Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

Metric (SI) conversion figures are included throughout these details for reference. Numbers in parentheses ( ) are millimeters unless otherwise noted.

The following metric (SI) units are found in these details:
- m – meter
- cm – centimeter
- mm – millimeter
- s – second
- Pa – pascal
- MPa – megapascal
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Features

- Architectural Grade Window
- IsoLock™ Thermal Break
- Screw and Spline Frame Corner Joinery
- Factory Silicone Glazed
- Interior Applied Glazing Bead with Bulb Gasket
- Architectural Anodized Finishes and Applied Coatings
- Two Year Manufacturer’s Warranty

For specific product applications, consult your Kawneer representative.
<table>
<thead>
<tr>
<th>CLASS and GRADE</th>
<th>Architectural Grade AW-PG100-FW</th>
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<tbody>
<tr>
<td>TESTING STANDARD</td>
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<tr>
<td>FRAME DEPTH</td>
<td>2-1/4&quot; Overall Frame Depth</td>
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<tr>
<td>TYPICAL WALL THICKNESS</td>
<td>.125 Nominal</td>
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<tr>
<td>TYPICAL MAXIMUM SIZE</td>
<td>60&quot; x 96&quot;</td>
</tr>
<tr>
<td>TYPICAL MINIMUM SIZE</td>
<td>12&quot; x 12&quot;</td>
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</tbody>
</table>
| TYPICAL CONFIGURATIONS          | ![Typical Configurations](image)
| STANDARD INFILL OPTIONS         | 1"                              |
| STANDARD HARDWARE               | Not Applicable                  |
| OPTIONAL HARDWARE               | Not Applicable                  |
| OTHER OPTIONS                   | Unequal Leg Frames             
|                                  | Exterior Applied Muntins        |
|                                  | Perimeters and Sills            |
|                                  | Exterior Pannings and Interior Trims |
|                                  | Structural Mullions             |
|                                  | Vertically or Horizontally Stacked |
|                                  | Access Panels and Blinds        |
|                                  | Silicone Field Glazing upon Request |
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ACCESS PANEL WITH BLINDS

TYPICAL ELEVATION
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MUNTIN GRIDS

TYPICAL ELEVATION
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Features

- Architectural Grade Window
- IsoLock™ Thermal Break
- Mitered, Clipped and Staked Vent Corner Joinery
- Screw and Spline Frame Corner Joinery
- Flush Vent and Frame Design
- Factory Silicone Glazed
- Interior Applied Glazing Bead with Bulb Gasket
- Architectural Anodized Finishes and Applied Coatings
- Two Year Manufacturer's Warranty
- Compatible with Storefront and Curtain Wall Systems

For specific product applications, consult your Kawneer representative.
### 8225TLF Thermal Windows

**MARCH, 2019**

**EC 97911-197**

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<tr>
<td><strong>STANDARD HARDWARE</strong></td>
<td>Stainless Steel 4-Bar Hinges, Cast White Bronze Cam Locks</td>
</tr>
<tr>
<td><strong>OPTIONAL HARDWARE</strong></td>
<td>Access Control Locks, Limit Stop, Pole and Pole Ring</td>
</tr>
<tr>
<td><strong>OTHER OPTIONS</strong></td>
<td>Unequal Leg Frames, Exterior Applied Muntins, Insect Screens, Perimeters and Sills, Exterior Pannings and Interior Trims, Structural Mullions, Vertically or Horizontally Stacked, Access Panels and Blinds, Silicone Field Glazing upon Request</td>
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MUNTING GRIDS

TYPICAL ELEVATION

4 JAMB

5 APPLIED MUNTIN

6 JAMB
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### STAINLESS STEEL 4 BAR HINGES

A standard hinge for ventilators providing approximately 45° to 60° openings depending on size. An optional limit stop is available to restrict hinge travel and limit vent opening.

![4 Bar Hinges Diagram](image1)

### STANDARD CAM HANDLE

Cast white bronze cam handles are standard for the manual operation and locking of ventilators.

![Standard Cam Handle Diagram](image2)

### CAM HANDLE WITH POLE RING

Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

![Cam Handle with Pole Ring Diagram](image3)

### POLE RING

Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

![Pole Ring Diagram](image4)

### SASH POLE

A 3/4” diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze Pole Hanger.

![Sash Pole Diagram](image5)

### HANGER FOR SASH POLE

![Pole Hanger Diagram](image6)

### ACCESS CONTROL LOCK

In lieu of the standard cam handles cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.

![Access Control Lock Diagram](image7)
**Features**

- Architectural Grade Window
- IsoLock™ Thermal Break
- Mitered, Clipped and Staked Vent Corner Joinery
- Screw and Spline Frame Corner Joinery
- Flush Vent and Frame Design
- Factory Silicone Glazed
- Interior Applied Glazing Bead with Bulb Gasket
- Architectural Anodized Finishes and Applied Coatings
- Two Year Manufacturer’s Warranty
- Compatible with Storefront and Curtain Wall Systems

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For specific product applications, consult your Kawneer representative.
### 8225TLF Thermal Windows

**MARCH, 2019**

**EC 97911-197**

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<tr>
<td>TYPICAL MAXIMUM SIZE</td>
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<td>TYPICAL CONFIGURATIONS</td>
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<tr>
<td>STANDARD INFILL OPTIONS</td>
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<td>STANDARD HARDWARE</td>
<td>Stainless Steel 4-Bar Hinges</td>
</tr>
<tr>
<td></td>
<td>Cast White Bronze Cam Locks</td>
</tr>
<tr>
<td></td>
<td>88SS Support Arm (Units over 50&quot; in height)</td>
</tr>
<tr>
<td>OPTIONAL HARDWARE</td>
<td>Access Control Locks</td>
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<tr>
<td></td>
<td>Hook Bolt Lock Handle</td>
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<tr>
<td></td>
<td>Pivot Shoe Roto-Operator</td>
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<tr>
<td></td>
<td>Scissors Arm Roto-Operator</td>
</tr>
<tr>
<td></td>
<td>Limit Stop</td>
</tr>
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ACCESS PANEL WITH BLINDS
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MUNTIN GRIDS

TYPICAL ELEVATION

2-1/4" (57.2)

3/8" (9.5)

2-1/4" (93.7)

3/4" (19.1)

3-11/16" (93.7)

3-11/16" (93.7)

3/8" (9.5)

3/8" (9.5)
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<tr>
<td><strong>CAM HANDLE WITH POLE RING</strong></td>
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<tr>
<td><strong>POLE RING</strong></td>
<td>Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.</td>
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<td><strong>SASH POLE</strong></td>
<td>A 3/4” diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze pole hanger.</td>
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<tr>
<td><strong>HANGER FOR SASH POLE</strong></td>
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### 8225TLF Thermal Windows

**PIVOT-SHOE ROTO-OPERATOR**

Optional pivot shoe roto operator is located on the center line of the bottom horizontal frame. Standard finish shall be brushed copper nickel to match US-25-D.

### HOOK BOLT LOCK

For use with pivot-shoe roto operator in lieu of cam handles. Standard finish shall be US-25-D clear white bronze.

### 88SS SUPPORT ARM

Support arms are used when window height exceeds 50". When fully extended, the hardware automatically retains the ventilator in an open position.
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Features

- Architectural Grade Window
- IsoLock™ Thermal Break
- Mitered, Clipped and Staked Vent Corner Joinery
- Screw and Spline Frame Corner Joinery
- Flush Vent and Frame Design
- Factory Silicone Glazed
- Interior Applied Glazing Bead with Bulb Gasket
- Architectural Anodized Finishes and Applied Coatings
- Two Year Manufacturer’s Warranty
- Compatible with Storefront and Curtain Wall Systems

For specific product applications, consult your Kawneer representative.
## 8225TLF Thermal Windows

**INSWING CASEMENT WINDOW**

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<td><strong>TYPICAL MAXIMUM SIZE</strong></td>
<td>36&quot; x 60&quot;</td>
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<tr>
<td><strong>TYPICAL CONFIGURATIONS</strong></td>
<td></td>
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</tbody>
</table>

### STANDARD INFILL OPTIONS
- 1"

### STANDARD HARDWARE
- Stainless Steel 4-Bar Hinges
- Cast White Bronze Cam Locks

### OPTIONAL HARDWARE
- Access Control Locks
- Limit Stop
- Pole and Pole Ring
- Butt Hinges
- Friction Adjustor
- Keyed Limit Arm

### OTHER OPTIONS
- Unequal Leg Frames
- Exterior Applied Muntins
- Insect Screens
- Perimeters and Sills
- Exterior Pannings and Interior Trims
- Structural Mullions
- Vertically or Horizontally Stacked
- Access Panels and Blinds
- Silicone Field Glazing upon Request
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ACCESS PANEL WITH BLINDS

TYPICAL ELEVATION

8225TLF Thermal Windows
MARCH, 2019
EC 97911-197

ACCESS PANEL WITH BLINDS

HINGED LEFT

1

2

3

4

1 HEAD

2 SILL

3 JAMB

4 JAMB

INSWING CASEMENT WINDOW

ADME016EN
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MUNTIN GRIDS

Typical Elevation

1. Head
2. Applied Muntin
3. Sill
4. Jamb
5. Applied Muntin
6. Jamb

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STAINLESS STEEL
4 BAR HINGES

A standard hinge for ventilators providing approximately 45° to 60° openings depending on size. An optional limit stop is available to restrict hinge travel and limit vent opening.

STANDARD CAM HANDLE

Cast white bronze cam handles are standard for the manual operation and locking of ventilators.

CAM HANDLE WITH POLE RING

Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

POLE RING

Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

SASH POLE

A 3/4" diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze pole hanger.

HANGER FOR SASH POLE

ACCESS CONTROL LOCK

In lieu of the standard cam handles cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.
## BUTT HINGES

An optional hinge for ventilators providing a full 90° opening. Butt Hinges shall be finished to match the window.

![Butt Hinges](image)

## FRICTION ADJUSTOR

Friction adjustors shall be used with butt hinges for additional friction for control of the ventilator.

![Friction Adjustor](image)

## KEYED LIMIT ARM

Key released limit arms may be used to restrict ventilator opening when used with butt hinges.

![Keyed Limit Arm](image)
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Features

• Architectural Grade Window
• IsoLock™ Thermal Break
• Mitered, Clipped and Staked Vent Corner Joinery
• Screw and Spline Frame Corner Joinery
• Flush Vent and Frame Design
• Factory Silicone Glazed
• Interior Applied Glazing Bead with Bulb Gasket
• Architectural Anodized Finishes and Applied Coatings
• Two Year Manufacturer’s Warranty
• Compatible with Storefront and Curtain Wall Systems

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                        Cast White Bronze Cam Locks |
| OPTIONAL HARDWARE   | Butt Hinges  
                        Access Control Locks  
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                        Limit Stop  
                        Pole and Pole Ring  
                        Friction Adjustor  
                        Keyed Limit Arm  
                        Roto Operator |
| OTHER OPTIONS       | Unequal Leg Frames  
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                        Insect Screens  
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8225TLF Thermal Windows
OUTSWING CASEMENT WINDOW

MARCH, 2019
EC 97911-197

STAINLESS STEEL 4 BAR HINGES
A standard hinge for ventilators providing approximately 45° to 60° openings depending on size. An optional limit stop is available to restrict hinge travel and limit vent opening.

BUTT HINGES
An optional hinge for ventilators providing a full 90° opening. Butt hinges shall be finished to match the window.

FRICITION ADJUSTOR
Friction adjustors shall be used with butt hinges for additional friction for control of the ventilator.

ROTO OPERATOR
Roto operators are used with butt hinges only and located at the bottom horizontal frame. Standard finish shall be brushed copper nickel to match US-25-D.

STANDARD CAM HANDLE
Cast white bronze cam handles are standard for the manual operation and locking of ventilators.

CAM HANDLE WITH POLE RING
Cast white bronze cam handles with pole ring provide manual operation of ventilators located above reach. These handles are operated with a sash pole.

KEYED LIMIT ARM
Key released limit arms may be used to restrict ventilator opening when used with butt hinges.
Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

<table>
<thead>
<tr>
<th>POLE RING</th>
<th>Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.</th>
</tr>
</thead>
<tbody>
<tr>
<td>SASH POLE</td>
<td>A 3/4&quot; diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip. Available in 6 ft. and 12 ft. lengths with optional cast white bronze pole hanger.</td>
</tr>
<tr>
<td>HANGER FOR SASH POLE</td>
<td>In lieu of the standard cam handles cast white bronze access control locks are offered for managed control of vent operations. Lock is operated with a manganese bronze removable handle.</td>
</tr>
<tr>
<td>ACCESS CONTROL LOCK</td>
<td>Optional hook bolt lock in lieu of cam handle. Standard finish shall be US-25-D clear white bronze.</td>
</tr>
<tr>
<td>MULTI-POINT LOCK</td>
<td>Optional single locking handle for concealed multi-point locks located on the vertical frame. Standard finish shall be US-25-D clear white bronze.</td>
</tr>
<tr>
<td>RESCUE WINDOW SIGN</td>
<td>Vinyl rescue window sign with lettering on both sides. Colors are black letters on a yellow background.</td>
</tr>
</tbody>
</table>

**8225TLF Thermal Windows**

**OUTSWING CASEMENT WINDOW**

POLE RING

- Cast white bronze pole ring is used in conjunction with locking hardware for sash pole operation of ventilators.

SASH POLE

- A 3/4" diameter aluminum sash pole with a cast white bronze pull down hook and black rubber tip.
- Available in 6 ft. and 12 ft. lengths with optional cast white bronze pole hanger.

HANGER FOR SASH POLE

- In lieu of the standard cam handles cast white bronze access control locks are offered for managed control of vent operations.
- Lock is operated with a manganese bronze removable handle.

ACCESS CONTROL LOCK

- Optional hook bolt lock in lieu of cam handle. Standard finish shall be US-25-D clear white bronze.

MULTI-POINT LOCK

- Optional single locking handle for concealed multi-point locks located on the vertical frame. Standard finish shall be US-25-D clear white bronze.

RESCUE WINDOW SIGN

- Vinyl rescue window sign with lettering on both sides. Colors are black letters on a yellow background.
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Additional information and CAD details are available at www.kawneer.com
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Additional information and CAD details are available at www.kawneer.com
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**PRE-SET PANNING**

**WRAP AROUND PANNING**

Note: Panning shown with fixed window also available for P.O., P.I., C.O., and C.I.
Additional information and CAD details are available at www.kawneer.com
WIND LOAD CHARTS

Mullions are designed for deflection limitations in accordance with AAMA TIR-A11 of L/175 up to 13'-6" and L/240 +1/4" above 13'-6". These curves are for mullions WITH HORIZONTALS and are based on engineering calculations for stress and deflection. Allowable wind load stress for ALUMINUM 15,152 psi (104MPa), STEEL 30,000 psi (207MPa). Charted curves, in all cases are for the limiting value. Wind load charts contained herein are based upon nominal wind load utilized in allowable stress design. A conversion from Load Resistance Factor Design (LRFD) is provided. To convert ultimate wind loads to nominal loads, multiply ultimate wind loads by a factor of 0.6 per ASCE/SEI 7. A 4/3 increase in allowable stress has not been used to develop these curves. For special situations not covered by these curves, contact your Kawneer representative for additional information.
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### WIND LOAD CHARTS

#### MULLION CENTERS IN METERS

<table>
<thead>
<tr>
<th>Mullion Centers in Meters</th>
<th>Mullion Height in Meters</th>
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</thead>
<tbody>
<tr>
<td>1.0</td>
<td>3.0</td>
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<tr>
<td>2.0</td>
<td></td>
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</tbody>
</table>

#### MULLION CENTERS IN FEET

<table>
<thead>
<tr>
<th>Mullion Centers in Feet</th>
<th>Mullion Height in Feet</th>
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</thead>
<tbody>
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<td>3.0</td>
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<tr>
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#### UNITS WITH HORIZONTALS

### ALLOWABLE STRESS AND LRFD ULTIMATE DESIGN LOADS

<table>
<thead>
<tr>
<th>Allowable Stress Design Load</th>
<th>LRFD Ultimate Design Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = 20 PSF (960)</td>
<td>33 PSF (1580)</td>
</tr>
<tr>
<td>B = 35 PSF (1680)</td>
<td>58 PSF (2780)</td>
</tr>
<tr>
<td>C = 50 PSF (2400)</td>
<td>83 PSF (4000)</td>
</tr>
<tr>
<td>D = 70 PSF (3360)</td>
<td>117 PSF (5600)</td>
</tr>
<tr>
<td>E = 90 PSF (4310)</td>
<td>150 PSF (7200)</td>
</tr>
</tbody>
</table>

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<tr>
<th>Allowable Stress Design Load</th>
<th>LRFD Ultimate Design Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = 20 PSF (960)</td>
<td>33 PSF (1580)</td>
</tr>
<tr>
<td>B = 25 PSF (1200)</td>
<td>42 PSF (2000)</td>
</tr>
<tr>
<td>C = 30 PSF (1440)</td>
<td>50 PSF (2400)</td>
</tr>
<tr>
<td>D = 40 PSF (1920)</td>
<td>67 PSF (3200)</td>
</tr>
<tr>
<td>E = 50 PSF (2400)</td>
<td>82 PSF (4000)</td>
</tr>
</tbody>
</table>

Allowable Stress Design Load

<table>
<thead>
<tr>
<th>Allowable Stress Design Load</th>
<th>LRFD Ultimate Design Load</th>
</tr>
</thead>
<tbody>
<tr>
<td>A = 30 PSF (1440)</td>
<td>50 PSF (2400)</td>
</tr>
<tr>
<td>B = 45 PSF (2160)</td>
<td>75 PSF (3600)</td>
</tr>
<tr>
<td>C = 60 PSF (2880)</td>
<td>100 PSF (4790)</td>
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<tr>
<td>D = 75 PSF (3600)</td>
<td>125 PSF (6000)</td>
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<tr>
<td>E = 90 PSF (4310)</td>
<td>150 PSF (7200)</td>
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</table>
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### Allowable Stress Design Load vs LRFD Ultimate Design Load

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</thead>
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<tr>
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<tr>
<td>B = 40 PSF (1920)</td>
<td>67 PSF (3200)</td>
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<tr>
<td>C = 60 PSF (2880)</td>
<td>100 PSF (4790)</td>
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<tr>
<td>D = 80 PSF (3830)</td>
<td>133 PSF (6380)</td>
</tr>
<tr>
<td>E = 100 PSF (4790)</td>
<td>167 PSF (7980)</td>
</tr>
</tbody>
</table>

NOTE: MULLION PROJECTION TO THE INTERIOR AVAILABLE
Generic Project Specific U-factor Example Calculation
(Peace of Glass will vary on specific products depending on sitelines)

Example Glass U-Factor = 0.42 Btu/hr • ft² • °F
Total Daylight Opening = 28-5/8" • 52-5/8" = 10.46 ft²
Total Projected Area = 3'-0" • 5'-0" = 15 ft²
Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)100
= (10.46 ÷ 15)100 = 70%

System U-factor vs Percent of Glass Area

Based on 70% glass and center of glass (COG) U-factor of 0.42
System U-factor is equal to 0.51 Btu/hr • ft² • °F
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**Fixed Window with 1” Glazing**

**Note:**
Values in parentheses are metric.
COG = Center of Glass.
Charts are generated per AAMA 507

**System U-factor vs Percent of Glass Area**

**Percent of Glass Area = Vision Area/Total Area**
Daylight Opening / Projected Area

**Notes for System U-factor, SHGC and VT charts:**
For glass values that are not listed, linear interpolation is permitted.
Glass properties are based on center of glass values and are obtained from your glass supplier.
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8225TLF Thermal Windows
THERMAL PERFORMANCE MATRIX (NFRC SIZE)

**Thermal Transmittance** \(^1\) (BTU/hr • ft \(^2\) • °F)

<table>
<thead>
<tr>
<th>Glass U-Factor (^3)</th>
<th>Overall U-Factor (^4)</th>
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</thead>
<tbody>
<tr>
<td>0.48</td>
<td>0.53</td>
</tr>
<tr>
<td>0.46</td>
<td>0.52</td>
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<tr>
<td>0.44</td>
<td>0.50</td>
</tr>
<tr>
<td>0.42</td>
<td>0.49</td>
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<tr>
<td>0.40</td>
<td>0.47</td>
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<tr>
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<td>0.43</td>
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<tr>
<td>0.32</td>
<td>0.41</td>
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<tr>
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<tr>
<td>0.28</td>
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<tr>
<td>0.24</td>
<td>0.35</td>
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<tr>
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<tr>
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<td>0.16</td>
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<tr>
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<tr>
<td>0.12</td>
<td>0.25</td>
</tr>
<tr>
<td>0.10</td>
<td>0.23</td>
</tr>
</tbody>
</table>

**Fixed Window with 1” Glazing**

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matrices are based on the standard NFRC specimen size of 1,200 mm wide by 1,500 mm high (47-1/4” by 59-1/16”).

**SHGC Matrix** \(^2\)

<table>
<thead>
<tr>
<th>Glass SHGC (^3)</th>
<th>Overall SHGC (^4)</th>
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</thead>
<tbody>
<tr>
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<tr>
<td>0.70</td>
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<td>0.56</td>
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</table>

**Visible Transmittance** \(^2\)

<table>
<thead>
<tr>
<th>Glass VT (^3)</th>
<th>Overall VT (^4)</th>
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<tbody>
<tr>
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<tr>
<td>0.05</td>
<td>0.04</td>
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</tbody>
</table>
CASEMENT INSWING / PROJECT-IN WINDOW WITH 1" GLAZING

Note:
Values in parentheses are metric.
COG = Center of Glass.
Charts are generated per AAMA 507

System U-factor vs Percent of Glass Area

Percent of Glass Area = Vision Area/Total Area
Daylight Opening / Projected Area

Notes for System U-factor, SHGC and VT charts:
For glass values that are not listed, linear interpolation is permitted.
Glass properties are based on center of glass values and are obtained from your glass supplier.
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CASEMENT INSWING / PROJECT-IN WINDOW WITH 1" GLAZING

System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area

System Visible Transmittance (VT) vs Percent of Vision Area
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<table>
<thead>
<tr>
<th>Thermal Transmittance (^1) (BTU/hr \cdot ft (^2) \cdot °F)</th>
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<th></th>
</tr>
</thead>
<tbody>
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<tr>
<td>0.10</td>
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</tr>
</tbody>
</table>

**CASEMENT INSWING / PROJECT-IN WINDOW WITH 1” GLAZING**

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

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2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 600 mm wide by 1,500 mm high (23-5/8” by 59-1/16”).

| SHGC Matrix \(^2\) | Visible Transmittance \(^2\) |
|---|---|---|---|
| Glass SHGC \(^3\) | Overall SHGC \(^4\) | Glass VT \(^3\) | Overall VT \(^4\) |
| 0.75 | 0.47 | 0.75 | 0.45 |
| 0.70 | 0.44 | 0.70 | 0.42 |
| 0.65 | 0.41 | 0.65 | 0.39 |
| 0.60 | 0.38 | 0.60 | 0.36 |
| 0.55 | 0.35 | 0.55 | 0.33 |
| 0.50 | 0.32 | 0.50 | 0.30 |
| 0.45 | 0.29 | 0.45 | 0.27 |
| 0.40 | 0.26 | 0.40 | 0.24 |
| 0.35 | 0.23 | 0.35 | 0.21 |
| 0.30 | 0.20 | 0.30 | 0.18 |
| 0.25 | 0.17 | 0.25 | 0.15 |
| 0.20 | 0.14 | 0.20 | 0.12 |
| 0.15 | 0.11 | 0.15 | 0.09 |
| 0.10 | 0.08 | 0.10 | 0.06 |
| 0.05 | 0.05 | 0.05 | 0.03 |
8225TLF Thermal Windows

PROJECT-OUT / CASEMENT OUTSWING WINDOW WITH 1" GLAZING

Note:
Values in parentheses are metric.
COG = Center of Glass.
Charts are generated per AAMA 507

Notes for System U-factor, SHGC and VT charts:
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System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area

System Visible Transmittance (VT) vs Percent of Vision Area
## Thermal Transmittance

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<td>0.61</td>
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## SHGC Matrix

<table>
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<th>Overall SHGC</th>
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<tbody>
<tr>
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<tr>
<td>0.70</td>
<td>0.45</td>
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<tr>
<td>0.65</td>
<td>0.42</td>
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<tr>
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## Visible Transmittance

<table>
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<td>0.42</td>
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<tr>
<td>0.65</td>
<td>0.39</td>
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<td>0.33</td>
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</table>

**NOTE:** For glass values that are not listed, linear interpolation is permitted.

1. U-Factors are determined in accordance with NFRC 100.
2. SHGC and VT values are determined in accordance with NFRC 200.
3. Glass properties are based on center of glass values and are obtained from your glass supplier.
4. Overall U-Factor, SHGC, and VT Matrices are based on the standard NFRC specimen size of 1,500 mm wide by 600 mm high (59-1/16" by 23-5/8").
Laws and building and safety codes governing the design and use of glazed entrance, window, and curtain wall products vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor. Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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