

KALWALL®

high performance translucent building systems



photo: Nic Lehoux

Introduction to Products + Features

Overview of Kalwall Panel + System Technologies

Facades | Skyroofs® | Skylights | Canopies | Structures

Performance + Technical Summaries | Design Guide

KALWALL.COM

Daylighting + Benefits

For over 70 years, Kalwall has created healthier, more sustainable spaces. Our rugged, beautiful translucent daylighting systems are the most highly insulating in the world, offering the entire AEC industry practical design solutions that balance performance, value, and aesthetics. Our unique, museum-quality daylighting™ helps to enhance indoor environmental quality, reduces a building's carbon footprint, and brings measurable energy savings to owners and tenants. While other daylighting systems may claim to have similar features, only Kalwall offers a perfect balance of all of these benefits. Explore the Kalwall difference and learn how our healthy daylight fits your sustainable design needs.



Bergami Center, University of New Haven | New Haven, CT | Svigals + Partners | Kalwall Custom Sykroof®



Only Kalwall offers the power of diffused, balanced daylighting. Unlike other glazing products on the market, Kalwall provides predictable, beautiful, glare-free daylight that blocks harmful UV-A and UV-B rays while transmitting the full spectrum of visible light for perfect color rendition within interiors.

As if museum-quality daylighting wasn't enough, Kalwall offers dramatic savings in energy consumption. With a wide range of translucent insulation options, Kalwall's exceptional thermal performance reduces HVAC heating + cooling loads while harvesting daylight to cut artificial lighting usage.

Study after study shows a high correlation between daylighting and increased human comfort. That is especially true when glare is eliminated, visual acuity is elevated, and eye fatigue is reduced. Combine all that with superior thermal performance and solar heat gain control for measurable benefits.

In order to be most productive, one needs to be comfortable first. Add superior light quality, views to the outdoors along with natural ventilation to enhance indoor environmental quality and people thrive. Daylighting done right has been proven to increase productivity, reduce absenteeism, and improve mood.

Stronger, lighter, more efficient. Well-engineered composite materials transcend the properties of their more traditional counterparts. That is why the building block for all our daylighting systems is a Kalwall, or curved Kalcurve,[®] composite panel module. Our unique structural sandwich panels are formed by permanently bonding two specially formulated translucent Fiberglass Reinforced Polymer (FRP) faces to a grid core composed of interlocking aluminum or thermally-broken composite I-beams. Utilizing light-transmitting fiberglass 'batts' or aerogel translucent insulation, insulated panel U-factors range from 0.29 to 0.05 (1.65 to 0.28 W/m²K). Facades, Skyroofs, Skylights, and Canopies all utilize the Clamp-tite™ fastening system in both 2-3/4" (70 mm) and 4" (100 mm) panel thicknesses. TIGUs are available in 1-3/4" (44mm) or 2-3/4" (70mm) thicknesses with a 1" (25mm) curtain wall adapter option.

Kalwall Translucent Sandwich Panel Cutaway

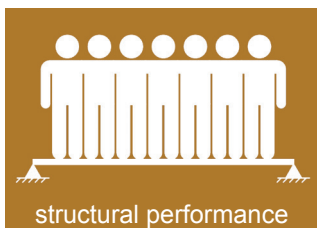
Aluminum or thermally-broken FRP and aluminum composite Grid Core composed of a series of interlocking I-beams in various thicknesses

Interior shatterproof FRP face sheets are formulated to meet interior finish, flame and smoke requirements of the toughest international codes

Translucent Insulation options, including Cabot's Lumira[®] aerogel offer exceptional thermal and solar control properties tailored to each spec

Exterior color-stable FRP face sheets are all manufactured using a permanent glass veil erosion barrier that eliminates fiberbloom

Kalwall Weatherable Surface (KWS) coating provides added protection from the elements that is graffiti-resistant and virtually self-cleaning



structural performance

Kalwall is a structural sandwich panel with outstanding load capacity and structural integrity that polycarbonate systems and insulated glass units (IGU) simply cannot match.



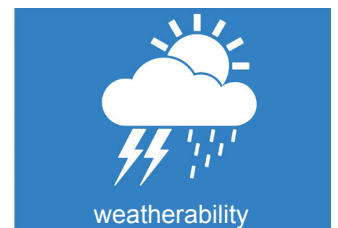
lightweight materials

With a high strength-to-weight ratio, Kalwall panels are both strong and lightweight. This makes the installation process easier and reduces extraneous structural support framing, saving both time and money.



low maintenance

All Kalwall systems are very low maintenance. The panel's FRP faces have self-cleaning properties, are resistant to dirt and particulate build-up, and can handle harsh chemical and environmental exposure.



weatherability

As the inventor of the translucent structural sandwich panel, Kalwall manufactures the best in industry, Super-Weathering (SW) formulated FRP faces that are far superior to look-a-like products and commercial grade polymers.

Facades

Wall Systems

Unitized Curtain Wall

Window Replacement

Translucent Insulated Glazing Units



photo: Behind The Lens Media Ltd.

Frank's Ice Cream | Wales, UK | Sauro Architectural | Kalwall TIGU in curtain wall by others

Wall Systems

Structural sandwich panels up to 5' x 20' (1500mm x 6000mm) are fastened to the building with the easy-to-install, Clamp-tite™ aluminum extrusions. System seals panel to panel and panel to building, allowing for expansion and contraction and provides proper weepage to channel any incidental moisture to the building exterior. Balanced, natural daylight with superior thermal and solar control.

Panels may be flat, Kalwall or curved Kalcurve. Arched heads and trapezoidal heads, sills and jambs are available for flat panels.



photo: David Wakely

Unitized Curtain Wall

Structural sandwich panels, operating and/or fixed windows, louvers, even opaque panels, are factory unitized.

Provides rapid installation and a permanent weather seal, unlike most stick-built, "frame and glaze" components, that are all field assembled.

Delivered to the job site in large, pre-assembled units up to 5' x 35' (1500mm x 10700mm), Unitized Curtain Walls are the single-source solution for multi-story applications.



photo: Brad Feinkopf

Window Replacement

Kalwall provides glare-free, museum-quality daylighting™, as well as areas of ventilation and optional vision glazing.

Kalwall's heavy duty Window Replacement Systems, like our Unitized Curtain Walls, are all factory assembled into easy-to-install, manageable units.

Vandal, graffiti, and high impact resistance add up to minimal maintenance expenses.

Best in the industry thermal performance for energy upgrades.



photo: Alex Upton

Translucent Insulated Glazing Units (TIGU)

TIGUs are available for 'plug and play' integration in captured curtain wall systems in formats up to 5' x 15' (1500mm x 4500mm).

Standard grid patterns include Shoji and Ladder. VertiKal™, Tuckerman, and other orthogonal grid patterns are also available.

U-factors from: 0.10-0.28 Btu/hr/ft²/°F offer leading performance.

NFRC 100, 201 and 202 values available for all Crystal-White FRP combinations and exterior cloud series Kal-tints™ (Cumulus, Cirrus, Nimbus, Stratus) as noted - see performance chart for details.



photo: James Steinkamp

Skylights | Skyroofs®

Skylights

Pre-engineered Skyroofs

Custom Skyroofs

Clearspan™ Skyroofs



photo: INDUSTRYOUS Photography

Scarborough Atrium | Scarborough, Ontario, Canada | NORR | Custom Skyroof

KALWALL®

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Skylights

Standard Skylights are available prefabricated or knocked down.

S-Lines: 2-3/4" (70mm) and 4" (100mm) thick, flat skylights. 4' | 5' (1200mm | 1500mm) standard widths up to 5' x 20' (1500mm x 6000mm) in 1' (300mm) long increments.

Pyramids: 2-3/4" (70mm) from 4'x 4' (1200mm x 1200mm) to 20' x 20' (6000mm x 6000mm) in 1' (300mm) increments.

Geo-roofs®: 2-3/4" (70mm) in 17 standard sizes from 8' to 24' in diameter (2400mm to 7300mm).



Pre-engineered Skyroofs

Centerline Self-Supporting Ridge Roofs with 20°, 27°, 33°, 45° slope and spans up to 24' (7300mm) utilizing 2-3/4" (70mm) panels.

Kalcurve 180° vaults or 90° low-profile vaults are available in 1' (300mm) increments up to 25' (7600mm) max spans.

Pre-engineered Skyroofs are lightweight, under 3 lbs/ft² (14.65 kg/m²), allowing substructures to be minimized. Only thrust-bearing curb designs that accommodate local live, snow and wind load designs, provided by others, are required.



Custom Skyroofs

2-3/4" (70mm) or 4" (100mm) thick structural sandwich panel systems over substructures by others.

Flat, curved or a combination for design versatility, consistent with Kalwall system parameters.

Easy, fast installations, coupled with large-sized panel formats.

Exceptional thermal performance and solar control options, including Kalwall+Lumira® aerogel, help meet LEED, BREEAM, IgCC and other international green building standards.



Clearspan™ Skyroofs

Custom turn-key solutions from the curb-up, including factory finished aluminum substructures from strategic partner, Structures Unlimited, Inc. take Kalwall Skyroofs to even greater heights with clearspans up to +/- 100' (30m).

Design, engineering, budgeting, project management, fabrication, delivery and complete installation, all with unparalleled service. Installations are completed in days or weeks, not months, due to precision digital fabrication and less trade coordination.

Complete buildings, including Pool Enclosures, featuring built-in, corrosion and moisture resistance, are also available.



Canopies

Canopies

Walkways

Canopy Systems



photo: Mark Herboth

Terminal 1 | Raleigh-Durham International Airport | Clark Nexsen | Canopy

Canopies

Kalwall or Kalcurve structural sandwich panels are available over substructures by others or as part of a pre-engineered, canopy system, utilizing structural aluminum systems from strategic partner, Structures Unlimited, Inc.

Low maintenance, self-cleaning translucent panels significantly reduce maintenance requirements and mask debris from above.

Code-compliant, fire-rated FRP faces are standard.



Walkways

Kalwall or Kalcurve, are available over supports by others or as part of a custom, pre-engineered system utilizing structural aluminum systems from strategic partner, Structures Unlimited, Inc.

Kalwall Wall Systems and Unitized Curtain Wall Systems are also available for enclosed walkways, connectors, link bridges, and other circulation zones that require balanced daylighting, protection from the elements, privacy and reduced solar heat gain.



Canopy Systems

Custom, turn-key systems, from the footings up, including structural aluminum supports from strategic partner, Structures Unlimited, Inc. bring Kalwall canopies and walkways to another level while simplifying the design and project delivery processes.

Design, engineering, budgeting, project management, fabrication, delivery and complete installation with unparalleled service.

Rapid installations are completed in days or weeks, not months, due to digital fabrication technologies and project management.

Provide the footing and anchor bolt locations and Structures Unlimited, Inc. will do the rest. Having a single source solution minimizes coordination between trades and maintains installation schedule, which saves both time and money.

Custom cantilevered, butterfly, cable-and-mast, arched and curved configured structures, among others, are available.

Kalwall's Corrosion Resistant Finishes (KCRF) are available in both standard and custom colors for all structural aluminum elements.



Optimized Daylighting



Calder Foundation | New York, NY | Stephanie Goto | Custom Skyroof and Wall System

photo: Scott Frances/OTTO for *Architectural Digest*

Take the unpredictability out of your site-specific daylighting design with our complimentary Daylighting Analysis. Thanks to the power of diffusion, Kalwall provides unparalleled, museum-quality daylighting™ with much lower visible light transmission (VLT) percentages as compared to conventional vision glazing. Not convinced? Provide target light levels and our team of Daylight Modelers will help you during the design phase to optimize your design to ensure proper daylighting. Contact our sales department today for more information.

Enhance Retail Sales

Numerous studies have shown a high correlation between daylighted spaces and increased retail sales. Patrons browse longer and are more likely to purchase products bathed in daylight. Kalwall's full spectrum, diffuse daylighting provides excellent visual clarity and true color rendition. By blocking the transmission of damaging UV wavelengths and dramatically reducing solar heat gain, interior finishes and contents are protected from fading and degradation.



Promote Plant Growth

Even though Kalwall blocks UV-A and UV-B wavelengths, it allows the transmission of visible light between 400 and 700 nm on the electromagnetic spectrum which are the required wavelengths for photosynthesis to occur in plants. As such, Kalwall has been specified in numerous projects including botanical gardens, zoos, aviaries, and other enclosed areas that feature flora and fauna.



NFRC Certified Systems (installed in KALWALL Clamp-tite™)

Kalwall provides the best overall system U-factors as low as 0.10 (0.57 W/m²K) with visible light transmission up to 20% including Kalwall's perimeter Clamp-tite™ fastening system. For more information, please visit KALWALL.COM to contact your local sales representative.

Performance Data: 2-3/4" (70mm) Panel

FRP Face Sheet Combinations		Visible Light Transmission (VLT) % by NFRC 202					Solar Heat Gain Coefficient @ 0° by NFRC 201				
Exterior FRP	Interior FRP	0.53 U	0.29 0.23 U	0.22 0.14 U	0.18 0.10 U	0.05 U	0.53 U	0.29 0.23 U	0.22 0.14 U	0.18 0.10 U	0.05 U
Crystal	White	37%	26%	13%	7%	20%	0.44	0.30	0.15	0.09	0.27
White	White	23%	16%	9%	4%	14%	0.30	0.22	0.11	0.08	0.20
White	Crystal	32%	22%	11%	7%	N/A	0.37	0.25	0.13	0.08	N/A
Crystal	Crystal	58%	35%	14%	9%	N/A	0.60	0.39	0.15	0.10	N/A

Performance Data: 4" (100mm) Panel

FRP Face Sheet Combinations		Visible Light Transmission (VLT) % by NFRC 202				Solar Heat Gain Coefficient @ 0° by NFRC 201			
Exterior FRP	Interior FRP	0.55 U	0.15 U	0.08 U	0.05 U	0.55 U	0.15 U	0.08 U	0.05 U
Crystal	White	37%	13%	5%	N/A	0.52	0.09	0.04	N/A
White	White	23%	11%	4% ⁺	N/A	0.38	0.06	0.04*	N/A
White	Crystal	30%	13%	5%	N/A	0.37*	0.13	0.06	N/A
Crystal	Crystal	58%	17%	6%	N/A	0.65	0.11	0.07	N/A

U-value SI conversion: 1.0 W/m²K = 0.176 Btu/hr/ft²/°F

 = Air Gap Only  = Fiberglass 'Batts'  = Lumira® Aerogel

U-values shown in bold denote thermally-broken grid core panels.

Visible light transmission (VLT) - NFRC 202, ASTM E-972 (approximate) as noted. VLT percentages over 30% are not recommended for most Kalwall applications. Panel U-values include panel grid-core by NFRC 100 or 102. NFRC certified system U-values vary depending on framing. Project-specific Information available by request. Shading Coefficient (SC) is equal to 1.15 times the Solar Heat Gain Coefficient (SHGC). *By calculation only (not by NFRC 201). *By calculation only (not by NFRC 202)

KALWALL TIGUs (installed in curtain wall systems by others)

Kalwall Translucent Insulated Glazing Units (TIGUs) provide industry leading panel U-factors as low as 0.10 (0.57 W/m²K) with visible light transmission up to 37%. For the 1-3/4" (44mm) option, please refer to the chart below. For the 2-3/4" (70mm) option with a 1" (25mm) curtain wall adapter, please refer to the chart above. For more information, please visit KALWALL.COM to contact your local sales representative.

Performance Data: 1-3/4" (44mm) KALWALL175CW

FRP Face Sheet Combinations		Visible Light Transmission (VLT) % by NFRC 202			Solar Heat Gain Coefficient @ 0° by NFRC 201		
Exterior FRP	Interior FRP	0.28 U	0.16 U	0.14 U	0.28 U	0.16 U	0.14 U
Crystal	White	21%	13%	8%	0.30	0.19	0.12
White	White	15%	12%	6%	0.20	0.16	0.10
White	Crystal	20%	14%	8%	0.24	0.17	0.10
Crystal	Crystal	29%	16%	15%	0.34	0.23	0.22

U-value SI conversion: 1.0 W/m²K = 0.176 Btu/hr/ft²/°F

 = Fiberglass 'Batts'

U-values shown in bold denote thermally-broken grid core panels.

Visible light transmittance (VLT%) by NFRC 202 as noted. VLT percentages over 30% are not recommended for most Kalwall applications. Panel U-factors are center of glazing 'cell' by NFRC 100. Project-specific Information available by request an/or through simulation. Shading Coefficient (SC) is equal to 1.15 times the Solar Heat Gain Coefficient (SHGC by NFRC 201).

Design Overview

Kalwall Panel Dimensions

Standard Widths: 4' | 5' (1200mm | 1500mm) for Facades and Skyroofs.
Custom widths up to 5' (1500mm) are optional

Standard Lengths: 3' - 20' (900mm - 6000mm) for Facades and up to 16' (4900mm) for Skyroofs and Canopies

Standard Thickness: 2-3/4" (70mm) Optional: 4" (100mm) | 1-3/4" (44mm) and 1" (25mm) units are available for translucent glazing applications only

Standard + Optional Grid Cores

Shoji

Shoji Grid Cores are standard. Nominal grid sizes are 12" x 24" (300mm x 600mm) and 24" x 12" (600mm x 300mm) for 4' and 5' (1200mm and 1500mm) wide panels for standard flat or optional Kalcurve panels. Panel spans will vary with different grid cores and spacings. Consult the factory for information based on project requirements. 8" x 20" | 20" x 8" (200mm x 500mm | 500mm x 200mm) are common options. Aerogel is available.

Tuckerman

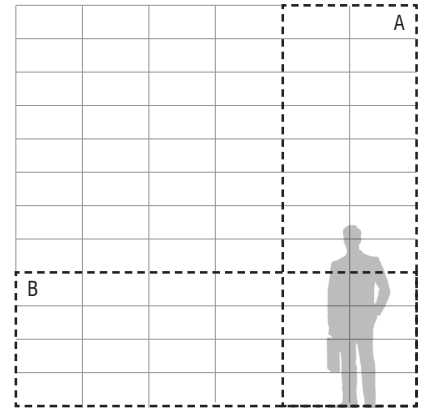
Tuckerman Grid Cores are optional. Nominal grid sizes are 12" x 12" (300mm x 300mm) for 4' and 5' (1200mm and 1500mm) wide panels for standard flat or optional Kalcurve panels. Panel spans will vary with different grid cores and spacings. Consult the factory for information based on project requirements. 8" x 8" | 10" x 10" (200mm x 200mm | 250mm x 250mm) are common options. Aerogel is available.

Verti-Kal™

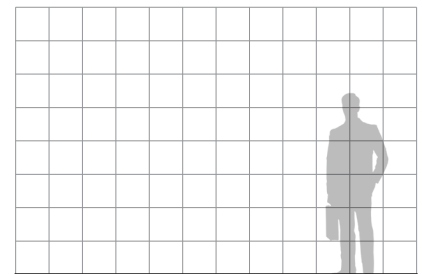
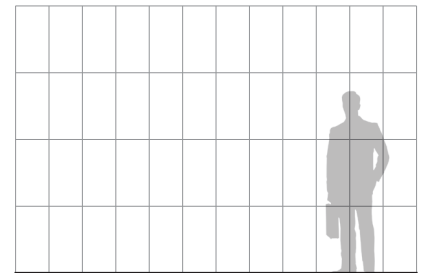
Verti-kal Grid Cores are optional for facades only. Nominal spacings of 8" and 10" (200mm and 250mm) are standard. Custom widths between 4" and 10" (100mm and 250mm) are also available. Depending on panel size, a cross mullion may be required. Panel spans will vary with different grid cores and spacings. Consult the factory for information based on project requirements. Kalcurve and Aerogel options are not available.

Ladder

Ladder Grid Cores are optional for facades only. Nominal spacings of 8" and 10" (200mm and 250mm) are standard. Custom widths between 4" and 10" (100mm and 250mm) are also available. Depending on panel size and orientation, a cross mullion may be required. Panel spans will vary with different grid cores and spacings. Consult the factory for information based on project requirements. Kalcurve and Aerogel options are not available.



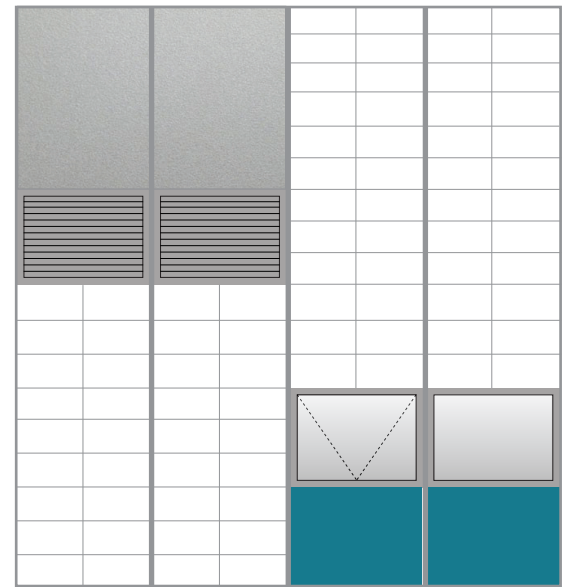
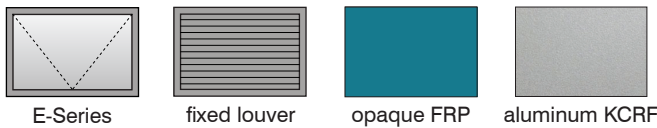
Panel Orientation Diagram: (A) Upright (B) On-Edge
Grid Cores shall be specified 'as viewed' in elevation.



Unitized Curtain Wall

Factory-unitized panels up to 5' wide x 35' high (1500mm x 10700mm) depending on shipping and handling limitations. Our Unitized Curtain Walls are delivered to the site ready to install with no additional finishing. Eliminate superfluous structure required with most other systems. Unitize translucent panels with fixed and operable windows; drainable, fixed blade louvers; even opaque aluminum or FRP faced panels utilizing our Clamp-tite™ fastening system for a single source “kit of parts” to save time and money.

E-Series windows are available in Fixed, Project Out, and Project In options for our 2 3/4" (70mm) systems and in Fixed and Project Out options for our 4" (100mm) systems. Performance options to AAMA Class AW-PG80. Factory installed 1" (25mm) glazing options of all types are available. Hurricane-resistant windows to TAS and ASTM standards are available in 2 3/4" (70mm) Fixed and 2 3/4" (70mm) Project Out.

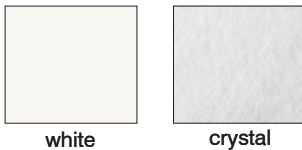


Factory Unitized Curtainwall Diagram: shipped as prefabricated units with windows (factory or field glazed), louvers, even opaque panels.

Fiberglass Reinforced Polymer (FRP) Faces

Kalwall has developed a full line of high performance FRP face sheets including the latest generation of Super Weathering (SW) formulations that are unrivaled in the industry. Along with a variety of high performance options, Kalwall offers both standard and optional colors and finishes in order to provide designers with more flexibility. Translucent White and Crystal are standard. Kal-tints are optional. Optional FRP finishes are available for interior face sheets only.

Standard Translucent Colors



Optional Translucent Kal-tints



Standard Finish



Optional Finishes



Aluminum Finishes

The Clamp-tite™ fastening system is available in either mill finish or Kalwall Corrosion Resistant Finish (KCRF), a high performance, fluoropolymer-based coating that meets the performance requirements of AAMA 2604. (AAMA 2605 and anodized options are available with some product exceptions). KCRF is highly resistant to acids, alkalis, salt, industrial and moisture-laden atmospheres.

KCRF Color Chart

There are eight available standard colors and five additional premium colors (as indicated by the #C designation). Custom colors can also be specified.



The color and finish swatches shown above are representational. All final color and finish selections should be made from actual product.

Facade Details

For vertically oriented, flat panels

These are standard Clamp-tite™ details for 2-3/4" (70mm) thick panels. Systems for other conditions, including panels on edge, concealed fastener options, Kalcurve®, Explosion Venting or Blast Resisting, are similar, but do contact Kalwall for specifics. Electronic CAD versions of these Facade details and many more are available at: KALWALL.COM

Blue indicates field installed items and may require trimming.

Red indicates thermal breaks. Optional sill flashing available.

Kalwall Span Table: 4' (1200 mm) Wide Panel Module

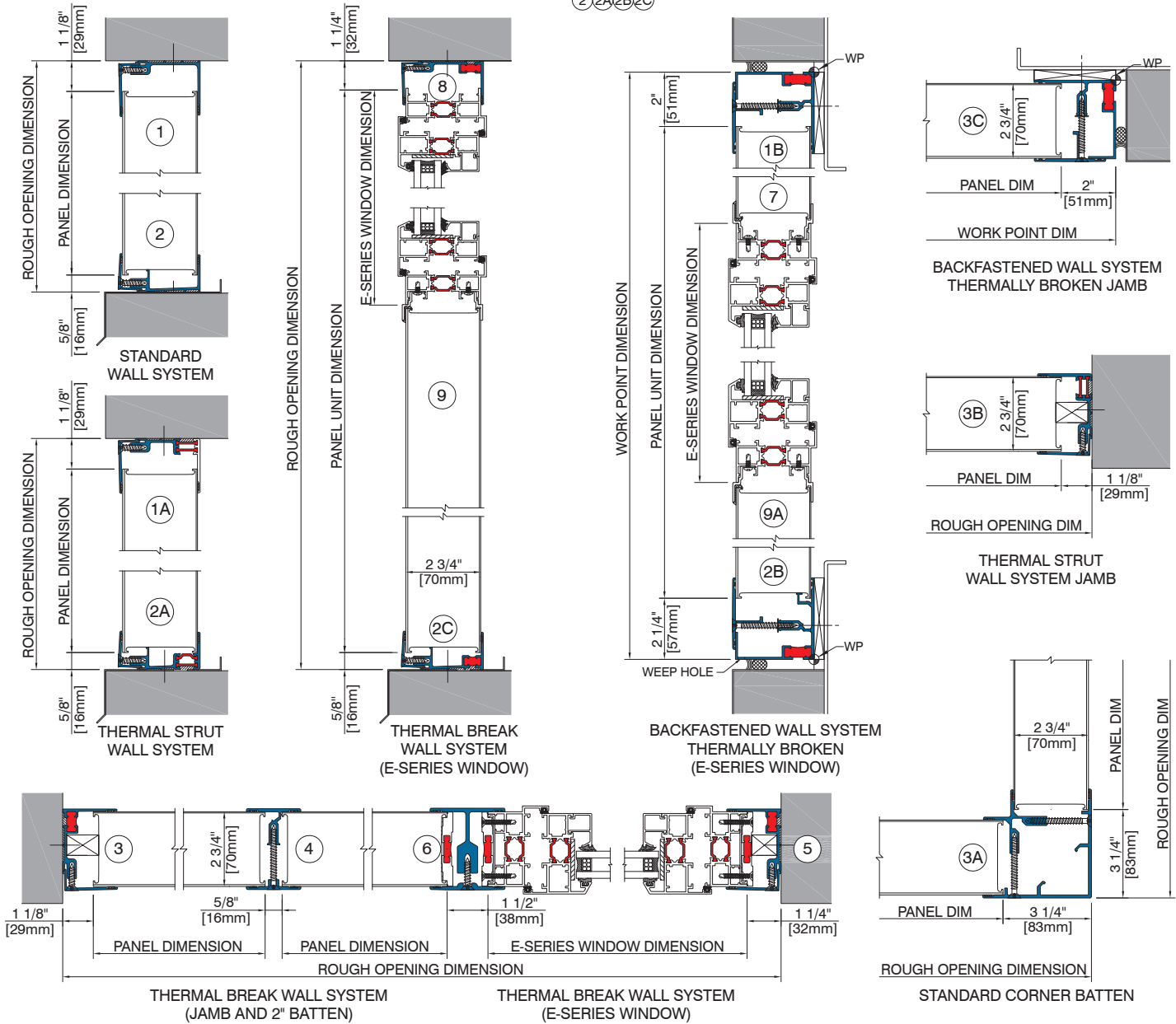
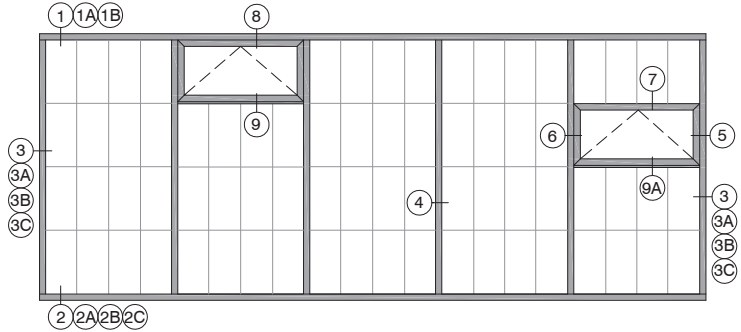
Maximum Allowable Clearspan™ for Standard 2-3/4" (70mm) Panels for Facades

Shoji 12" x 24" (300mm x 600mm)	Translucent Panel	Panel Unit (Mid-span Joint)
2" (51mm) batten	12'-7" (3835mm)	9'-2" (2794mm)
2-3/4" (70mm) ST+ #12SSSE	16'-2" (4927mm)	13'-1" (3988mm)
3-1/4" (83mm) IS-H	19'-8" (5995mm)	17'-11" (5461mm)

Clearspan at 25 PSF (1.2 kPa) wind pressure, L/60 minimum. Spans based on engineering data and tests. Others possible. CAUTION: Spans vary with panel grid core and orientation.

FACADE ELEVATION

12" X 24" (300mm x 600mm) SHOJI GRID SHOWN



Kalwall Span Table: 4' (1200mm) Wide Panel Module

Maximum Allowable Clearspan™ for Standard 2-3/4" (70mm) Panels for Skyroofs

Shoji 8" x 20" (200mm x 500mm)		
Live Load	30 PSF (1.44 kPa)	40 PSF (1.92 kPa)
Clearspan	11'-8" (3556mm)	10'-8" (3251mm)
Shoji 12" x 24" (300mm x 600mm)		
Live Load	30 PSF (1.44 kPa)	40 PSF (1.92 kPa)
Clearspan	10'-6" (3200mm)	9'-4" (2845mm)

Clearspan at 25 PSF (1.2 kPa) wind pressure, L/60 minimum at 2:12. Spans based on engineering data and tests. Longer clearspans are possible. Contact the factory.

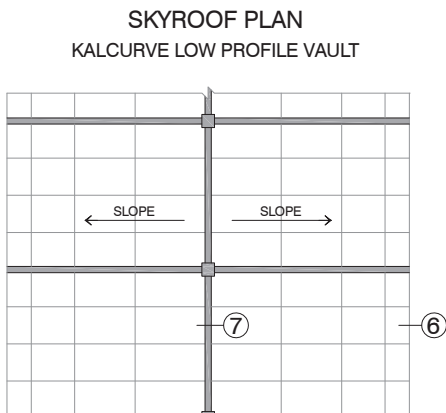
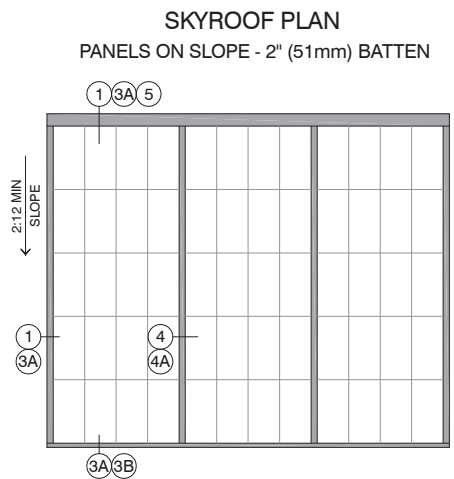
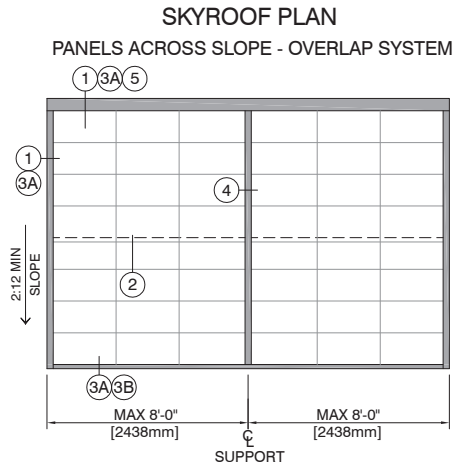
Recommended minimum pitch for Skyroofs is 2:12.

Skyroof® Details

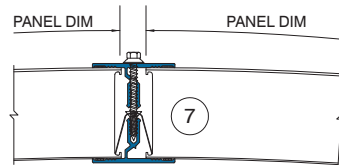
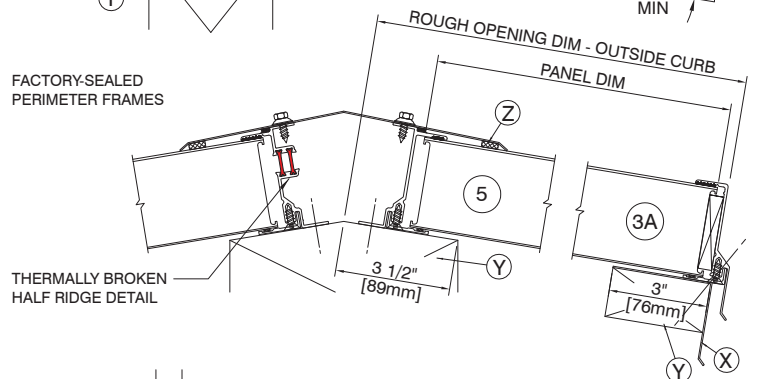
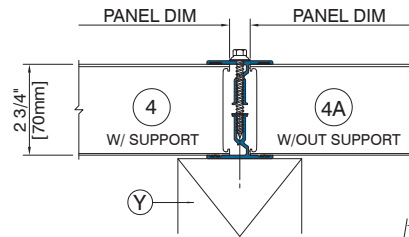
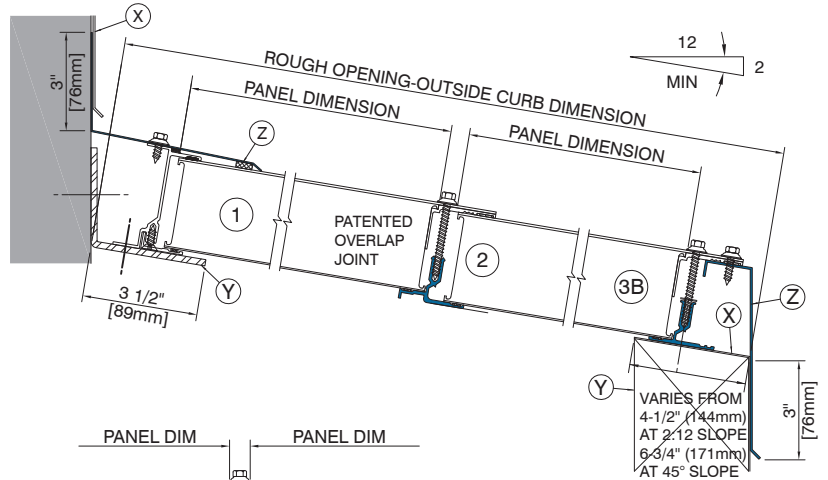
For on-slope, flat and curved panels

These are standard Clamp-tite™ details for 2-3/4" (70 mm) thick panels. Details for other conditions, including those for Self Supporting Ridge, Pyramid, Windborne Debris and Blast Resistant applications are similar, but not identical so please contact Kalwall for specifics.

Electronic CAD versions of these Skyroof details and many more are available at: KALWALL.COM

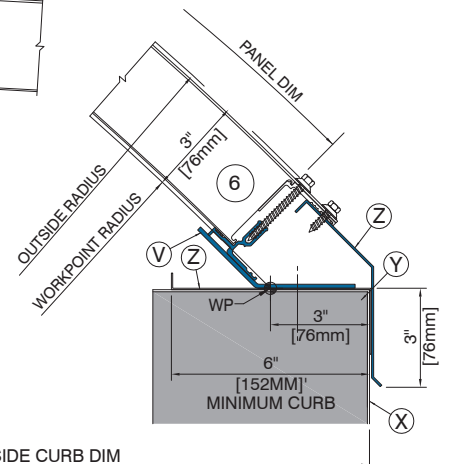


PLEASE CONTACT KALWALL FOR SPAN INFORMATION ON KALCURVE 180° AND LOW PROFILE BARREL VAULTS



NOTES: LEGEND

- (V) BENT PLATE BY KALWALL
- (X) COUNTER FLASHING NOT BY KALWALL
- (Y) SUPPORT NOT BY KALWALL
- (Z) STANDARD FLASHING BY KALWALL





Kalwall panels are comprised of a thermoset FRP / aluminum composite that will not melt. Contact us for international code compliant specifications related to your project specific requirements including flame spread, time to ignition, and fuel contribution.



Known for handling the most extreme environments with ease, Kalwall is an obvious choice for daylighting applications where resiliency matters. Kalwall offers both Hurricane High Impact (HHI) translucent systems as well as fixed / operable windows rated up to large missile D.



In an increasingly dangerous world, projects for the DoD and GSA, among others, demand building systems that can meet Anti-Terrorism Force Protection (ATFP). Kalwall is shatterproof and can be designed to meet the requirements of UFC 4-010-01 for many applications.



Kalwall is committed to designing and manufacturing daylighting systems that offer both higher performance and lower environmental impacts. EPDs (Environmental Product Declarations) for Facades, Skyroofs, and TIGUs, in both North American and EU versions, are available online.

Fall Through Compliance

Properly maintained Kalwall Skyroofs and Skylights can be walked on without risk of fall through. Tested to ASTM E661, Kalwall exceeds OSHA 1910.22 without the need for additional protection like external screens or fixed railings.

Impact Resistance

The shatterproof, super-weathering FRP face will withstand a 70 ft-lbs (95 J) impact. Optional high impact FRP faces will withstand 230 ft-lbs (312 J) impact by UL 972; also rated for windborne debris protection up to large missile D.

Bond Strength

Panels and bonding adhesives are tested according to the stringent requirements of "Criteria for Sandwich Panels" issued by the ICC (International Code Council) ES-AC177. Before specifying alternates, insist on actual field proof of bond integrity over a 20 year period. Caution is urged in accepting look-alikes as equivalent.

Weight

Most panels and systems weigh under 3 lbs/ft² (14.65 kg/m²).

Fire Tests

Although some Kalwall panels contain combustible binder resins (ignition temperatures above 800°F), unlike thermoplastics including polycarbonates, they will pass ASTM E2707; pass the Class A Burning Brand Test (ASTM E-108), or UL 790 listed Class A Roof System. All interior FRP Faces are CC-1 by ASTM D-635. Optional flame spread / smoke developed ratings by UL 723 tunnel tests, including class A. Kalwall is listed by: ICC ESR-2464 and Intertek CCRR-0173; British Standard 476, Parts 3, 6, 7. NFPA 268 - Radiant Panel Test - Exterior Walls.

Special Approvals + Listings

- FM Explosion Venting Walls Standard 4440
- FM Wall and Roof Systems Standard 4881 and 4471
- Hurricane-Resistant Systems
- NFRC Certified Products Listing
- UL Listings for Class A Roof Systems and FRP Faces
- UFC 4-010-01 DoD Anti-Terrorism Specifications

ICC-ESR and Intertek CCRR

Listed for quality assurance and compliance with IBC (AC-177).



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