

THINCAST™

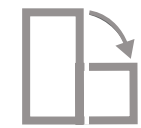
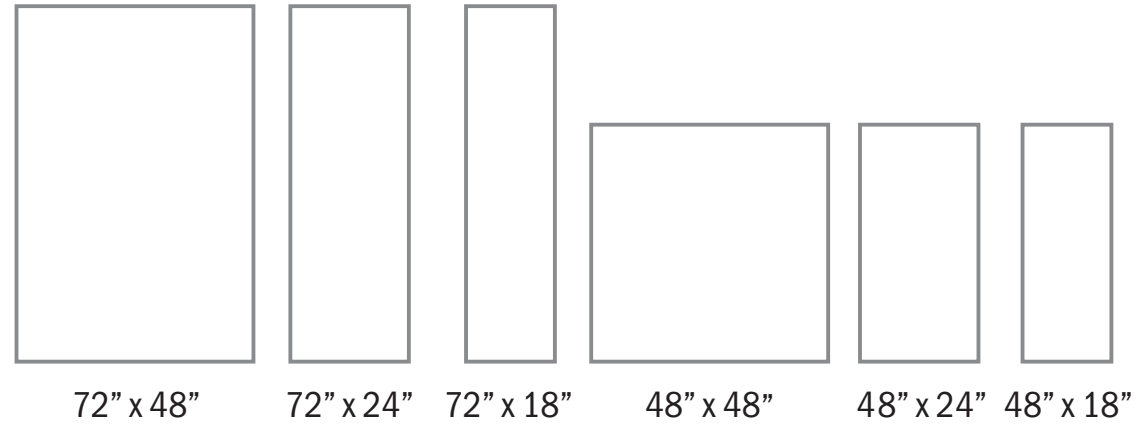
A rainscreen product with the beauty and character of concrete

THE VERSATILITY OF PRECAST CONCRETE - NOW IN A RAINSCREEN

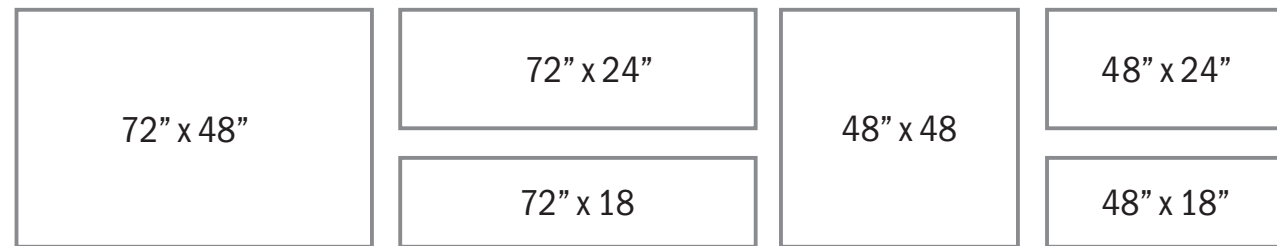




MULTIPLE STANDARD SIZES



HORIZONTAL OR VERTICAL ORIENTATION PLACEMENT OPTIONS



VARIETY OF COLORS



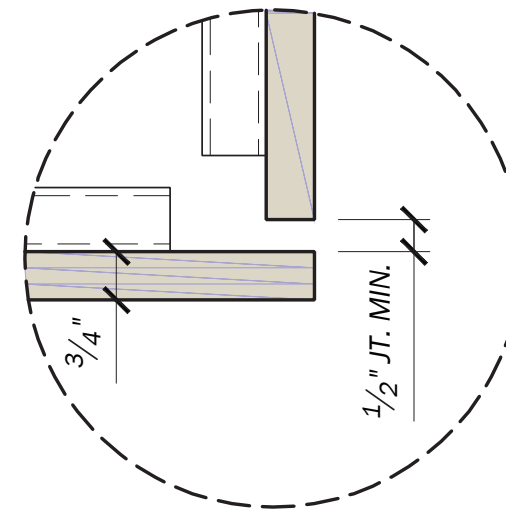
USE ALONE OR COMBINE WITH OTHER MATERIALS

PANEL CHARACTERISTICS

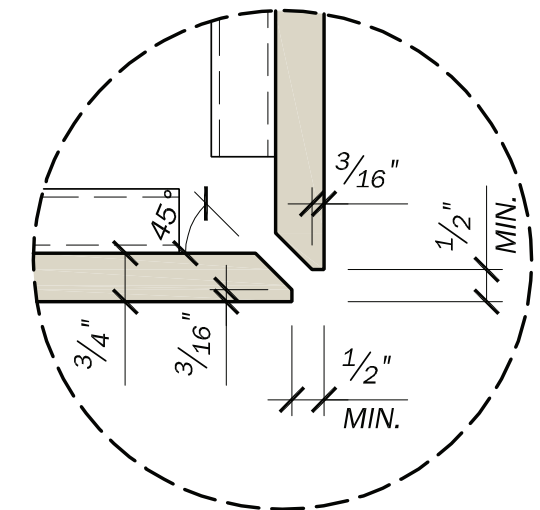
Standard Panel Thickness
3/4 in (19mm)
Panel Weight
~10 lb/ft²

EDGE CONDITIONS

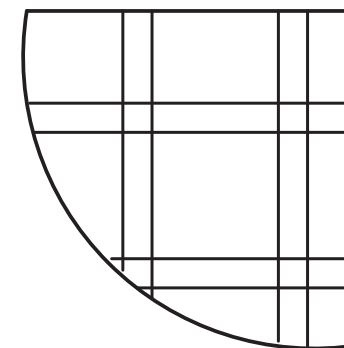
Square Edge



Miter Edge



PANEL REINFORCEMENT



ThinCast™ Rainscreen Panels

- Comply with ACI 318 - Building Code Requirements for Reinforced Structural Concrete
- Meet the requirements of PCI MNL 120 - PCI Design Handbook: Precast and Prestressed Concrete
- Are Prestressed in both directions for maximum strength and durability
- Contain 3/32" diameter Type 316 stainless steel 7x7 wire

APPLICATIONS



Low Rise - Mid Rise - High rise Structures



Commercial



Residential



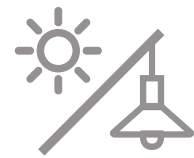
Higher Education



Retail Storefronts



Healthcare



Exterior and Interior Applications



Renovations / Retrofits



Rendering Courtesy of Greenfield Architects, Ltd.

KEY PANEL BENEFITS



Durable

- Long service life
- Functional resilience
- Passive fire resistance



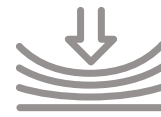
Flexible and Adaptable

- Modular configuration allows user to cut and penetrate panels with ease
- Horizontal and vertical orientation options allow the creation of dramatic facades
- Short lead time to facilitate short construction schedules



Lightweight

- Lower-cost superstructure
- Smaller and less expensive cranes or lifts for installation
- Easy to ship long distances with low cost



Resilient

- High-performance concrete provides strength in excess of 7,500 psi (51.7 Mpa) for enhanced durability
- Stainless steel prestressing provides corrosion resistant reinforcing to further increase the strength

DESIGNING WITH THINGCAST™



Natural Beauty of Concrete



Robust Testing



Domestic supplier using local materials and aggregates



Durability, Versatility, Resilience



Shorter lead times



High brand service

PERFORMANCE

CONCRETE DURABILITY		RESULTS	RECOMMENDED DESIGN VALUES
ASTM C457	Hardened Air Void Analysis	Pass	Spacing Factor: ≤ 0.008 " Specific Surface: $> 600 \text{ in}^2/\text{in}^3$ of air void volume Total Air Content: $7.5\% \pm 1.5\%$ Void Frequency: must be significantly greater than the numerical value of % air in the concrete
ASTM C666	Resistance of Concrete to Rapid Freezing and Thawing	Pass	$\geq 90\%$ Relative Dynamic Modulus @ 300 Cycles
ASTM C672	Scaling Resistance of Concrete Surfaces Exposed to Deicing Chemicals	Pass	A Visual Rating of 0 (No Scaling) @ 50 Cycles
Carbonation Depth	Carbonation Using 1% Phelothalein	Pass	No Surface Carbonation

MECHANICAL PROPERTIES		RESULTS	RECOMMENDED DESIGN VALUES
ASTM C39	Compressive Strength of Cylindrical Concrete Specimens	Pass	$\geq 7,500 \text{ psi}$
ASTM C78	Flexural Strength of Concrete (Using Simple Beam with Third-Point Loading) Modulus of Rupture	Pass	$\geq 650 \text{ psi}$
ASTM C469	Static Modulus of Elasticity	Pass	$\geq 4,433,000 \text{ psi}$
ASTM C138	Unit Weight	Pass	$\leq 150 \text{ lbs/ft}^3$
ASTM C231	Entrained Air Content	Pass	$7.5\% \pm 1.5\%$

ASTM E330 Structural Performance Of Exterior Windows, Doors, Skylights And Curtain Walls By Uniform Static Air Pressure Difference
Full-scale ASTM E330 test has been performed on ThinCast™, providing results for the engineering evaluation of the ThinCast™ panel and attachment fasteners. The rail and or bracket attachment system, and the underlying wall is not designed by High Concrete Group.

FIRE TESTING/SURFACE BURNING CHARACTERISTICS		RESULTS	RECOMMENDED DESIGN VALUES
ASTM E84	Surface Burning Characteristics of Building Materials	Pass: Class A	Class A: Flame Spread Index 0-25
ASTM E84	Smoke Developed Index	Pass: Class A	Class A: Smoke Development Index 0-450
ASTM E136	Assessing Combustibility of Materials	Pass: Non-combustible	Mass loss $\leq 50\%$, Surface and Interior Temperature Rise $\leq 30^\circ\text{C}$, No Flames After 30 Seconds

TYPE A316 STAINLESS STEEL WIRE		RESULTS	RECOMMENDED DESIGN VALUES
RR-W-410	Federal Wire Specification	Pass	Break Strength $\geq 920 \text{ lbs}$
ASTM A1096	Wire Bond	Pass	Maximum Measured Wire Slip ≤ 0.1000 "

THINCAST™ RAINSCREEN PANEL PRODUCT TOLERANCES		REQUIREMENT
Height	Overall Height of Panel	$\pm 1/16$ "
Width	Overall Width of Panel	$\pm 1/16$ "
Thickness	Total Thickness of Panel	$\pm 1/16$ "
Squareness	Variation of Square	$\pm 1/8$ "
Through Hole	Position of Through Hole from Panel Edge	$\pm 1/16$ "
Bowing	Bowing	L/360, not to exceed $\pm 1/8$ "
Back Wire	Location of Back Wire to Panel Edge	$\pm 1/16$ "
Face Wire	Location of Face Wire to Panel Edge	$\pm 1/16$ "
Wire to Wire	Distance from Wire to Wire	$\pm 1/32$ "
Wire to Panel Face	Location of Face Wire and Back Wire to Face of Panel	$\pm 1/32$ "

MINIMUM SUPPORT SYSTEM REQUIREMENTS

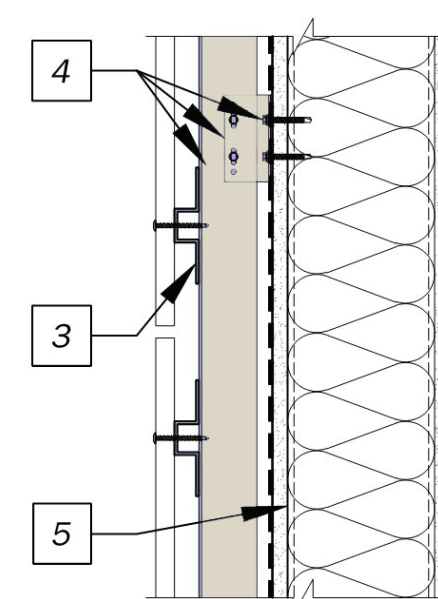
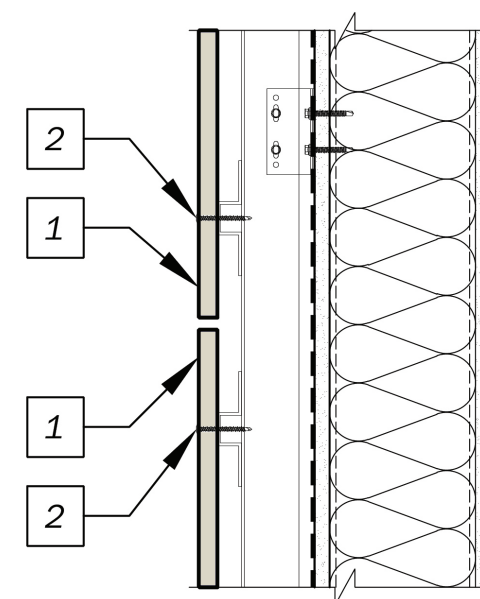
Back Ventilated Open Joint Rainscreen

Items by High Concrete Group:

1. ThinCast™ Rainscreen Panel
2. Color coordinated #12 self-drilling stainless steel bi-metal fastener

Rainscreen Support System items by others:

3. Interfacing panel rail*
4. Rainscreen support system (designed and supplied by others)
5. Structure



As a component of the completed rainscreen, High Concrete Group will provide ThinCast™ Rainscreen Panels and color coordinated fasteners. The panel rails (by others) are critical interfacing components with ThinCast™ and must meet the panel rail minimum requirements as specified below to ensure fastener capacity is not reduced. Use of an interfacing panel rail that does not meet these minimum requirements shall void capacities published in the ThinCast™ Allowable Wind Loads document.

ThinCast™ Allowable Wind Loads show the capacity of ThinCast™ with fasteners in interfacing panel rails that meet or exceed the minimum requirements. Interfacing Panel rails or other support system elements may limit the allowable wind load on the rainscreen system.

- High Concrete Group is not recommending, nor endorsing, any specific rainscreen support system.
- The rainscreen support system is not specified by High Concrete Group.
- The rainscreen support system design is not by High Concrete Group.
- The rainscreen support system installation instructions and/or procedure is not by High Concrete Group.

*Interfacing Panel Rail Minimum Requirements

- 16 Gauge (0.055" min.) Structural Steel-SS GRADE 50, $F_y = 50 \text{ ksi}$
- 2.2mm L or T Rail (0.087") 6005A T6 Aluminum, $F_y = 32.6 \text{ ksi}$
- 2.4mm Omega or Zed Rail (0.094") 6005A T6 Aluminum, $F_y = 32.6 \text{ ksi}$

For any questions regarding ThinCast™ products
CALL US AT 800.773.2278