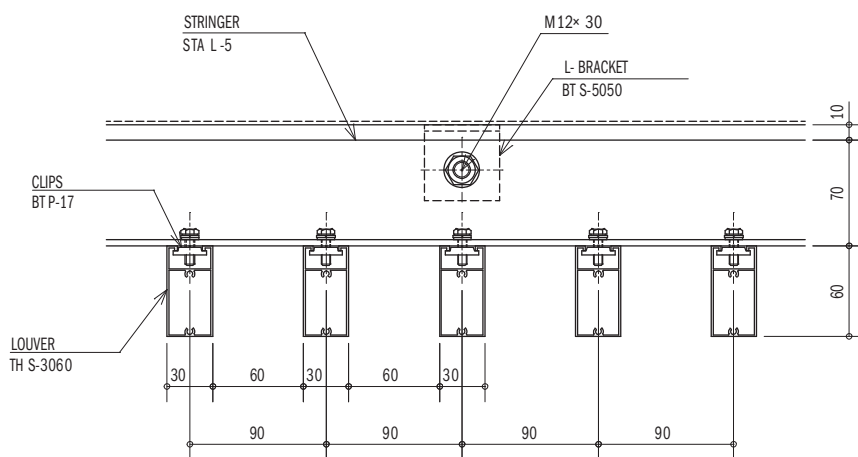




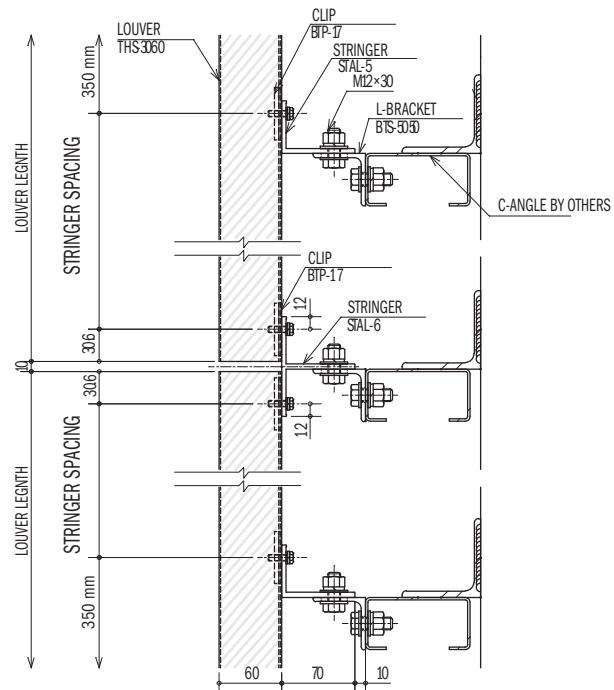
# Interior or Exterior Wall Stringer Application > Vertical ELEVATION



CROSS SECTION B - B

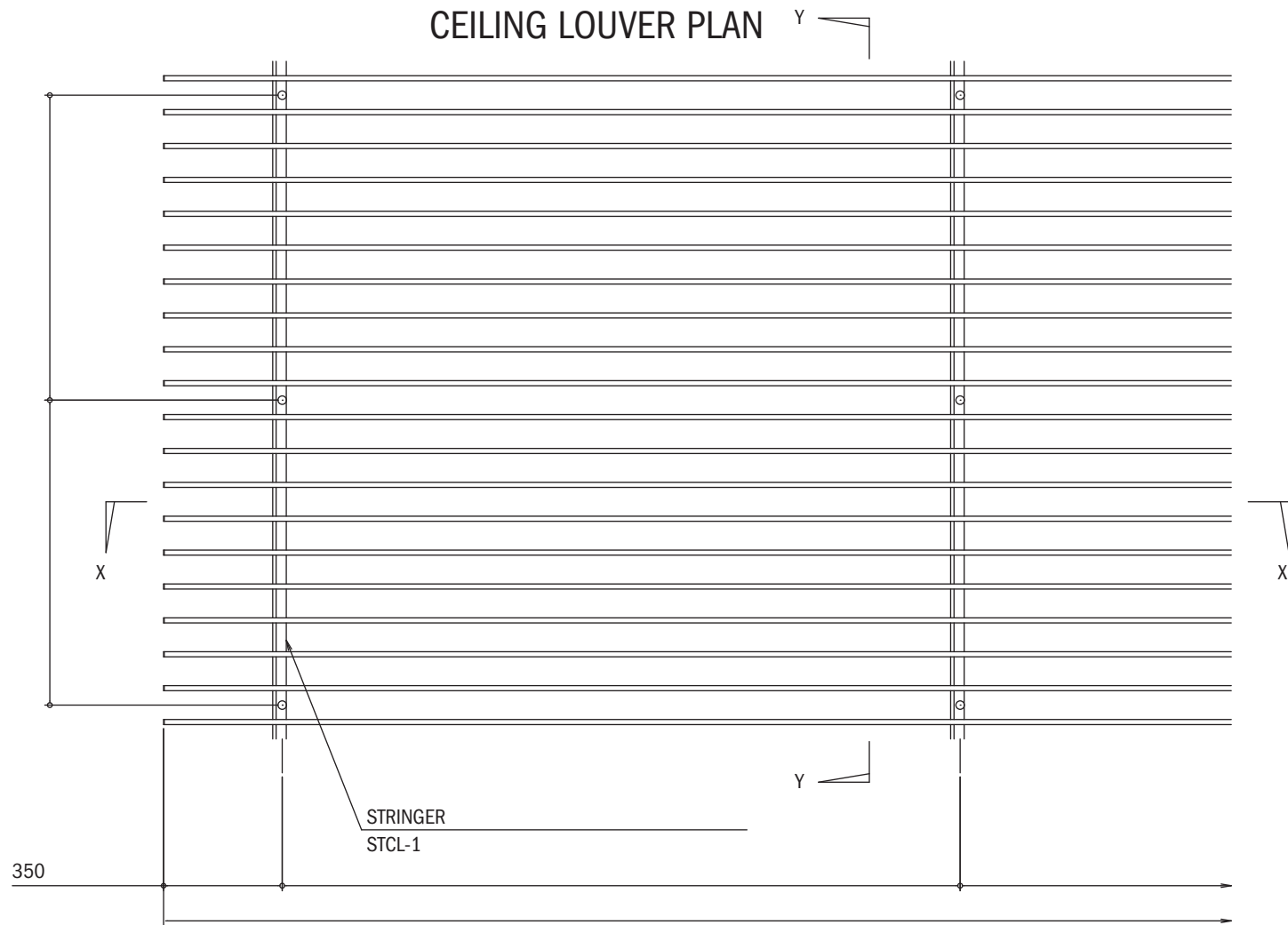


CROSS SECTION A - A

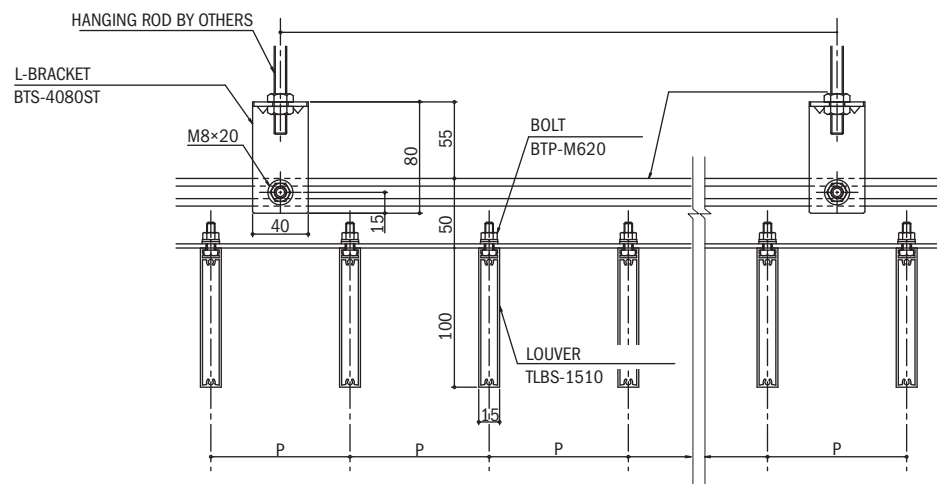


# Interior Ceiling Applications With Stringers > Installation Examples

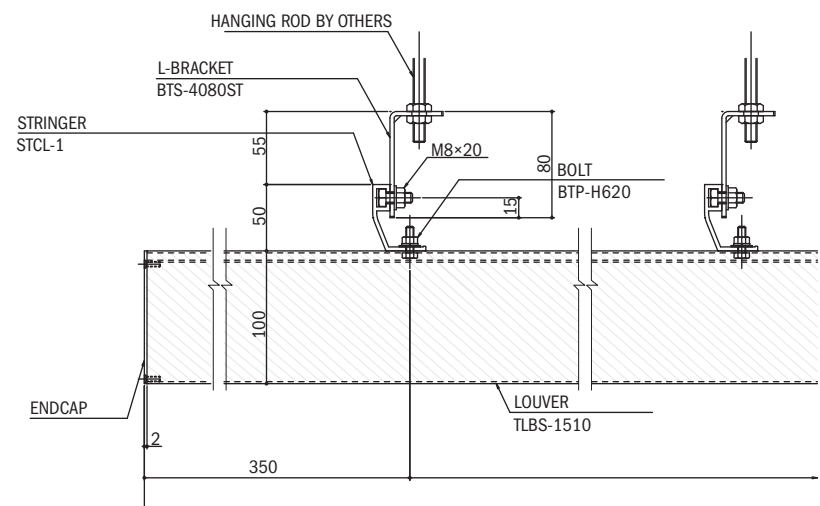
## Interior Ceiling Installation With STCL Stringer



CROSS SECTION Y - Y

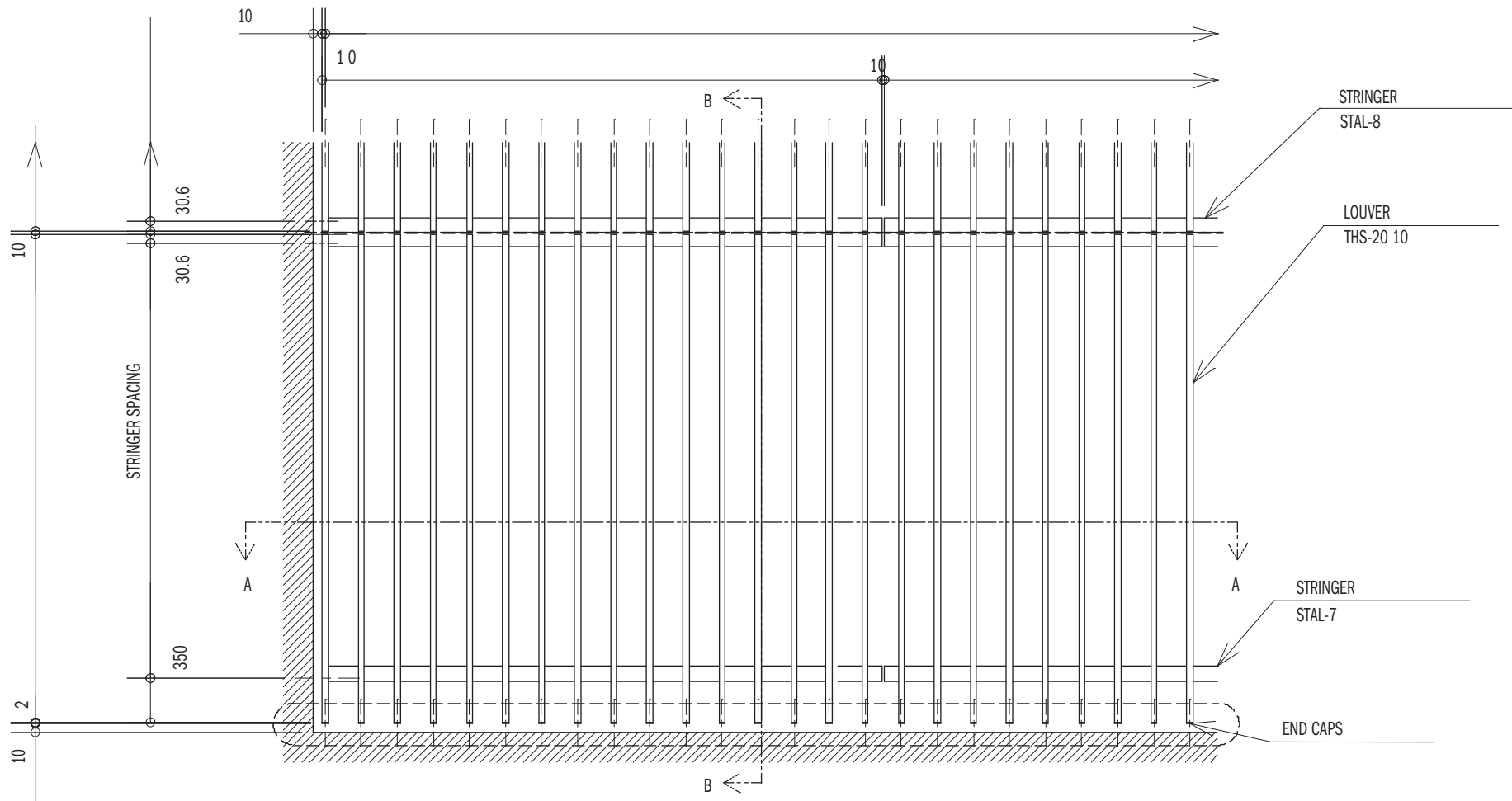


CROSS SECTION X - X

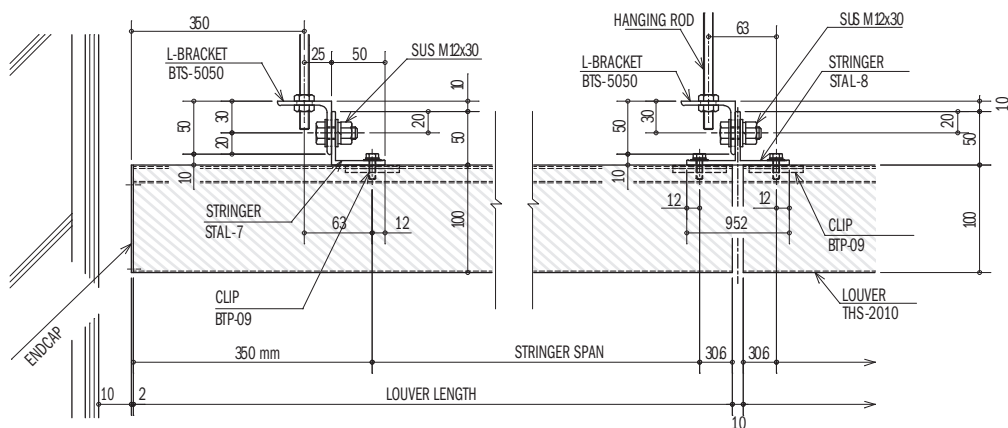


# Interior Ceiling Installation With STCL Stringer

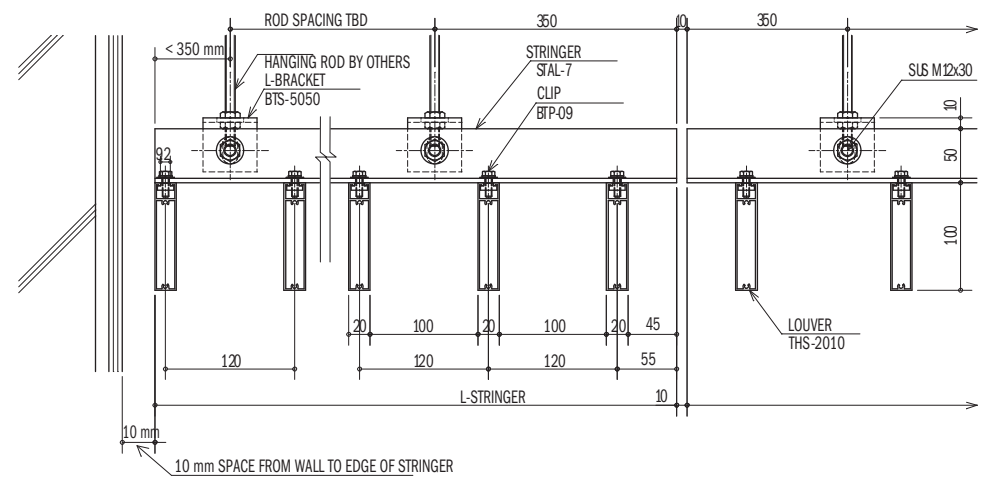
## CEILING LOUVER PLAN



## CROSS SECTION B - B



## CROSS SECTION A - A

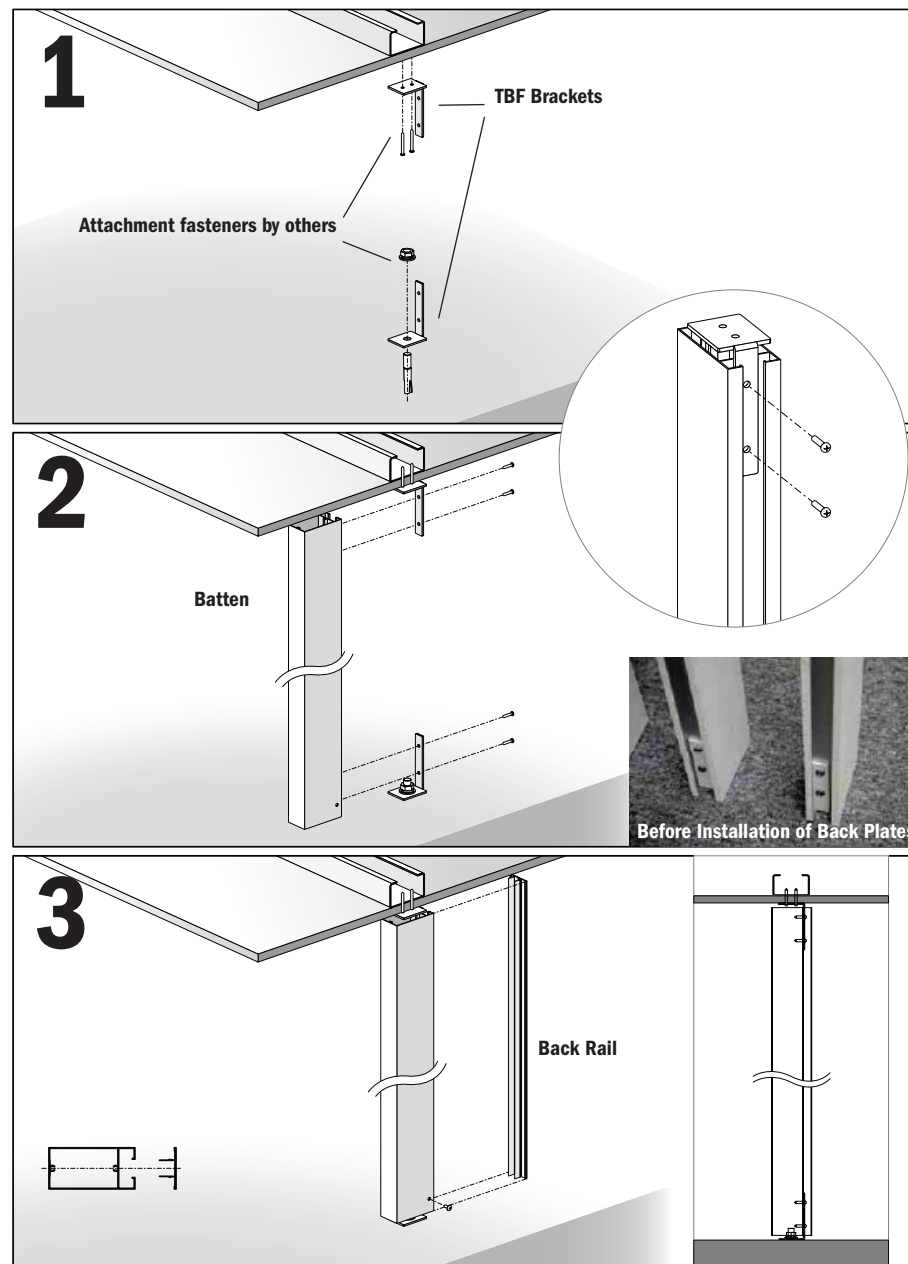


# Fortina Battens > Floor To Ceiling > Interior/Exterior

1. Mount L-Brackets to floor and ceiling structure.

2. Take Batten and slide open side into top and bottom brackets and attach with screws provided. (Batten may need to be cut for perfect fit).

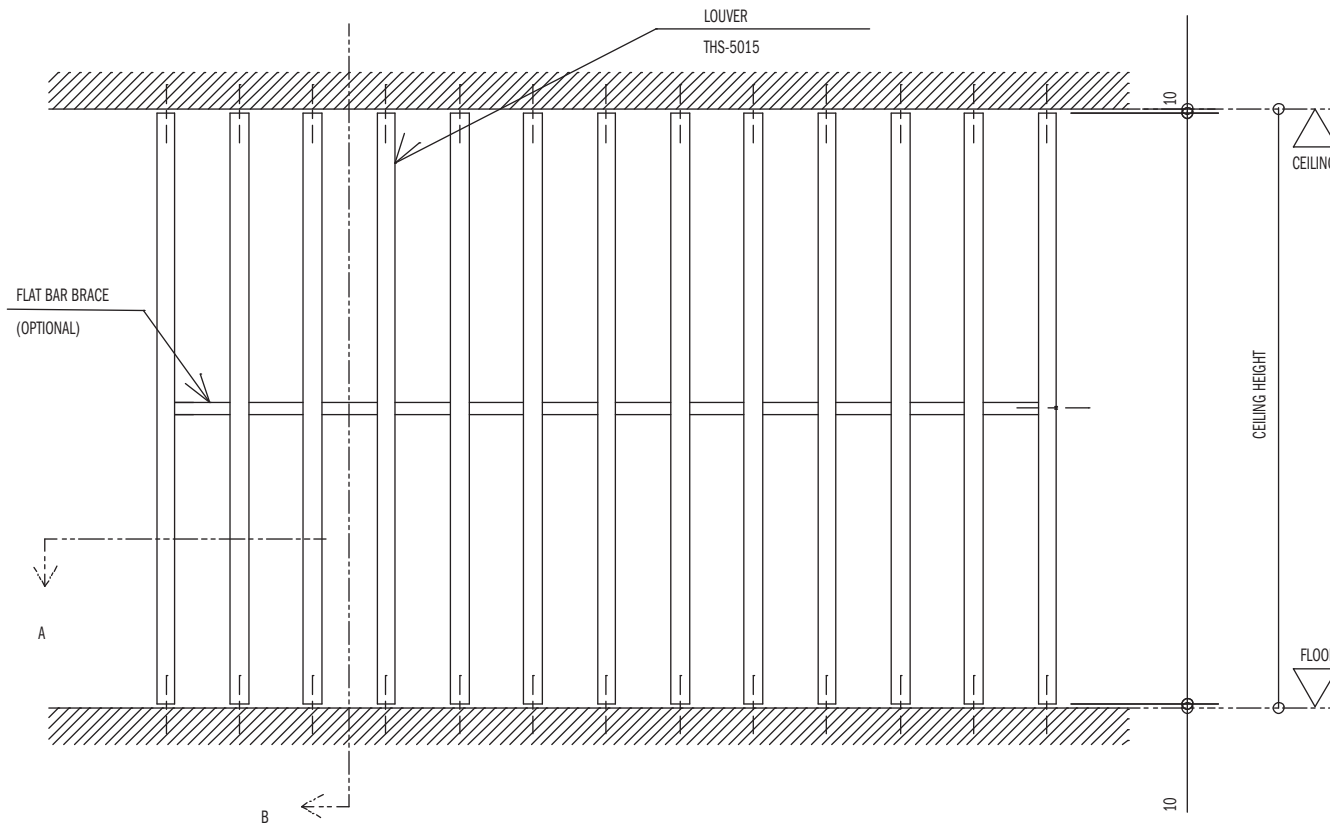
3. Attach Back Rail to Battens and secure with screws provided.



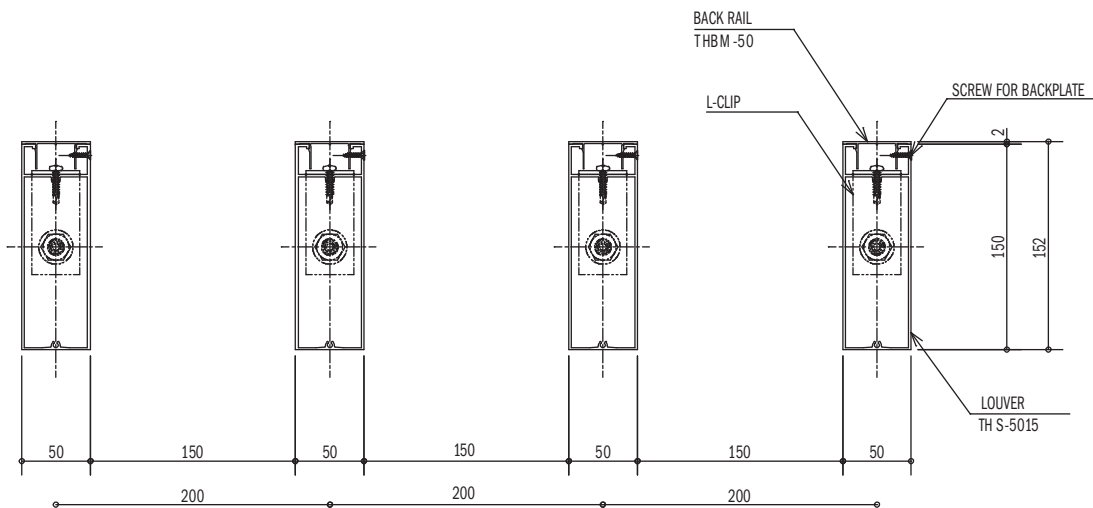
INSTALLATION INSTRUCTIONS

Fortina Battens > Floor To Ceiling > Interior/Exterior > Installation Examples

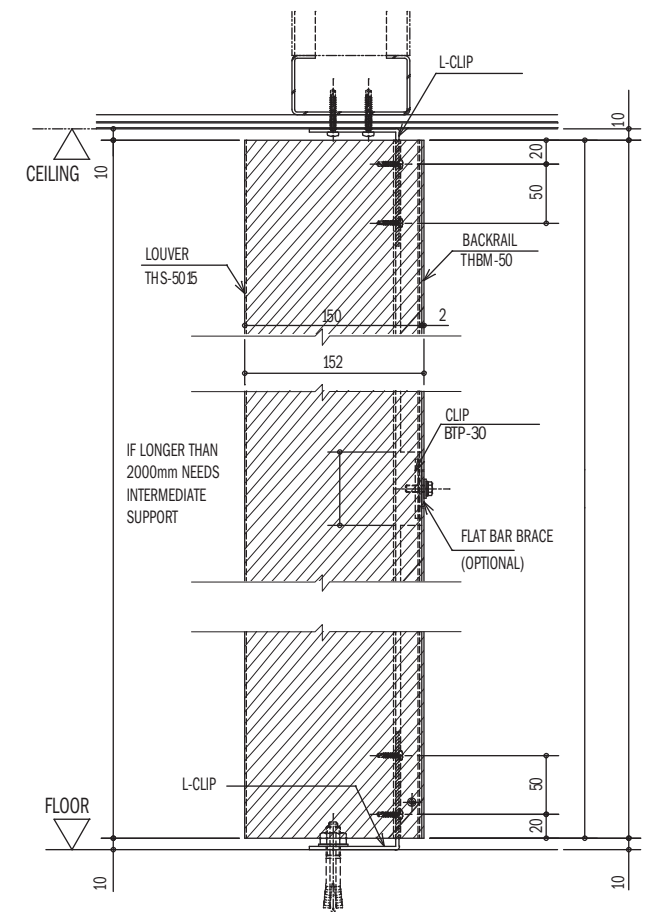
WALL ELEVATION



SECTION A - A



SECTION B - B

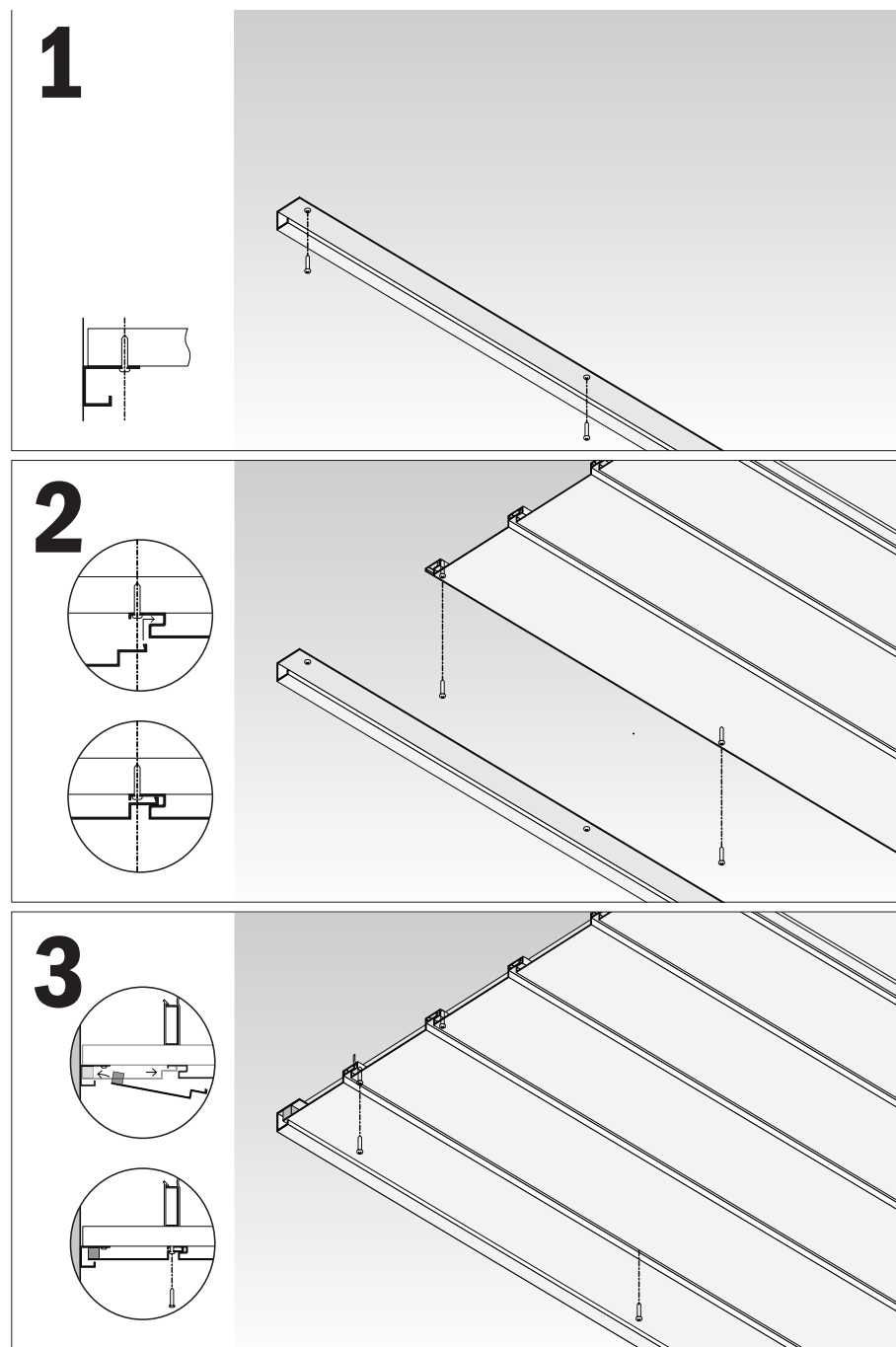


NOTE: 10MM SPACE TOP AND BOTTOM FOR L-CLIP THICKNESS.

# Fortina Slats > Ceiling > Interior/Exterior

1. Install trim piece (if used) to one side of layout.

2. Starting from the other side, attach (tongue and groove) Slats to surface.



## INSTALLATION INSTRUCTIONS

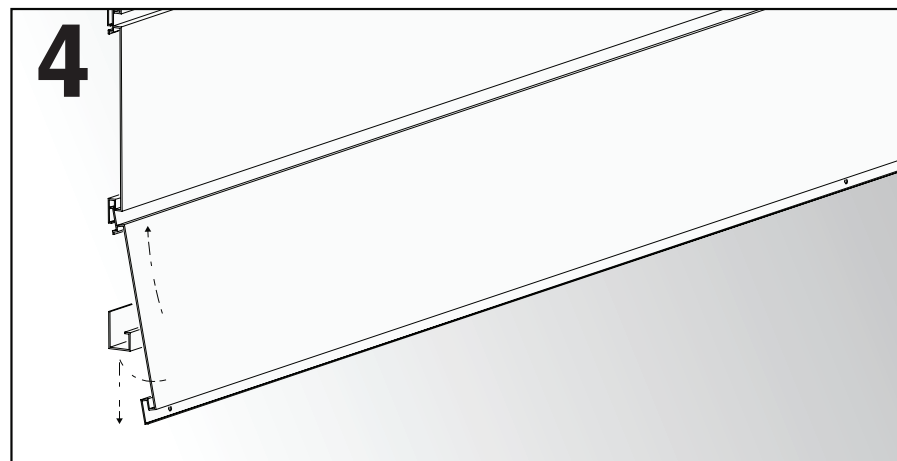
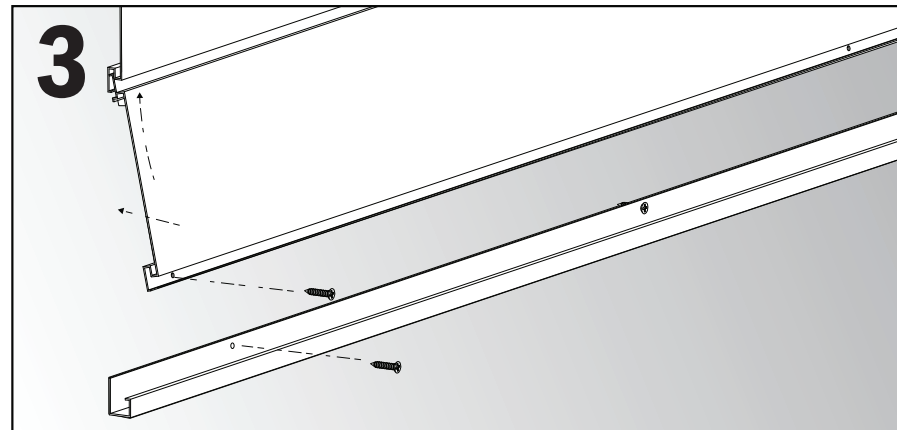
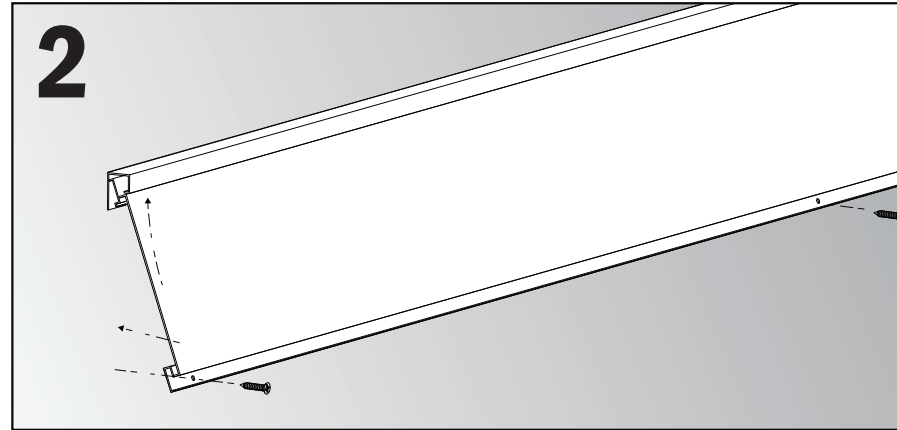
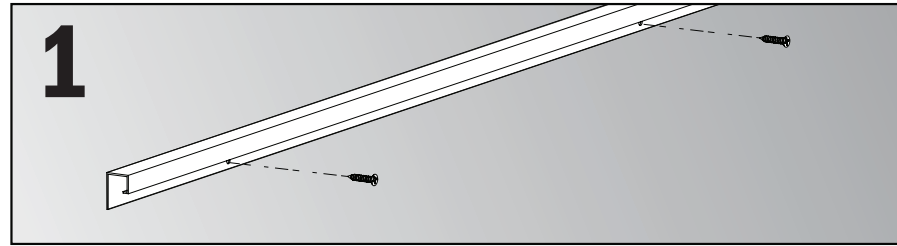
### Fortina Slats > Wall > Interior/Exterior

1. Attach trim piece at top of installation location on wall.

2. Insert Slat into trim piece and attach Slat to wall with screws.

3. Continue mounting the tongue and groove Slats by inserting into the Slat above, so it lodges in place. Install bottom trim piece to wall with screws at correct location to allow the last Slat to be inserted.

4. Install the last slat by sliding it in, up, and down so it rests in bottom trim piece. No need to screws on the bottom Slat.



## TECHNICAL INFORMATION

# FAQ

### GENERAL QUESTIONS:

#### 1. What is Fortina?

Fortina is a decorative wood alternative unlike anything on the market; aluminum Battens and slats are wrapped in a non-PVC film that mimics woodgrain colors and textures. It is lightweight, easily customizable, durable, quick to install, effortless to maintain, and, most importantly, beautiful.

#### 2. What are the attributes of Fortina?

Fortina has been widely used in interiors and exteriors of commercial and residential buildings since its inception in Japan in 2009. Fortina's lightweight dimensional stability, uniform coloration, and incombustible material allow for a clean and quick installation.

#### 3. How many sizes are there?

Our Battens come in 36 sizes, offered in square, rectangular, triangular, and round shapes. The smallest profile is 20mm x 40mm (3/4" x 1 1/2") and the largest is 50mm x 150mm (2" x 6").

Our slats come in 5 sizes with a 10mm reveal (ranging from 60mm to 200mm wide), and 3 sizes with no reveal (ranging from 100mm to 150mm wide).

All profile dimensions are in metric.

#### 4. What is the longest Batten/slat length available?

16'-0" is the longest length for ocean shipping. 9'-6" is the longest length for air freight – additional charges will apply for any length exceeding 9'-6".

### FINISHES:

#### 5. How many finishes are there?

A total of 109 films are available in interior and exterior grade. Anodized and painted options are also available. Finish codes start with TE for interior finishes and TA for exterior finishes.

#### 6. Are all the finishes the same price?

Exterior finishes are slightly more expensive than interior finishes. Please request a quote for more specific pricing.

#### 7. Can the Exterior spec be used indoors? Is it more durable? Can an indoor spec be used outdoors if it is UV coated?

Exterior finishes can be used for indoors, and durability is the same.

Interior grade finishes cannot be used outdoors even with the UV coat, because the printed ink specification is different

### TEST RESULTS

#### 8. What is the fire rating?

Fortina has passed these certifications for non flammability.

- ASTM E84 CLASS A Fire Rating (FSI10/ SDI10)
- NM2239 and 2244
- European Standard CLASS B (French M1)

#### 9. How does the product hold up in hot/humid climates and near "water"?

Film used for Fortina have passed two year exposure test (EMMAQUA) in New River, Arizona.

### WARRANTY / CARE AND MAINTENANCE

#### 10. What is the warranty?

We offer a 10-year limited warranty. Please visit our Warranty page for more information.

#### 11. Will the Battens withstand power washing?

We do not recommend power washing the Battens/slats.



## TECHNICAL INFORMATION

# FAQ

### **12. Do the Battens scratch easily? What can we do about scratches?**

Scratch test result 2B. Touch up paint is the most convenient way to hide scratches, but it's not perfect. A 10% overage is highly recommended for the purpose of having extra components to cover any damages beyond touch up. A touch up pen matching the HD1 paper can be provided upon request.

### **13. Is there any type of care/maintenance required?**

Wipe with a wet soft cloth or wet sponge, then wipe with a dry cloth. Do not brush with steel brush, steel wool or sandpaper. Do not handle the Battens on surfaces with grit or gravel as it will cause scratches. Do not use organic solvent such as alcohol for cleaning. Check bolts, nuts or screws in a timely manner. More maintenance may be required in industrial areas or near the ocean.

### **14. Can the Battens get wet?**

While it's not ideal for interior grade finishes, our exterior grade finishes can get wet as they are designed to be outside.

## INSTALLATION

### **15. What is the best way to cut the Battens on site?**

Aluminum cutting saw is required along with long table. A new blade is recommended.

### **16. Is there an explanation on how the joint between the Battens (and spandrels) works for a very long ceiling?**

We recommend leaving an expansion gap of 1-2 mm (1/8" max) between Battens/slats.

### **17. Do the Stringers and brackets come in a variety of sizes and finishes?**

Stringers come in different sizes depending on the application. anodized aluminum is the standard finish, but they can also be powder coated.

### **18. How much does the "average" THS-4080 Batten weigh per foot?**

As an example, THS-4080 weighs 0.688 lbs per linear foot. Batten weights vary based on profile size.

### **19. What is the lead-time?**

Fortina is made to order. Our typical lead time is 12-15 weeks.

### **20. Is there any hardware to hang/merchandise products from the Battens?**

No, Battens are only decorative.

### **21. Can the Battens be curved?**

No, the Battens cannot be curved.

## PURCHASING FORTINA

### **22. Do you have local reps?**

All Fortina inquiries are handled from our Head Office in California. Please call (800) 350-4127.

### **23. What is the square footage price of Fortina?**

Pricing is not based on square footage. It varies based on profile size and quantity ordered. Please call (800) 350-4127 or request a quote on our website.

### **24. How can I get samples?**

Click "Order Samples" on the Fortina website or call (800) 350-4127.

### **25. Do you offer an expedited option?**

The production time is set, but shipping can be expedited via air freight.

# Fortina Care and Maintenance

## Cleaning

- Wipe with dry cloth.
- If necessary soap and water is fine to clean.
- No harsh chemicals are recommended.
- Do not use organic solvent such as alcohol for cleaning.
- Do not brush with steel brush, steel wool, or sandpaper.
- Do not handle Battens on surfaces with grit or gravel.
- More maintenance required in industrial areas or near ocean.

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# Fortina MSDS > Interior

Date: Feb. 13, 2015  
Reference number: SBR-0284

To: B+N Industries, Inc.

## Material Safety Data Sheet

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	FORTINA (Interior Type)
Name of manufacturer	Toppan Cosmo, Inc.
Address	3-19-26 Shibaura, Minato-ku, Tokyo, Japan Toppan Shibaura Building
Telephone No.	03-5418-3500
Emergency contact	03-5418-3680 (Product Engineering Group, Product Manufacturing Department, Development Division)
Fax No.	03-5418-3676

### 2. HAZARDS IDENTIFICATION

GHS classification	Not applicable.
Hazard statement	(1) Non-hazardous material and risk is low. (2) Prolonged inhalation of dust generated by cutting may affect the respiratory organs. (3) If dust generated by cutting gets into the eyes, the eyeballs may be damaged. (4) Some pigments and stabilizers contain heavy metals, Cr (trivalent), Sb and Ni.
Effect to environment	None known.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Classification of single product or mixture	Mixture (Printed film, adhesive and aluminum)
Chemical name (Product name)	Aluminum material coated with polyolefin resin sheet
Ingredients and contents	Polyolefin resin, ink pigment, polyurethane resin, acrylic resin and aluminum
Chemical formula or structural formula	Not applicable since it is a mixture
Reference Number in Gazetted List in Japan	Not applicable because it is a mixture
UN classification and UN number	Not applicable because it is a mixture

### 4. FIRST AID MEASURES

IF IN EYES	Wash in running water without rubbing because dust and fragments generated when cutting may damage the eyeballs. Consult with a medical specialist.
IF ON SKIN	Prolonged contact of dust generated by cutting with skin may cause rough skin. If skin inflammation occurs, consult with a medical specialist.
IF INHALED	If any discomfort is experienced, immediately remove to fresh air.
IF SWALLOWED	After vomiting, immediately get medical attention.

# Fortina MSDS > Interior

Date: Feb. 13, 2015  
Reference number: SBR-0284

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Extinguishing media	Minister of Land, Infrastructure, Transport and Tourism, take measures such as evacuating upwind and wearing protective equipment in the event of fire because toxic substances such as black smoke and carbon monoxide may be generated in case the product is exposed to high temperature and the decorative surface layer burns. Water spray, dry chemical, foam
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## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

Handling	Wear protective gloves (cotton gloves, etc.) when handling. Wear protective glasses and dust protective mask when cutting or fabricating. Sufficiently ventilate the workplace. Provide dust collectors.
STORAGE	Take care not to cut your hands on edges of the product. Store in packaged state in indoor general warehouse avoiding direct sunlight. Be careful to keep dry. Avoid falling, dropping and friction.

---

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

[Exposure control]	
None	
[Personal protection]	Equipment countermeasure      None
Respiratory protective equipment	Wear appropriate protective equipment (dust protective mask, etc.) when performing work that generates dust.
Protective glasses	Wear appropriate protective equipment (goggles, full-surface shield, etc.) when performing work that generates dust.
Protective gloves	Wear appropriate protective equipment (synthetic rubber gloves, arm covers, etc.).
Protective clothes	Wear appropriate protective clothes when performing work that generates dust.

---

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, etc.	Bar-type solid form
Boiling point	Not applicable.
Vapor pressure	Not applicable.
Volatility	Not applicable.
Melting point	Not applicable.
Specific gravity	2.7 g/m <sup>2</sup>
Initial boiling point	Not applicable.
Solubility in water	Not applicable.
Others	Not applicable.

# Fortina MSDS > Interior

Date: Feb. 13, 2015  
Reference number: SBR-0284

## 10. SAFETY AND REACTIVITY

Flash point	Decorative surface layer: Approx. 300°C .
Ignition point	Decorative surface layer: Approx. 400°C.
Explosion limit	Upper limit: No data. Lower limit: No data.
Combustibility	Decorative surface layer: Combustible
Ignitability (pyrophoricity, reactivity with water)	None known.
Oxidizability	Contact with chemical substances, such as acid, may generate harmful gas.
Autoreactivity, explosiveness	None.
Dust explosiveness	Lower explosive limit: 45g/m <sup>3</sup>
Stability, reactivity	Decorative surface layer: Relatively weak against alkali
Others	None known.

## 11. TOXICOLOGICAL INFORMATION (Including case with people and epidemiological information)

Skin corrosivity	None known.
Irritation (skin, eyes)	Prolonged contact of dust generated by cutting with skin may cause rough skin.
Sensitizing potential	None known.
Acute toxicity	None known.
Subacute toxicity	None known.
Chronic toxicity	None known.
Carcinogenicity	None known.
Mutagenicity	None known.
Reproductive toxicity	None known.
Teratogenicity	None known.
Others (Including generation of toxic gas by reaction with water, etc.)	None known.
Others	None known.

## 12. ECOLOGICAL INFORMATION

Degradability	None known.
Accumulative property	None known.
Fish toxicity	None known.

## 13. DISPOSAL CONSIDERATIONS

This product and its cut pieces can be classified as "scrap metal" specified by law.  
Ask an appropriate recovery company to dispose them of.

## 14. TRANSPORT INFORMATION

Load in a manner to prevent falling, dropping, abrasion, etc. during transportation and provide reliable measures to prevent load shifting.

Keep dry.

## 15. REGULATORY INFORMATION

None

## Fortina MSDS > Interior

Date: Feb. 13, 2015  
Reference number: SBR-0284

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Tourism, MFN-0717 F☆☆☆☆

Materials containing asbestos are not used.

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The contents of this sheet are based on reference materials, information and data that are available at present and may be revised according to revision of laws and regulations as well as due to new findings. In addition, the precautions described in this document are intended for use under normal conditions. In case of special handling is required, provide appropriate safety measures for the application and usage.

The contents of this sheet are for provision of information and are not guaranteed.

# Fortina MSDS > Exterior

Date: Jan. 21, 2015  
Reference number: SBR-0281

To:  
Property name:

## **Material Safety Data Sheet**

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	FORTINA: Exterior Type
Name of manufacturer	Toppan Cosmo, Inc.
Address	3-19-26 Shibaura, Minato-ku, Tokyo, Japan Toppan Shibaura Building
Telephone No.	03-5418-3500
Emergency contact	03-5418-3680 (Product Engineering Group, Product Manufacturing Department, Development Division)
Fax No.	03-5418-3676

### 2. HAZARDS IDENTIFICATION

GHS classification	Not applicable.
Hazard statement	(1) Non-hazardous material and risk is low. (2) Prolonged inhalation of dust generated by cutting may affect the respiratory organs. (3) If dust generated by cutting gets into the eyes, the eyeballs may be damaged.
Effect to environment	None known.

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

Classification of single product or mixture	Mixture (Aluminum, printed film and adhesive)
Chemical name (Product name)	Composite material of laminated aluminum and resin sheets
Ingredients and contents	Aluminum, polyolefin resin, ink pigment, polyvinylidene fluoride, methacrylic acid alkyl ester/acrylic acid alkyl ester copolymer, etc.
Chemical formula or structural formula	Not applicable because it is a mixture
Reference Number in Gazetted List in Japan	Not applicable because it is a mixture
UN classification and UN number	Not applicable because it is a mixture

### 4. FIRST AID MEASURES

IF IN EYES	Wash in running water without rubbing because dust and fragments generated when cutting may damage the eyeballs. Consult with a medical specialist.
IF ON SKIN	Prolonged contact of dust generated by cutting with skin may cause rough skin. If skin inflammation occurs, consult with a medical specialist.
IF INHALED	If any discomfort is experienced, immediately remove to fresh air.
IF SWALLOWED	After vomiting, immediately get medical attention.



# Fortina MSDS > Exterior

Date: Jan. 21, 2015  
Reference number: SBR-0281

	Minister of Land, Infrastructure, Transport and Tourism, take measures such as wearing protective equipment according to the situation because toxic and corrosive fluorine-containing substances can be generated in case the product is exposed to high temperature and the decorative surface layer burns.
Extinguishing media	Water spray, dry chemical, foam, carbon dioxide

## 6. ACCIDENTAL RELEASE MEASURES

Not applicable.

## 7. HANDLING AND STORAGE

Handling	Wear protective gloves (cotton gloves, etc.) when handling. Wear protective glasses and dust protective mask when cutting or fabricating. Sufficiently ventilate the workplace. Provide dust collectors.
STORAGE	Take care not to cut your hands on edges of the product. Store in packaged state in indoor general warehouse avoiding direct sunlight. Be careful to keep dry. Avoid falling, dropping and friction.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

[Exposure control]	None
[Personal protection]	Equipment countermeasure      None
Respiratory protective equipment	Wear appropriate protective equipment (dust protective mask, etc.) when performing work that generates dust.
Protective glasses	Wear appropriate protective equipment (goggles, full-surface shield, etc.) when performing work that generates dust.
Protective gloves	Wear appropriate protective equipment (synthetic rubber gloves, arm covers, etc.).
Protective clothes	Wear appropriate protective clothes when performing work that generates dust.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance, etc.	Bar-type solid form
Boiling point	Not applicable.
Vapor pressure	Not applicable.
Volatility	Not applicable.
Melting point	Not applicable.
Specific gravity	2.7 g/m <sup>2</sup>
Initial boiling point	Not applicable.
Solubility in water	Not applicable.
Others	Not applicable.

# Fortina MSDS > Exterior

Date: Jan. 21, 2015  
Reference number: SBR-0281

## 10. SAFETY AND REACTIVITY

Flash point	Decorative surface layer: No data
Ignition point	Decorative surface layer: No data
Explosion limit	Upper limit: No data. Lower limit: No data.
Combustibility	Decorative surface layer: Combustible
Ignitability (pyrophoricity, reactivity with water)	None known.
Oxidizability	None under normal handling conditions
Flammability	Toxic gas (hydrogen fluoride, carbon oxide, etc.) may be generated.
Autoreactivity, explosiveness	None known.
Dust explosiveness	Lower explosive limit: 45g/m <sup>3</sup>
Stability, reactivity	Decorative surface layer: May react with strong oxidizers.
Others	None known.

## 11. TOXICOLOGICAL INFORMATION (Including case with people and epidemiological information)

Skin corrosivity	None known.
Irritation (skin, eyes)	Prolonged contact of dust generated by cutting with skin may cause rough skin.
Sensitizing potential	None known.
Acute toxicity	None known.
Subacute toxicity	None known.
Chronic toxicity	None known.
Carcinogenicity	None known.
Mutagenicity	None known.
Reproductive toxicity	None known.
Teratogenicity	None known.
Others (Including generation of toxic gas by reaction with water, etc.)	None known.
Others	None known.

## 12. ECOLOGICAL INFORMATION

Degradability	None known.
Accumulative property	None known.
Fish toxicity	None known.

## 13. DISPOSAL CONSIDERATIONS

This product and its cut pieces can be classified as "scrap metal" specified by law.  
Ask an appropriate recovery company to dispose them of.

## 14. TRANSPORT INFORMATION

Load in a manner to prevent falling, dropping, abrasion, etc. during transportation and provide reliable measures to prevent load shifting.  
  
Keep dry.

## 15. REGULATORY INFORMATION

None

## Fortina MSDS > Exterior

Date: Jan. 21, 2015  
Reference number: SBR-0281

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Tourism, MFN-0717 F☆☆☆☆.

Materials containing asbestos are not used.

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The contents of this sheet are based on reference materials, information and data that are available at present and may be revised according to revision of laws and regulations as well as due to new findings. In addition, the precautions described in this document are intended for use under normal conditions. In case of special handling is required, provide appropriate safety measures for the application and usage.

The contents of this sheet are for provision of information and are not guaranteed.

Toppan Cosmo, Inc.

## Fortina Warranty > p. 1

### 1. Limited Warranty:

For Toppan Products used according to the “Conditions of Use” specified in Section 2 of this Exhibit B, Toppan shall warrant the below during the limited warranty period set forth in this Section 1 (the “Warranty”) except as specified in Section 3 of this Exhibit B as exclusions or limitations.

- i. No significant blister and peel for the Warranty Period; and  
\*It is intended for the defects that have peeled off in their natural condition after installation.
- ii. No color fading in excess of the second grade of grey scale defined in ISO 105-A03  
\*Grey scale evaluation should be done by Toppan.

**Warranty Period:** Ten (10) years from the date of delivery of the Product from Toppan or the manufacturer on behalf thereof. In case of breach of this warranty (the “Breach” or “Breaching”), B&N has a right to obtain certain remedy pursuant to Section 4 and Section 5 in this Exhibit B from Toppan.

Except to the extent prohibited by applicable law, the warranty is made in lieu of all other warranties, rights or conditions, express or implied, including, but not limited to, any implied warranty of merchantability, satisfactory quality, fitness for a particular purpose and those arising from a course of dealing, custom or usage of trade. B+N is responsible for determining if a product is suitable for its particular purpose and application methods. the warranty set forth herein constitutes the sole remedy of B+N and of the sole responsibility of the Toppan for Toppan products.

### 2. Conditions of Use:

- i. Toppan Products dedicated for exterior application are suitable for using exterior decoration except for horizontal area or in extreme weather conditions.
- ii. Toppan Products dedicated for interior application are designed for interior decoration and shall not be used in a place exposed to direct sunlight, strong artificial light such as mercury lamp or floodlight etc.
- iii. Toppan Products should be treated with the requirements of proper instructions thereof.
- iv. Toppan Products operation should be done complying with any local, state, municipal, provincial, or federal laws pertaining to the use, storage, processing, application, distribution, and disposal of Toppan Products.

## Fortina Warranty > p. 2

### 3. Exclusions and Limitations:

Disclaimer: When the Toppan Product falls under the following cases, it shall be handled for a fee even during the above Warranty Period. Toppan is not responsible for any breach of the Warranty not reported during the Warranty Period. The Warranty also does not apply to any Toppan Products ordered by B&N before the date of this Agreement.

- i. Defects that occur intentionally or accidentally, or during processing or installation.
- ii. Defects attributable to fabrication, processing, assembling, operation, management, or maintenance conducted by a third party employed without regular arrangement.
- iii. Defects such as deterioration of Toppan Products caused by members or auxiliary materials not involved in use of Toppan Products.
- iv. Defects caused by the use of Toppan Products installed in an environment other than the specified and reasonably recognized service environment and operated beyond the prescribed level of performance.
- v. Defects of Toppan Products caused by external factors like attributable to deformation of the building structure.
- vi. Aging change of Toppan Products or any of its components such as wear and tear, aging deterioration, such as denaturation or discoloration, or rusting, molding or other defects associated with these.
- vii. Defects attributable to rust.
- viii. Damage due to location of a special environment such as a hot spring, incineration plant, or swimming pool facility or industrial area where special gas, heat, acid, alkali, or salt is used or generated. Area where salt damage occurs or area where water splash constantly occurs because of proximity to a lake or river area where flue dust or chemicals such as metallic powder, stone powder, or agricultural chemicals are attached or accumulated, and damage by environmental pollution.
- ix. Damage by natural disasters such as typhoon, flood, earthquake, lightning, or icicle.
- x. Defects attributable to phenomena technically unforeseeable in commercialization of Toppan Products.
- xi. Defects attributable to animals such as dogs, cats, birds, or mice.
- xii. Defects attributable to relocation, repair or remodeling of Toppan Products conducted by the Purchase.
- xiii. Defects caused by repaired area like touch-up paint has been applied.
- xiv. Damage caused by cleaning with inappropriate tools such as scrubbers or brushes or with chemicals.
- xv. Damage aggravated as a result of initial damage or defects left unattended for a long time.
- xvi. Defects caused by the failure of appropriate maintenance after delivery.
- xvii. Defects caused by use of Toppan Products for purposes other than the originally intended use or defects caused by a method of use different from the intended use.
- xviii. Defects caused by no use of authentic accessories or members or by use of members other than our own.
- xix. Defects including damage attributable to illegal conduct such as crime.
- xx. Defects due to improper storage after product delivery (for example high-temperature and humidity at storage in a place, long-term storage that exceeds the Warranty Period, and defects due to water, stacking, exposure to direct sunlight, extremely low temperatures and etc.).
- xxi. Problems caused by condensation due to natural phenomena or living environment, expansion and cracking or breakage due to freezing, expansion and contraction due to temperature difference, twisting, etc.
- xxii. The loss by delivery delays or nonfulfillment of this product due to natural disasters, wars, riots, transportation accidents, epidemics, and other sudden matters.
- xxiii. Defects due to operational errors, improper adjustments, or improper maintenance after product delivery.
- xxiv. Defects caused by electrical equipment such as heat generated from lighting equipment, air conditioners etc.
- xxv. Defects caused by the installation that doesn't follow the Fortina standard installation methods or proper settlement.
- xxvi. Defects caused by thermal elongation of aluminum substrate due to temperature changes.

## Fortina Warranty > p. 3

### 4. Claims Procedure:

If B&N discovers an alleged Breach of the Warranty in a Toppan Products, and notify Toppan of such in writing with (i) sufficient details of such alleged Breach; (ii) the related purchase order number; (iii) the address of the installed product and date of installation; and (iv) other detailed information regarding the allegedly Breaching Toppan Products within thirty (30) days of the discovery and during the Warranty Period, Toppan shall investigate whether there is any Breach in such Products. B&N shall return the subject allegedly Breaching Toppan Products for investigation together with the notification above, and shall allow Toppan to inspect them at the installed site.

### 5. Remedies

**5.1** If Toppan confirms that there is Breach on the Toppan Products upon the investigation set forth in Section 4 of this Exhibit B, Toppan shall, at its discretion:

- i. repair the Breaching product;
- ii. replace the Breaching product; or
- iii. refund the price paid to Toppan for the delivery of the subject Breaching product pursuant to the refund policy set forth herein.

In case of replacement, Toppan shall deliver, at Toppan's sole cost and expense, the replacement to B&N at the location to be agreed between the Parties within Territory. In case of refund, the refund price shall decrease in accordance with the following schedule:

Elapsed time from the beginning of the warranty period	Percentage of the price to be refunded
Within 2 years	100%
More than 2 years within 4 years	80%
More than 4 years within 6 years	50%
More than 6 years within 8 years	30%
More than 8 years within 10 years	10%

**5.2** The Toppan Products replaced pursuant to Section 5.1 of this Exhibit B shall be subject to the same warranties, the same conditions and the same remedies as the original Toppan Products, provided that the Warranty Period therefore shall be the balance of the applicable Warranty Period relating to the replaced Toppan Products.

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# Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

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FIRE TECHNOLOGY DEPARTMENT  
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**ASTM E 84 - 10  
INVESTIGATION OF THE SURFACE BURNING  
CHARACTERISTICS OF A NOMINAL 0.13-MM  
THICK PRINTED DECORATIVE FOIL, LAMINATED  
ONTO AN ALUMINUM C-CHANNEL RAIL  
TRADE NAME: TOPPAN FORTINA (TIA008)**

**FINAL REPORT  
Consisting of 5 Pages  
SwRI® Project No.: 01.16045.01.024h**

**Test Date: October 19, 2010  
Report Date: November 10, 2010**

**Prepared for:**

**TOPPAN INTERAMERICA, INC.  
1131 HWY 155 SOUTH  
MCDONOUGH, GA 30253**

Prepared by:

A handwritten signature in blue ink that reads 'A. L. Saucedo'.

Anthony L. Saucedo  
Group Leader  
Material Flammability Section

Approved by:

A handwritten signature in blue ink that reads 'Matthew S. Blais'.

Matthew S. Blais, Ph.D.  
Director  
Fire Technology Department

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# Fortina Fire Rating Documentation

FORTINA ASTM E84 CLASS A PASSED CIRT R16045.01.024h

## INTRODUCTION

This report presents the test results for a specimen submitted by Toppan Interamerica, Inc., located in McDonough, GA, and tested at Southwest Research Institute's (SwRI's) Fire Technology Department, located in San Antonio, Texas. The test is conducted in accordance with the procedure outlined in ASTM E 84 - 10, *Standard Test Method for Surface Burning Characteristics of Building Materials* (NFPA 255, ANSI/UL 723 and UBC 8-1).

This test method is applicable to exposed surfaces, such as ceilings or walls, provided that the material or assembly of materials, by its own structural quality or the manner in which it is tested and intended for use, is capable of supporting itself in position or being supported during the test period. The test is conducted with the material in the ceiling position.

The purpose of this test method is to determine the relative burning behavior of the material by observing the flame spread along the specimen. Flame Spread and Smoke Developed index are reported. However, there is not necessarily a relationship between these two measurements.

**This standard should be used to measure and describe the response of materials, products, or assemblies to heat and flame under controlled conditions and should not be used to describe or appraise the fire-hazard or fire-risk of materials, products, or assemblies under actual fire conditions. However, results of the test may be used as elements of a fire-hazard assessment or a fire-risk assessment which takes into account all of the factors which are pertinent to an assessment of the fire hazard or fire risk of a particular end use.**

Test specimens are conditioned as appropriate in an atmosphere maintained between 68 and 78 °F and 45 to 55% relative humidity. Immediately prior to the test, the specimen is mounted in the furnace with the side to be tested facing the test flame. Cement board is placed on the unexposed side of the specimen to protect the furnace lid assembly. Sometimes, because of the nature of the material undergoing testing, additional support (e.g. wire, wire and rods, rods, and/or bars) is used to ensure that the specimen will remain in position during the test. The use of supporting materials on the underside of the test specimen may lower the Flame Spread Index from that which might be obtained if the specimen could be tested without such support, and the test results do not necessarily relate to indices obtained by testing materials without such support.

The flame front position and light obscuration are recorded throughout the 10-minute test and used to calculate the Flame Spread and Smoke Developed indices. The temperature at 23 ft is also recorded. The Flame Spread and Smoke Developed indices reported herein are relative to the results obtained for mineral fiber-reinforced cement board and select grade red oak (moisture content between 6 and 8%). The mineral fiber-reinforced cement board is the calibration material used to obtain 0 values for Flame Spread and Smoke; red oak decks are used to obtain 100 values for Flame Spread and Smoke.

The results apply specifically to the specimens tested, in the manner tested, and not to the entire production of these or similar materials, nor to the performance when used in combination with other materials.

Two model building codes (2009 International Building Code<sup>®</sup>, Chapter 8 *Interior Finishes*, Section 803 *Wall and Ceiling Finishes*; NFPA 5000, Chapter 10 *Interior Finish*, Section 10.3 *Interior Wall or Ceiling Finish Testing and Classification*) classify materials based on the Flame Spread and Smoke Developed indices. For reference purposes, the classification criteria are listed below:

Classification	Flame Spread Index	Smoke Developed Index
A	0 – 25	0 – 450
B	26 – 75	0 – 450
C	76 – 200	0 – 450

# Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

## ASTM E 84 - 10 REPORT

CLIENT: TOPPAN INTERAMERICA, INC.  
SWRI PROJECT NO.: 01.16045.01.024h  
TEST DATE: OCTOBER 19, 2010  
DAILY TEST NO.: 2

### DESCRIPTION OF SPECIMEN

DATE RECEIVED: October 13, 2010 (received ready-to-test)

MATERIAL ID:\* Fortina

TRADE NAME:\* Toppan Fortina (TIA008)

DESCRIPTION:\* Printed decorative foil laminated onto aluminum C-channel rails

COMPOSITION:\* Poly-olefin foil laminated onto aluminum

THICKNESS: 1.58-in. O.D. square C-channel (nominal)  
0.047-in. wall (nominal)  
\*0.13-in. foil (nominal)

UNIT WEIGHT: 0.7 lbs per rail (nominal)

COLOR: Natural

SPECIMEN SIZE: One hundred eighty-two, 1.58-in. square C-channels × 20.5-in. long rails placed side by side, and end to end, down the length of the chamber (flat wood grain decorative side to burner)

CONDITIONING TIME: 5 days at 70 °F and 50% relative humidity

WITNESSED BY: Messrs. Nickie Fukuyama and Trey Nakamura representing, Toppan Interamerica, Inc.

\* From Client's material description and/or instructions

# Fortina Fire Rating Documentation

FORTINA ASTM E84 **CLASS A PASSED** CIRT R16045.01.024h

## ASTM E 84 - 10 REPORT

CLIENT: TOPPAN INTERAMERICA, INC.  
 SWRI PROJECT NO.: 01.16045.01.024h  
 TEST DATE: OCTOBER 19, 2010  
 DAILY TEST NO.: 2

### TEST RESULTS

FLAME SPREAD INDEX (FSI): 10  
 SMOKE DEVELOPED INDEX (SDI): 10

### TEST DATA

UNROUNDED FSI: 12.5  
 UNROUNDED SDI: 10.2  
 FS\*TIME AREA (Ft\*Min): 24.2  
 SMOKE AREA (%\*Min): 12.8  
 FUEL AREA (°F\*Min): 5059.3

### OBSERVATIONS DURING TEST

IGNITION TIME (Min:Sec): 02:39  
 MAXIMUM FLAME FRONT ADVANCE (Ft.): 4.5  
 TIME TO MAXIMUM ADVANCE (Min:Sec): 6:18  
 MAXIMUM TEMP. AT EXPOSED TC (°F): 577  
 TIME TO MAXIMUM TEMP. (Min:Sec): 9:15  
 TOTAL FUEL BURNED (Cu. Ft.): 53.0  
 DRIPPING (Min:Sec): None  
 FLAMING ON FLOOR (Min:Sec): None  
 AFTERFLAME TOP (Min:Sec): 01:12  
 AFTERFLAME FLOOR (Min:Sec): None  
 SAGGING (Min:Sec): None  
 DELAMINATION (Min:Sec): None  
 SHRINKAGE (Min:Sec): None  
 FALLOUT (Min:Sec): None

### CALIBRATION DATA

RED OAK SMOKE AREA (%\*Min): 76.9  
 RED OAK FUEL AREA (°F\*Min): 8376  
 GRC BOARD FUEL AREA (°F\*Min): 5407

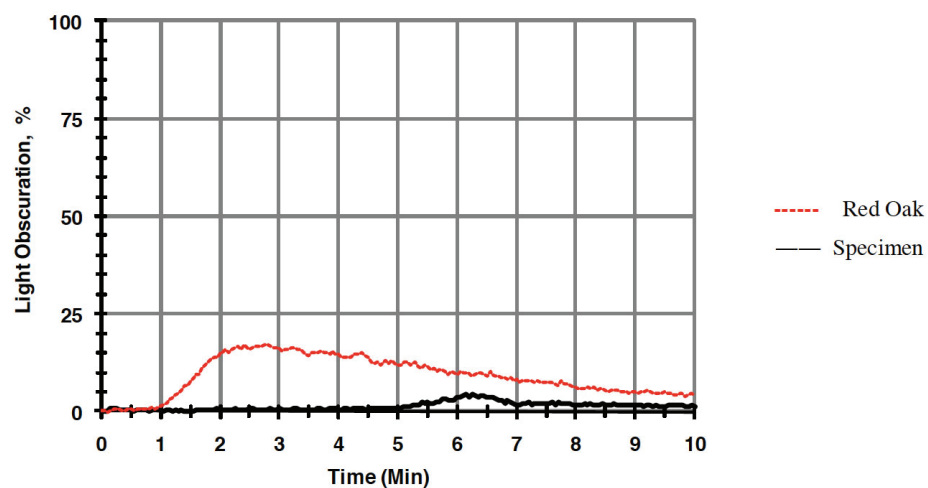
# Fortina Fire Rating Documentation

FORTINA ASTM E84 CLASS A PASSED CIRT R16045.01.024h

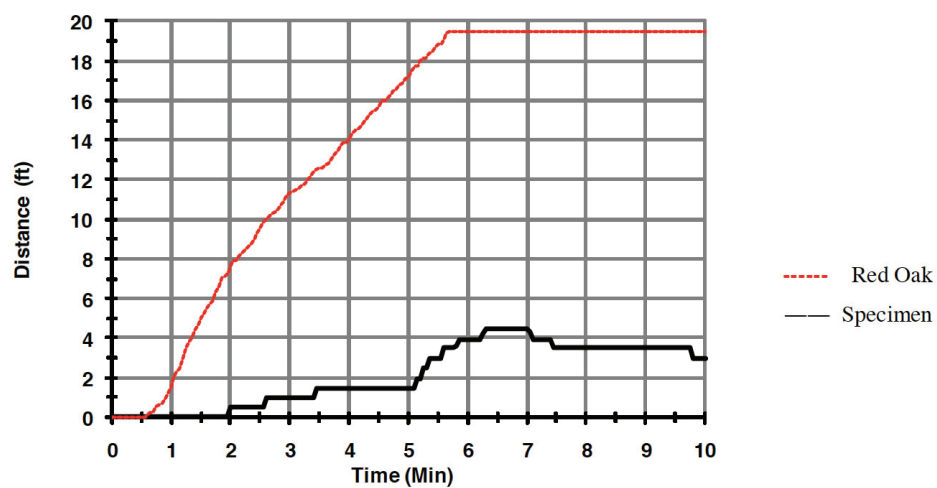
## ASTM E 84 - 10 REPORT

CLIENT: TOPPAN INTERAMERICA, INC.  
SWRI PROJECT NO.: 01.16045.01.024h  
TEST DATE: OCTOBER 19, 2010  
DAILY TEST NO.:2

### LIGHT OBSCURATION



### FLAMESPREAD



# Fortina Performance Data > Exterior Film

## Decorative Sheet Performance Data (Exterior Specification)

Evaluation Items		Test items	Test method
1	Dimensional stability	Heat resistance test	Put a cross-cut measuring 100 mm x 100 mm at the center of a specimen, leave it at a temperature of 65°C for two days, and check the clearance at the cross-cut part.
2	Weather resistance	Accelerated weathering test	Apply a light beam to the specimen with a sunshine carbon arc weather meter for 8,000 hours and check the appearance.
3	Heat resistance	Long-term heat resistance test	Leave the specimen in each oven for 1,000 hours and check the appearance.
			60°C 80°C
4	Heat cycle resistance	Heat-cold repeating test	Conduct 100 cycles, with each cycle consisting of 80°C for two hours switched to -20°C for two hours, and observe the appearance.
5	Dry/wet cycle resistance	Dry/wet cycle test	Conduct 20 cycles, with each cycle consisting of 40°C and 30% RH for 8 hours switched to 40°C and 90%RH for 16 hours, and observe the appearance.
6	Humidity resistance	Long-term humidity resistance test	Leave the specimen in a high humidity tank at a constant temperature of 40°C and 90%RH and observe the appearance.
7	Scratch resistance	Pencil scratch resistance (based on JIS H8602)	Apply the core of the pencil to the specimen while applying a load of 1 kg to the angle of about 45° and scratch the surface toward the front at a constant speed.
8	Abrasion resistance	Abrasion resistance test	Rotate the specimen 7,000 times with a taper abrasion tester (abrasion wheel: CS-17; and load: 1 kg) and observe the appearance.
		Falling sand abrasion resistance test (based on JIS H8602)	Let a grinding material fall through a guiding tube of 20 mm in inner diameter to the specimen at an angle of 45° at a falling rate of 320 g/min. and measure the time when the base material begins to be exposed and the abrasion depth.
9	Low temperature impact resistance	Dupont impact test	Let a 1 kg weight fall from a height of 30 cm to the specimen at 5°C and observe the appearance.
10	Pollution resistance	Pollution resistance test (1)	Immerse dry cotton in a solvent, rub the surface of the specimen with the cotton for 20 strokes and observe the appearance.
		Pollution resistance test (2)	Apply each pollutant, wipe it off with water or ethanol after a lapse of 24 hours and observe the appearance.
		Oil and solvent resistance test	Apply each oil and solvent, wipe it off with water after a lapse of 24 hours and observe the appearance.
			Petroleum benzine Methyl ethyl ketone Ethyl acetate Ethanol Blue ink Black shoe cream Black marker Red crayon Heating oil CRC556 Ethanol Petroleum benzine
11	Acid resistance	Acid resistance test	Immerse the specimen in a 1% sulfuric acid aqueous solution for one hour and observe the appearance.
12	Alkali resistance	Alkali resistance test (based on JIS H8602)	Put a drop of 5 g/l sodium hydrate aqueous solution to the surface, leave it for 24 hours, wash the solution off with water, and observe the appearance.
13	Corrosion resistance	CASS corrosion resistance test (based on JIS H8602)	Put the specimen in a test tank, spray a sodium chloride solution of a 50 g/l concentration to the specimen for 48 hours, and observe the appearance.
14	Adhesiveness	Cross-cut peel test (based on JIS H8602)	Scratch the surface at an interval of 2 mm in both the longitudinal and transverse directions to the depth that reaches the base material, make 100 grids with those scratches, apply cellophane tape over the grids, and peel it off.
15	Adhesive strength	Normal state adhesiveness test	Pull the sheet in a 180 degree direction at a rate of 200 mm/min. relative to the base material under a normal room temperature and measure the adhesive strength.
		Heat creep resistance test	Apply a load at a rate of 500 g/25 mm to the sheet at a 90 degree direction relative to the base material at 60°C and measure the peeling distance 30 min. later.
		Cold creep resistance test	Apply a load at a rate of 500 g/25 mm to the sheet at a 90 degree direction relative to the base material at -20°C and measure the peeling distance 30 min. later.

\* These data are based on our own test results. We do not guarantee those results.

# Fortina Performance Data > Interior Film

## Decorative Sheet Adhesion Performance Data (Interior Specification)

Evaluation Items	Test items	Test method
1	Weather resistance Accelerated weathering test	Apply light beam for a certain duration of time with a sunshine carbon arc weather meter.
2	Heat resistance Heat resistance test (company standard)	Leave the specimen in an oven at a temperature of $60 \pm 5^{\circ}\text{C}$ for 48 hours.
3	Water resistance Water resistance test (company standard)	Immerse the specimen in room temperature water for 24 hours and then dry it.
4	Humidity resistance Humidity resistance test (company standard)	Leave the specimen in a tank at a constant temperature and humidity of $40 \pm 2^{\circ}\text{C}$ and $90 \pm \% \text{RH}$ for 48 hours.
5	Heat cycle resistance Heat-cold repeating test (based on JAS heat-cold repeating C test)	Put a specimen measuring 150 x 150 mm in an oven at a temperature of $60 \pm 3^{\circ}\text{C}$ , leave it there for two hours, and leave it in a low-temperature tank at $-20 \pm 3^{\circ}\text{C}$ for two hours. Repeat this for two cycles.
6	Chemical resistance Chemical resistance (company standard)	Apply (a) 2% sodium hydrate, (b) 5% acetate solution, and (c) petroleum benzine to the specimen, leave it for six hours and wipe them off.
	Chemical resistance Chlorine resistance test (company standard)	Apply chlorine of 1.0 mg/L, which is the sanitation criterion for a swimming pool, and chlorine of 10.0 mg/L, 10 times higher concentration of the above, to the specimen, leave it for 24 hours, 48 hours, and 72 hours, and wipe it off. However, change chlorine water every six hours considering the decomposition rate of chlorine. • Sanitation criterion of a swimming pool: The residual free chlorine concentration of water in a swimming pool shall be 0.4 mg/L or more. The desired concentration is 1.0 mg/L (according to the notification of the Director-General, Environmental Health Bureau, Ministry of Health and Welfare).
7	Pollution resistance Pollution resistance test (1)	Apply each detergent (weak alkali, neutral, and weak acid), insecticide, and heating oil to each specimen, leave them for six hours, and wipe them off.
	Pollution resistance Pollution resistance test (2)	Draw a 10 mm wide line with a permanent marker and a crayon, leave it for two hours, and wipe it off with a solvent or a detergent.
8	Abrasion resistance Abrasion resistance test (pattern loss) (based on JAS abrasion C test)	Conduct a test on a 120 x 120 mm specimen with a taber abrasion tester and calculate the rotational value when the loss of pattern reaches 50%.
9	Scratch resistance Scratch resistance test (company standard)	Pencil hardness test based on JIS K 5400 (load of 500 g)

\* These data are based on our own test results. We do not guarantee those results.

# Terms And Conditions

## QUOTE BY PHONE

1-800-350-4127 (Outside Northern California)  
1-650-593-4127 (Northern California)

## QUOTE/ORDERING BY E-MAIL

MAIL@BNIND.COM (Ready 24 hours a day)

## CUSTOMER SERVICE

Customer service is available 8:00 am to 5:00 pm (PST) Mon. – Thurs. and 8:00 am to 12:00 pm on Fri. to answer your inquiries regarding products, quotes or orders.

## WARRANTY

We fully support the quality of our product. If there are any manufacturing defects within a year of delivery, please contact our Customer Service Department by phone or e-mail for assistance.

## PRODUCT WARRANTY LIMITATIONS

The Customer is purchasing the fixtures in an "as-is" condition, unless otherwise reported to the Company pursuant to [the inspection provision in the contract], as of the date of delivery and specifically and expressly without any warranties, representations or guarantees, either expressed or implied, except as set forth below, as to its condition, fitness for any particular purpose, merchantability, or any other warranty of any kind, nature or type whatsoever from or on behalf of the seller. The Company hereby warrants to the Customer and its successors and assigns that the product supplied to the Customer is constructed only for the use and purposes contemplated by the Customer set forth in the contract; and the Company, immediately prior to the delivery of the product had good and lawful right to sell the product, and that there is hereby conveyed to the Customer on the date of delivery, good title to the product, free and clear of all liens, claims, encumbrances and rights of others.

## WEBSITE / PRINTED MATERIALS

The copy has been reviewed to present information as accurately as possible. If an error is found in description or pricing, or the item has been discontinued, yet not updated, B+N reserves the right to correct it at the time it was discovered.

## PRODUCT OFFERINGS AND MATERIAL FINISHES ARE SUBJECT TO CHANGE AT ANY TIME.

## ORDER SHIPMENTS ESTIMATES

Orders in stock will ship via ground in 2 – 5 days, unless another service level is requested by the customer.

## BACK ORDERS

Unless otherwise noted, back orders will ship when they are back in stock at our facility. Your Sales Administrator will keep you advised on the status of all back orders.

## BLANKET ORDERS

Blanket orders are subject to a unique set of Terms & Conditions defined at the time of order placement.

## MINIMUM ORDER REQUIREMENTS

\$500 threshold must be reached to place an order.

## STORAGE

Storage fees will be assessed after 30 days for all materials that were scheduled to ship but were delayed for customer related reasons at no fault to B&N Industries. Fees will be assessed weekly at \$500 or 5% of the total order, whichever is greater. If an order is paid in full, then the storage fees must be cleared prior to shipment. If an order is partially paid for, then the remaining balance on the order plus storage fees must be paid prior to shipment.

## CANCELLATION AND RETURN ITEMS

1. Stock items must be returned within 30 days, in re-sellable condition. Return of stock items may incur a 25% re-stocking fee. Freight charges on returns are the customer's responsibility. A return authorization is required for all returns. Items returned without the proper authorization will not be accepted. B+N assumes no liability for customer returns which arrive damaged due to shipment transportation.
2. Non-stock items purchased may not be returned.
3. Prepaid material that remains beyond the 30-day original delivery schedule prior to cancellation will also be subject to storage fees.

## FREIGHT AND MULTIPLE SHIPMENTS

1. The following will result in additional charges unless otherwise stated on your quotation:
  - Shipments to multiple destinations or split shipments to the same location.
  - Customer requesting custom packaging (includes breakout into multiple packages) and shipped to one location.
2. Collect or 3rd Party Billing shipments are the responsibility of the freight payer.
3. Freight quotations are subject to re-quote at any time prior to the order being placed or at time of shipment if shipment is delayed.
4. Customer is responsible to arrange and pay for International freight, as quotes are for transportation only. Freight quotes provided by B&N do not include the broker, customs duties, fees or taxes. That is the responsibility of the customer to obtain and pay directly to the source. Broker information must be provided prior to shipping.
5. Weights and measurements may change due to changes in suppliers and/or packaging.
6. B&N is unable to guarantee delivery times or dates. Delivery times and dates are the responsibility of the shipping agent.
7. Regarding split shipments: On occasion, an order may ship from multiple locations based on availability.

## PRODUCT DISCREPANCIES AND DAMAGES VIA SHIPMENT

1. Customer must inspect items upon delivery for damage or discrepancy. Please refer to B&N's Delivery Shipper Checklist Info document for terms.

The Delivery Checklist can be found here:

<https://www.BNIND.COM/resources/technical-data>

2. B+N accepts no liability for damage incurred during shipping. Any damage found at time of delivery must be noted by customer on delivery receipt and signed/initialed by driver. Customer is to retain all packaging with damaged items for an on-site inspection by carrier.
3. For damage on 3rd party or collect shipments, the customer is responsible for filing the claim with the carrier for financial reimbursement.
4. If any product arrives in damaged condition, a freight claim must be filed with the delivering carrier. Retain packing material and note on the Bill of Lading "DAMAGED". Our Customer Service Department will assist you with any questions regarding filing a freight claim.
5. All claims regarding shortages and freight damages must be presented WITHIN 7 DAYS of receiving the shipment.

## PAYMENT METHODS AND TERMS

ACH, Wire, and Company Checks  
• Banking information can be provided upon request for electronic payment options

Credit Cards (subject to 2.5% processing fee)

• We accept VISA, MASTERCARD, AMERICAN EXPRESS.

1. Payment is due in full prior to shipping of product for all PREPAID ACCOUNTS. We do not ship COD. For payments made by check or bank transfer, the order will be processed upon receipt and approval of check or receipt of funds.
2. Consideration for establishing terms requires a combined order amount of \$1,000,000+.
3. Approved repeat customers may qualify for NET terms at B&N's discretion if sufficient volume is reached. A credit application must be completed with the necessary references. Please allow 2-3 weeks for processing. All custom orders outside of a standard project scope will continue to require a 50% deposit.

## SALES TAX

Due to the Wayfair vs South Dakota ruling all orders are subject to sales tax in the state that the material is delivered to unless a valid resale certificate is provided. Due to uncertain Economic Nexus requirements sales tax can be added to any order after a quote has been provided.

1. Taxable orders paid for by the customer and will-called at our California facility are taxed at the current rate for San Mateo County.

## PROTOTYPES, DRAWINGS, TOOLING, AND FIXTURES

1. Drawings provided by B+N are the exclusive property of B+N Industries, Inc.
2. Prototypes made from drawings that are not detailed and approved by B+N Industries, Inc., or have been supplied via verbal instruction from the customer, are subject to the interpretation of B+N Industries, Inc.
3. Tooling dies and fixtures made and used exclusively for a job or customer, remain the property of B+N Industries, Inc., unless otherwise established.

## PHOTOGRAPHY OF COMPLETED PROJECTS

B+N Industries, Inc. reserves the right to photograph a completed project that has utilized our product offerings and retains the rights to use the photographs in advertising, on our website, public relations and all marketing materials.

## FORTINA SPECIFIC ORDERS WARRANTY WARRANTY

We support the quality of the Fortina product for 10 years. For more information, please visit our Warranty section.

## CANCELLATION AND RETURN ITEMS

Fortina is considered a custom made to order line, therefore, may not be returned. If an order is canceled which is in production the customer is liable for paying for all products ordered.

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**B+N Industries**

**Main Offices:**

**15 Guittard Road**

**Burlingame, California 94010**

**1.800.350.4127**

**www.BNIND.COM**

**New York Showroom and Offices:**

**(By Appointment Only)**

**420 West 14th Street**

**New York, New York 10014**

**212.255.4110**

**Houston Showroom and Offices:**

**(By Appointment Only)**

**1800 Bering Drive, Suite 500**

**Houston, Texas 77057**

**713.430.9100**

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