

# CARDINAL DIRECT ATTACHED WALL AND CEILING PANEL DETAILS, INSTALLATIONS AND RECOMMENDATIONS



**Cardinal Acoustics Interior Panels are made from Poplar wood fibers and a cementitious binder. The panels are durable and can withstand impact from common occurring activities. Cardinal panels come in standard 23 3/4" & 48" widths and lengths up to 96". Custom widths and non-standard lengths available.**

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## **Safety**

Machining wood fiber panels will produce wood dust. Airborne dust can cause eye and skin irritation and can reduce respiratory function. Eyeglasses or safety goggles, and gloves are recommended area machining this product. Depending on the ventilation of the area where the panels are being manipulated, a respiratory mask may be needed.

## **Storage and Handling**

Panels should be stored in a dry interior location and shall remain in cartons prior to installation to avoid damage. The cartons should be stored in a flat, horizontal position to not cause bowing of the panels. Proper care must be taken when handling to avoid damage and soiling. Do not store in unconditioned spaces with humidity greater than 85% or lower than 25% RH and temperatures lower than 32 degrees F or greater than 120 degrees F.

## **HVAC Design & Operation**

Real wood and wood composite products are natural building materials, and they will react to changes in humidity. Spaces with install product should be maintained with humidity in a range between 25% and 85% RH and temperature between 32° and 120° degrees F. Wood materials will tend to contract and expand in deference to the relative humidity of a space.

## **Site Conditions**

Cardinal Acoustics Interior panels are required to acclimate to room temperature for 48-72 hours prior to installation. Panels should not be installed when existing temperature is below 32° F or greater than 120° degrees F, or if humidity is greater than 85% or lower than 25% RH. All wet work should be completed and dry prior to installation.

## **PANEL OPTIONS**

<b>Edges</b>	Bevel, Square (Standard)
	Bevel, Bevel
	Square, Square
<b>Finish</b>	Painted White or Natural (standard)
	Custom Paint Color
	Raw Unfinished
<b>Size</b>	<b>Thickness</b>
	5/8", 1", 1 1/2"
	<b>Widths</b>
	23 3/4" & 48" Standard Widths
	Custom Widths up to 48"
	<b>Widths</b>
	48" - 96" - Standard Lengths
	Custom Lengths available

## **GENERAL GUIDELINES**

- Bevel edges recommended when butting panels
- Painted white panels are not required for field painting
- Adhering panels is not recommended
- Not recommended for exterior unsheltered applications

### Directionality

Cardinal Acoustics panels are beveled on the two long sides with short square ends. Panels should be installed bevel side to bevel side. In installation layouts where this not possible, ashlar patters are recommended. For increased design flexibility, custom panels can be ordered with a beveled edge on all four sides.

### Direct Attachment

All panels are to be mechanically fastened direct to the wall or ceiling structure using appropriate fasteners. Do not countersink screws or fasteners into panel face. Fasteners or screws should be flush to the panel so that wood fibers conceal the fastener.

## MOUNTING METHODS

### A-Mount

Directly mechanically fastened the panel to the wall or ceiling structure. This mounting method requires no furring or gap between the panel and the building structure. Please refer to screw section for recommended fastener type and length. This method is not recommended for high humidity areas.

### D-20 Mount

Cardinal panels are attached to  $\frac{3}{4}$ " furring strips that are fastened to the wall or ceiling structure. This method leaves an air gap between the panel and the wall for improved sound absorption and air flow. The furring must be attached to the structure to support the weight of the panel. Cardinal Acoustics panel surface is not intended to support additional weight.

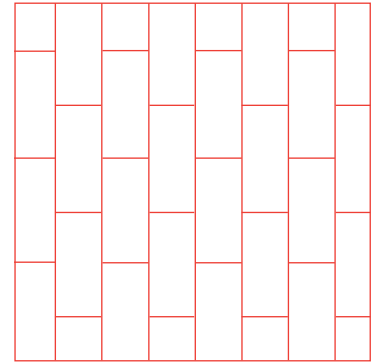
### C-20 Mount

Cardinal panels are attached to an  $\frac{3}{4}$ " wood or metal furring strip and 3# density fiberglass is installed between the furring. Sound absorption is enhanced reducing the amount of sound absorbing material needed to achieve desired reverberation time. The furring must be attached to the structure to support the weight of the panel. Cardinal Acoustics panel surface is not intended to support additional weight.

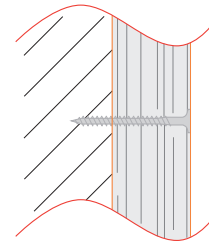
### C-40 Mount

Cardinal panels are attached to a 1  $\frac{1}{2}$ " furring strip with 2  $\frac{1}{2}$ " batt insulation installed between the furring. The furring must be attached to the structure to support the weight of the panel. Cardinal Acoustics panel surface is not intended to support additional weight.

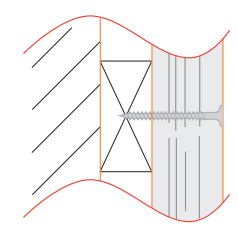
### Ashlar Pattern



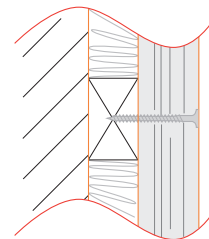
### Mounting A



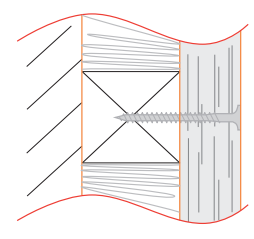
### Mounting D-20



### Mounting C-20



### Mounting C-40



## INSTALLATION RECOMMENDATIONS

### High Humidity/Pool

Panels should be furred off the wall creating an air gap between the panel and the wall structure. Ends should be open to increase airflow and reduce the chance for condensation. Cardinal recommends pressure treated furring strips and corrosive resistant screws in high humidity applications.

### Open Shelters

Panels should not be exposed directly to moisture. 1 ½" thick panels are recommended for an outdoor open shelter for increase panel integrity. Contact Cardinal Acoustics for more information regarding open shelters.

### Panel Direction & Fastener layout

Recommended screw spacing is such that one screw supports one to three square feet of panel. It is the installers responsibility to ensure type of fastener and placement can carry the panel weight. Additionally Cardinal Acoustics panel surface is not an acceptable structural substrate for ancillary attachments.

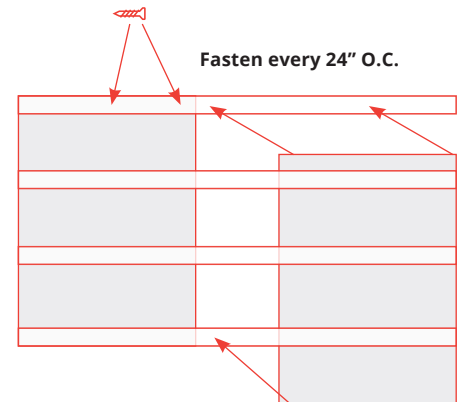
### Fastener Spacing

Wall Panel Installation – Panels should be fastened 24" O.C. starting at the edge of the panel. The recommend method is for the furring to be spaced at a maximum distance of 24". Furring can be run parallel or perpendicular to the panel.

When attaching to furring, use painted head drywall screws. For wall applications on 23 ¾" wide panels, two screws per furring crossing are required; for 48" wide panels, three screws per furring crossing are required. The screws are to spaced 1" from the panel edges and where three is required, the third screw is centered. For ceiling applications using 23 ¾" wide panels, three screws per furring crossing are required, for ceiling applications using 48" wide panels, five screws per crossing required.

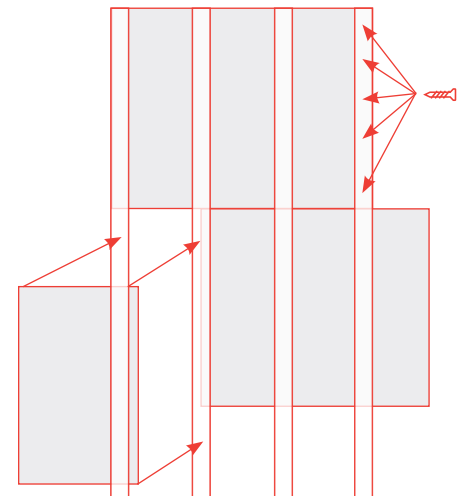
### Ceiling mounting methods

For ceiling applications using 23 ¾" wide panels, three screws per furring crossing are required, for ceiling applications using 48" wide panels, five screws per crossing required. Beveled edges on all edges and installed in an ashlar pattern is recommended.



#### Typical 48" wide wall panel

- Long edges beveled
- Fastened every 24" O.C.



#### Typical 48" wide ceiling panel

- All edges beveled
- Ashlar pattern
- Screw attach every 12" O.C.
- Furring every 24" O.C.

### Field Cutting

Cardinal Acoustics Direct Attached Interior panels can be manipulated in the field using common wood cutting tools. No special equipment is required. To bevel an edge after cutting, using a router with a ¼" bit is recommended.

### Warranty

All Cardinal Acoustics panels come with a lifetime warranty against breakage.

### Fastener types and length

PANEL THICKNESS	SUBSTRATE	TYPE	LENGTH
5/8"	Wood	Drywall	1 ¼"
5/8"	Metal	Self-tapping	1 ¼"
5/8"	Block	TAPCON	1 ¾"
1"	Wood	Drywall	1 5/8"
1"	Metal	Self-tapping	1 5/8"
1"	Block	TAPCON	2 ¼"
1 ½"	Wood	Drywall	2 ¼"
1 ½"	Metal	Self-tapping	2 ¾"
1 ½"	Block	TAPCON	2 ¾"
1 5/8"	Wood	Drywall	2 ½"
1 5/8"	Metal	Self-Tapping	2 ½"
1 5/8"	Block	TAPCON	3"
2"	Wood	Drywall	3"
2"	Metal	Self-Tapping	3"
2"	Block	TAPCON	3 "
2 ½"	Wood	Drywall	3 ½"
2 ½"	Metal	Self-Tapping	3 ½"
2 ½"	Block	TAPCON	3 ½"
3"	Wood	Drywall	4"
3"	Metal	Self-Tapping	4"
3"	Block	TAPCON	4"

### FIELD PAINTING

Cardinal Acoustics recommends the use of Waterborne Acrylic Dry Fall, Alkali based or flat non bridging latex paint

### Recommended Coverage Rate

150-200/sf per gallon

### Application Condition

Temperature: 50 F. minimum/110F. Maximum

Relative Humidity: 75% Maximum

Dry Time: 20 Minutes

Recoat: 60 Minutes

### Application Equipment

The following is only a guide

#### Airless Spray

Pressure: 2800

Hose: 1/2" ID

Tip: 0.013"

Reduction: As needed

#### Conventional Spray:

Gun: Blinks 95

Fluid Nozzle: 63C

Air Nozzle: 63PB

Atomization Pressure: 60psi

Fluid Pressure: 50psi

Reduction: As needed up to 20% by volume

### Additional Notes

Cardinal Acoustic panels should be mounted in place prior to field painting. Brush and roller painting is not recommended.

### Tolerances

Cardinal interior panels have a tolerance of plus or minus 3/16" in both width and length. Thickness tolerance is +/- 1/8". Beveled edges are recommended where panel edges meet.

### Want to learn more?

Visit [cardinalacoustics.com](http://cardinalacoustics.com)

Call 614.721.3001

Email [info@cardinalacoustics.com](mailto:info@cardinalacoustics.com)

#### OFFICE HEADQUARTERS

2941 Donnylane Blvd.  
Columbus, OH 43235

#### MANUFACTURING & FABRICATION PLANT

2000 S. Yellow Springs St.  
Springfield, OH 45506