Kalwall®, developed and manufactured in the U.S.A. for over fifty years, is a highly insulating, diffuse-light-transmitting composite. A matrix of glass prisms inherent in Kalwall absorbs external light levels and redistributes an interior Museum-quality Daylighting™ that virtually eliminates glare, hot spots and shadows. Introducing natural daylight into any space is beneficial to health, productivity and general well-being.

Kalwall's unique construction reduces solar gain while at the same time maximizing thermal insulation with resultant cost and environmental benefits.

Kalwall is rated a green and sustainable building component because of the way it is manufactured and its material composition. It reduces both the environmental impact of the building process and the building’s energy consumption. Importantly, it makes a substantial contribution to providing a safer and healthier indoor climate.

No other fenestration or system matches the performance of Kalwall.

Powerful Advantages

- Maximum Environmental Benefits
- Proven Structural Integrity
- Demanding Code Compliance
- Design and Aesthetic Flexibility
- System Reliability and Integrity… for over 50 years!

Cover photo: Walla Walla Community College, William A. Grant Water & Environmental Center, Walla Walla, WA; ALSC Architects; Photo ©Explosive Illusions.com

Lower left: Academy of Information Technology and Engineering at Ripponn Campus, Stamford, CT; Fuller and D’Angelo, P.C. Architects and Planners

Lower right: Blackburn College, Lancashire, UK; DLA Architecture
The most highly insulating daylighting system in the world!

**What Kalwall is...**

The primary element of the Kalwall System is a flat or curved, structural composite sandwich panel formed by permanently bonding specially formulated, fiberglass-reinforced translucent faces to a grid core constructed of interlocked, structural aluminum/composite, thermally broken I-beams.

The natural thermal properties of the sandwich panel can deliver increased energy performance by the inclusion of translucent fiberglass “batts” or aerogel during the manufacturing process and by specifying a fully thermally broken grid core. U-value options range from .29 to .05 (1.57 to .28 W/m²K) by NFRC for the 2½” (70 mm) thick panels and .15 or .08 (.83/.45 W/m²K) for 4” (100 mm) thick panels.

Kalwall panels are installed with the efficient, proven Clamp-tite™ aluminum system.

---

**Far Hills Country Day School, Far Hills, NJ**
Butler Rogers Baskett Architects; Peter Brown, Woodruff Brown Photography

---

**Jones & Jones Architects**

---

**Milwaukee Zoo Primate House, Milwaukee, WI**

---

**What Kalwall is...**

The primary element of the Kalwall System is a flat or curved, structural composite sandwich panel formed by permanently bonding specially formulated, fiberglass-reinforced translucent faces to a grid core constructed of interlocked, structural aluminum/composite, thermally broken I-beams.

The natural thermal properties of the sandwich panel can deliver increased energy performance by the inclusion of translucent fiberglass “batts” or aerogel during the manufacturing process and by specifying a fully thermally broken grid core. U-value options range from .29 to .05 (1.57 to .28 W/m²K) by NFRC for the 2½” (70 mm) thick panels and .15 or .08 (.83/.45 W/m²K) for 4” (100 mm) thick panels.

Kalwall panels are installed with the efficient, proven Clamp-tite™ aluminum system.

---

**Far Hills Country Day School, Far Hills, NJ**
Butler Rogers Baskett Architects; Peter Brown, Woodruff Brown Photography

---

**Jones & Jones Architects**

---

**Milwaukee Zoo Primate House, Milwaukee, WI**

---

*Superior Load Capacity*

When the wind starts to howl or rain and snow start to accumulate... or if someone walks across a skylight or skyroof, enormous loads push delicate poly-plastic panels far beyond their limit. Warping, buckling and collapsing result, followed by extensive interior damage and even bodily harm. Kalwall’s composite panel delivers miraculous performance which can stand up to hurricane-force winds and other loads with ease.

---

*Weathering/Color Change:*

Kalwall’s exterior face is made with innovative super-weathering and colorfast resins the full thickness, not a low-grade substrate overlaid with thin plastic film or gel to simulate weatherability. All standard exterior faces include a permanent glass veil erosion barrier to prevent “fiber bloom”!

---

*Kalwall Structural Thermal Break Composite*

- 2½” (68 mm) l-beam • 1½” (44 mm) Non-conductive break
- 4” (100 mm) l-beam • 3” (76 mm) Non-conductive break
- Stronger than aluminum • Passes fire testing to 1200°F
- Superior insulation in panels — U-values as low as .05 (.30 W/m²K)
- Stops condensation — CRF 80+

---

*Kalwall’s Thermal Break*

---

*Competing technology does NOT work!*

---

**Far Hills Country Day School, Far Hills, NJ**
Butler Rogers Baskett Architects; Peter Brown, Woodruff Brown Photography

---

**Jones & Jones Architects**

---

**Milwaukee Zoo Primate House, Milwaukee, WI**

---

*www.kalwall.com*
8 Daylighting Systems... Endless Possibilities

SUNY Athletic & Wellness Center, New Paltz, NY; RMJM Hillier, Architect

Washington County Library, R.H. Stafford Branch, Woodbury, MN; ESG Architects, Inc.
Don Wong Photo, Inc.

Washoe Medical Center, Reno, NV; HRD, Architect
**Walls • Curtainwall • Window Replacement**

**Wall Systems**

- Rapidly and economically enclose space – totally pre-finished when in place.
- Epitomizes the original Kalwall translucent sandwich panel concept.
- Controlled, natural daylight combined with many thermal and solar options.
- May be either flat or curved sandwich panels.
- Structural sandwich panels up to 5’ x 20’ (1500 mm x 6000 mm), 2 3⁄4” (70 mm) or 4” (100 mm) thick are secured to building with simple, Clamp-tite™ aluminum extrusions. System seals panel/panel and building, allowing for expansion/contraction and proper weepage to channel any moisture to building exterior.

**Curtainwall Systems**

- Factory-assembled 2 3⁄4” (70 mm) sandwich panels, operating/fixed windows, louvers, even opaque panels.
- Provide rapid installation and permanent weather seal, unlike most stick-built, "frame and glaze" components which are all field-assembled.
- Kalwall prefabricated Curtainwall Systems, like our Panel Wall Systems, are totally pre-finished inside and out.
- Delivered to the job site in large preassembled units up to 5’ x 35’ (1500 mm x 10700 mm) and larger, depending upon project details, handling and shipping constraints.

**Replacement Window Systems**

- Kalwall heavy-duty Window Replacement Systems – like our prefabricated Curtainwall Systems – are factory-assembled into easily managed building units.
- Kalwall provides optimum performance-controlled daylighting and still allows for fulfillment of vision/ventilation requirements.
- Vandal, graffiti, and impact resistance add up to minimal maintenance expenses with Kalwall.
- Eliminates the need for costly blinds, shades or light shelves!
8 Daylighting Systems... Endless Possibilities

**Standard Skylights**

- 2¾" (70 mm) and 4" (100 mm) thick flat Skylights up to 5' x 20' (1524 mm x 6096 mm).
- Pyramids from 4' (1220 mm) square up to 20' (6096 mm) square, 3 slopes.
- Geo-Roof® units in standard-sized units from 8' to 24' diameter (2440 mm to 7315 mm), 15° slope.
- Pyramids and Geo-Roofs available knocked down or prefabricated.
- These skylights are standardized for rapid fabrication and delivery.

**Pre-engineered Skylight Systems**

- Centerline self-supporting ridges with 20°, 27°, 33°, 45°, slope to 20' (6096 mm) span.
- Kalcurve™ 180°, Low-Profile 90° in 1' (300 mm) curb width increments: 3' (914 mm) to 24' (7315 mm).
- Lightweight – less than 3 lbs. per square foot (145 Pa/m²) means sub-structure may be minimized. Only thrust-bearing curbs designed to accommodate local live, snow and wind load designs are required.

**Custom Skyr‚roof™ Systems**

- Sandwich Panel Systems over sub-structure designed and installed by others.
- Flat, curved or combination for design versatility and consistent with all Kalwall Systems.
- Easy, fast installation, coupled with large-sized panels to eliminate troublesome joints.
Kalwall, with strategic partner Structures Unlimited, Inc., offers a single-source solution to self-supporting systems with clearspans over 150 feet. Pre-engineered, custom-fabricated aluminum box beam structures are combined with Kalwall panels to create a total composite Skyroof™ System or even an entire building.
Wall/Panel-Unit Wall System Details

For 2⅞" (70 mm) vertically oriented panels.

These are standard Clamp-tite™ details. Systems for other conditions, e.g., horizontally oriented, concealed fastener, Kalcurve™, Explosion Venting or Blast Resisting, are similar, but do contact Kalwall for specifics. High-performance coatings in Kalwall Corrosion Resistant Finish are standard. CAD versions of these details and more available at www.kalwall.com.

KALWALL SPAN TABLE — 4' (1200 mm) MODULE

<table>
<thead>
<tr>
<th>Maximum Allowable Clearspan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Translucent Panel</td>
</tr>
<tr>
<td>Panel Unit Wall Mid-span Join</td>
</tr>
<tr>
<td>2&quot; (51 mm) Batten</td>
</tr>
<tr>
<td>2⅞&quot; (70 mm) ST+ #4SSE</td>
</tr>
<tr>
<td>3⅛&quot; (83 mm) IS-H</td>
</tr>
<tr>
<td>Silhouette Stiffener</td>
</tr>
</tbody>
</table>

Clearspan at 25 p.s.f. (1.2 kPa) wind pressure, L/60 minimum. Spans based on engineering data and tests. Others possible. CAUTION! Spans will vary with panel internal grid core size and orientation. Above based on grid oriented the panel length.

See www.kalwall.com for more complete CAD Details!

Details 5, 7, and 8 show thermally broken options. All Kalwall windows are thermally broken.

Blue items are field-installed and may require trimming.
Shed/Supported Ridge Skyroof™ Details

For 2½" (70 mm) vertically and horizontally oriented flat panels.

Details for other conditions, e.g., Kalcurve™, self-supporting ridge, pyramid, hurricane or blast resistant, are similar, but not identical so be sure to contact Kalwall.

Blue items are field-installed and may require trimming.

Factory-sealed perimeter frames.

SPAN GUIDE CHART: 2½″ (70 mm) Skyroof

<table>
<thead>
<tr>
<th>Clearspan</th>
<th>5' (1500 mm) module; 8&quot; x 20&quot; (200 mm x 500 mm) grid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Live Load</td>
<td>30 lb./ft.² (1.44 kPa) 40 lb./ft.² (1.92 kPa)</td>
</tr>
<tr>
<td>Clearspan</td>
<td>11'-7&quot; (3530 mm) 10'-7&quot; (3225 mm)</td>
</tr>
<tr>
<td>5' (1500 mm) module: 12&quot; x 24&quot; (300 mm x 600 mm) grid</td>
<td>Clearspan 10'-2&quot; (3098 mm) 9'-0&quot; (2743 mm)</td>
</tr>
</tbody>
</table>

Clearspan @ 25 p.s.f. (1.2 kPa) wind pressure, L/60 minimum. **Note:** Longer clearspans possible. Contact factory.

**RECOMMENDED MINIMUM PITCH Skyroofs** (field-installed panels) 2°:12° (1:6)

Note: Exposed metal systems available in mill finish or Kalwall Corrosion Resistant Finish per AAMA 2604. Special finishes available as options.
Designing Panel-Unit Walls

COMPONENTS
Factory-unitized in any combination up to 5’ wide x 35’ high (1500 mm x 10700 mm). Panel-units ready for installation with no additional finishing. Panel-units eliminate superfluous structure required with most other systems.

LOUVERS – WALL SYSTEMS
Specify Kalwall louver as required.

THERMAL BREAK SASH
Kalwall-manufactured, AAMA C-70 or HC-70 tested projecting sash for top performance up to 5’ wide x 4’6” high (1500 mm x 1400 mm). Fixed and egress units also available. Glazing of all types, including 5/8” (16 mm) and 1” (25 mm) thick glazing panels available; factory-installed, if specified.

OPAQUE PANELS
Sandwich panel construction with fiberglass, aluminum or other faces can be combined in the same system for aesthetic value or to fine-tune energy performance.

PANEL OPTIONS

STANDARD PANEL SIZES
Width — 4’ and 5’ (1200 mm and 1500 mm); other widths up to 5’ (1524 mm) are optional.
Length — 3’ to 20’ (914 mm to 6096 mm) standard, 16’ (4880 mm) maximum for skyroofs.
Thickness — 4" (100mm), 2 3/4" (70 mm), 1 1/6" (40 mm) and 1" (25mm) for window glazing only.

STANDARD GRID DESIGNS
Nominal grid size — 12” x 24” (300 mm x 600 mm) standard; 8” x 20” (200 mm x 500 mm) optional for flat and curved panels.

OPTIONAL GRID DESIGNS
Other designs and grid sizes available. Please note that spans will vary with different grid patterns. Consult factory.

METAL FINISHES
The installation system is available in mill finish or Kalwall Corrosion Resistant Finish, a high-performance coating that meets AAMA 2604, 2605 optional. The finish is highly resistant to acids, alkalis, salt, industrial and moisture-laden atmospheres.

TRANSLUCENT COLORS
White and Crystal are standard, but other colors are available. The Kal-tint series and pebble finish are options. Colored translucent insulation inserts are available in an endless palette of colors.

Merry Hill Shopping Centre, Brierley Hill
INC Design Associates, Architects
Kalwall is a composite sandwich; various combinations are possible and test data should be interpreted from this point of view. Consult Sales Service Department for further clarification.

**FIRE TESTS:** Although some Kalwall panels contain combustible binder resins (ignition temperature greater than 800°F), they will withstand a 1200°F flame for one hour with no flame penetration; pass the Class “A” Burning Brand Test (ASTM E-108), or UL 790 listed Class A Roof system. All interior faces are CC-1 by ASTM D-635. Optional flame-spread/smoke developed ratings by UL 723 tunnel tests, including Class A, are available. Kalwall is listed by: ICC #PFC-1705; British Standard 476, Parts 3, 6, 7. NFPA 268 – Radiant Panel Test-Exterior Walls.

Whenever reference is made to fire tests, the numerical rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

**IMPACT:** The shatterproof exterior face will withstand 70 ft.-lbs. (81J) impact. Optional extra-hi-impact faces will withstand 230 ft.-lbs. (311J) impact by UL 972; also small and large missile.

<table>
<thead>
<tr>
<th>FACE SHEET COMBINATIONS</th>
<th>% LIGHT TRANSMISSION 2¾” (70mm) thick panels</th>
<th>SOLAR HEAT GAIN COEFFICIENT @0°∠</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTERIOR COLOR</td>
<td>INTERIOR COLOR</td>
<td>0.53 “U”</td>
</tr>
<tr>
<td></td>
<td></td>
<td>note 2</td>
</tr>
<tr>
<td>Greenish Blue</td>
<td>White</td>
<td>25</td>
</tr>
<tr>
<td>Aqua</td>
<td>White</td>
<td>29</td>
</tr>
<tr>
<td>Rose</td>
<td>White</td>
<td>30</td>
</tr>
<tr>
<td>Ice Blue</td>
<td>White</td>
<td>35</td>
</tr>
<tr>
<td>Greenish Blue Crystal</td>
<td>White</td>
<td>37</td>
</tr>
<tr>
<td>White</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Crystal</td>
<td>White</td>
<td>35</td>
</tr>
<tr>
<td>Crystal</td>
<td>Crystal</td>
<td>50</td>
</tr>
</tbody>
</table>

**HEAT & LIGHT TRANSMISSION:** Listed below are the light transmissions, solar heat gain coefficients, and U-factors for some 2¾” (70mm) thick Kalwall panel face sheet combinations. Others are available. Highlighted values indicate thermally broken panels.

**NEW Kalwall 4” (100 mm) thick panels**

<table>
<thead>
<tr>
<th>FACE SHEET COMBINATIONS</th>
<th>% LIGHT TRANSMISSION</th>
<th>SOLAR HEAT GAIN COEFFICIENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>EXTERIOR COLOR</td>
<td>INTERIOR COLOR</td>
<td>0.55 “U”</td>
</tr>
<tr>
<td>White</td>
<td>White</td>
<td>20</td>
</tr>
<tr>
<td>Crystal</td>
<td>White</td>
<td>35</td>
</tr>
<tr>
<td>Crystal</td>
<td>Crystal</td>
<td>50</td>
</tr>
</tbody>
</table>

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

1. Approximate values by ASTM E-972. Light transmission values over 30% not recommended for most applications.
2. U-values determined by NFRC test method (ASTM C-236, E-1423 and C-1199 at certified lab). Expressed as Btu/hr/ft²/°F for aluminum grid / thermally broken grid, nominal 12” x 24” (300 mm x 600 mm). Perimeter aluminum excluded. Test temperature at 15 mph wind (6.7 m/s); 0°F (-18°C) cold side & 70°F (21°C) warm side.
3. Shading Coefficient (SC) is equal to 1.15 times the Solar Heat Gain Coefficient (SHGC).

**NFRC CERTIFIED SYSTEMS:** Kalwall systems provide the best overall U-values as low as .10 (.56 W/m²K)!

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

**WEIGHT:** Most panels and systems weigh under 3 p.s.f. (14.65 kg/m²).

**FIRE TESTS:** Although some Kalwall panels contain combustible binder resins (ignition temperature greater than 800°F), they will withstand a 1200°F flame for one hour with no flame penetration; pass the Class “A” Burning Brand Test (ASTM E-108), or UL 790 listed Class A Roof system. All interior faces are CC-1 by ASTM D-635. Optional flame-spread/smoke developed ratings by UL 723 tunnel tests, including Class A, are available. Kalwall is listed by: ICC #PFC-1705; British Standard 476, Parts 3, 6, 7. NFPA 268 – Radiant Panel Test-Exterior Walls.

Whenever reference is made to fire tests, the numerical rating is not intended to reflect hazards presented by this or any other material under actual fire conditions.

**IMPACT:** The shatterproof exterior face will withstand 70 ft.-lbs. (81J) impact. Optional extra-hi-impact faces will withstand 230 ft.-lbs. (311J) impact by UL 972; also small and large missile.
Kalwall Corporation is engaged in continuing research to improve its products. Therefore, the right is reserved to modify or change material in this brochure without notice. This is descriptive literature and does not constitute warranties, expressed or implied. For statement of warranty contact Kalwall Corporation.

©2009 Kalwall Corporation  8/09 25K

Kalwall
Since 1955

1111 Candia Road, P.O. Box 237, Manchester, NH 03105
Phone: 603-627-3861  Fax: 603-627-7905
www.kalwall.com

For immediate assistance call: 1-800-258-9777 (N. America)
or e-mail: info@kalwall.com
Inquires for the UK/EU, contact www.stoakes.co.uk