EC 97911-316 FEATURES

Features

- Trifab® VersaGlaze® 451/451T is 4-1/2" (114.3) deep with a 2" (50.8) sightline
- · Front, Center, Back or Multi-Plane glass applications
- Flush glazed from either the inside or outside
- · Screw Spline, Shear Block, Stick or Continuous Head and Sill fabrication
- Screw Spline Pre-Glazed option
- · SSG / Weatherseal option
- IsoLock® lanced and debridged thermal break option with Trifab® VersaGlaze® 451T
- Infill options up to 1-1/8" (28.6) thickness
- Permanodic[®] anodized finishes option
- Painted finishes in standard and custom choices

Optional Features

- Acoustical rating per AAMA 1801 and ASTM E 1425
- Project specific U-factors (See Thermal Charts)
- Integrates with Versoleil® SunShade Outrigger System and Horizontal Single Blade System
- Profit\$Maker® Plus die sets available

Product Applications

- Storefront, Ribbon Window, Punched Openings or Pre-Glazed
- Single-span
- Integrated entrance framing allowing Kawneer standard entrances or other specialty entrances to be incorporated
- Kawneer windows or GLASSvent® Windows for Storefront Framing are easily incorporated

For specific product applications, consult your Kawneer representative.



Laws and building and safety codes governing the design and use of Kawneer products, such as 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.



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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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EC 97911-316

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PICTORIAL VIEW (CENTER)

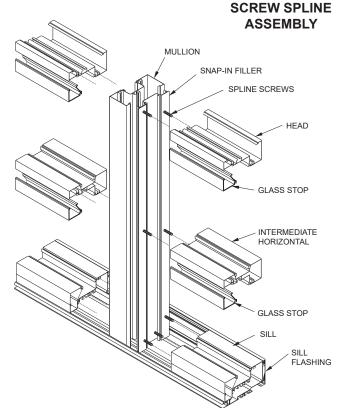
Trifab® VersaGlaze® 451/451T Framing System

EC 97911-316

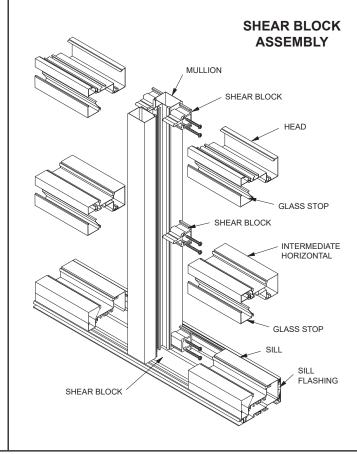
The split vertical in the **Screw Spline** system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members.

the verticals into splines extruded in the horizontal framing members.

The Individual units are then snapped together to form a complete frame.



The **Shear Block** system of fabrication allows a frame to be preassembled as a single unit. Horizontals are attached to the verticals with shear blocks.



STICK ASSEMBLY The Stick are faster these received horizontal Flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster the service of horizontal flashing in the stick are faster to the service of horizontal flashing in the stick are faster to the service of horizontal flashing in the service of horizontal fla

The **Stick** system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

NOTE:

If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 18)

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

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

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PICTORIAL VIEW (FRONT)

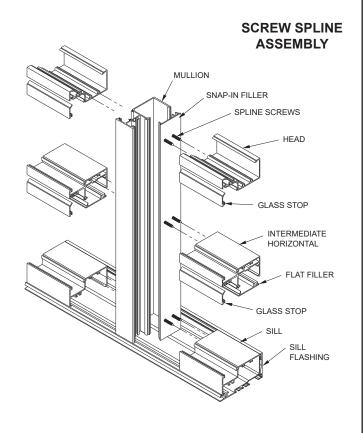
The split vertical in the **Screw Spline** system allows a frame to be

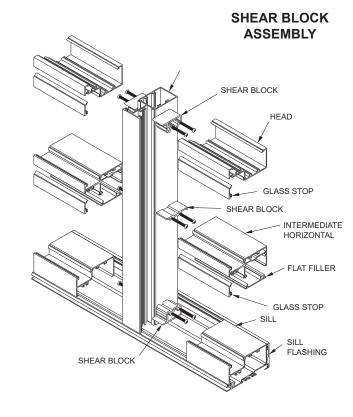
the verticals into splines extruded in the horizontal framing members.

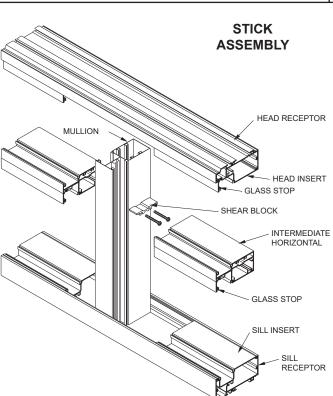
installed from unitized assemblies. Screws are driven through the back of

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If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion

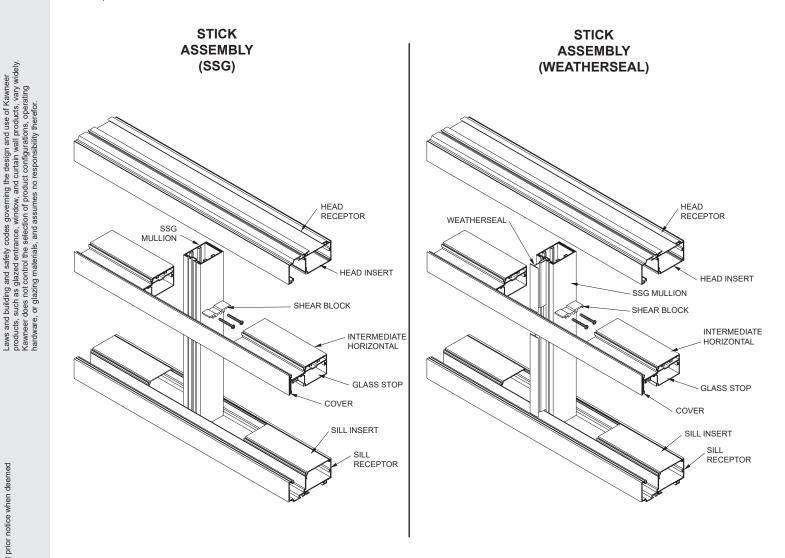


anchors must be used. (See page 40)

7

PICTORIAL VIEW (FRONT) EC 97911-316

The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

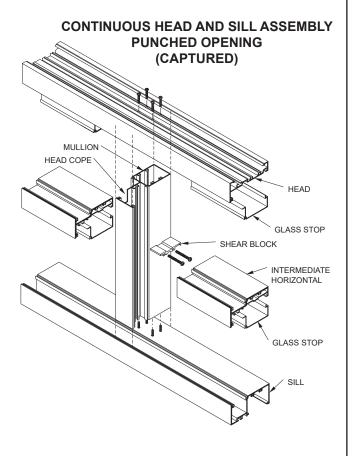


NOTE:

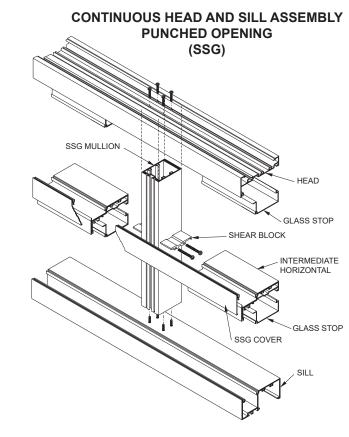
If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 40)

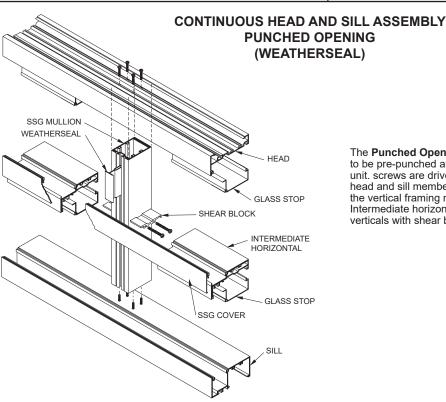


The CONTINUOUS HEAD AND SILL punched opening fabrication allows a frame to be pre-assembled and installed as a single unit. Screws are driven through the back of the head and sill members into splines extruded in the vertical framing members. Intermediate horizontals are attached to the verticals with shear blocks.



PICTORIAL VIEW (FRONT)





The Punched Opening fabrication allows a frame to be pre-punched and installed as a single unit. screws are driven through the back of the head and sill members into splines extruded in the vertical framing members. Intermediate horizontals are attached to the verticals with shear blocks.

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PICTORIAL VIEW (BACK)

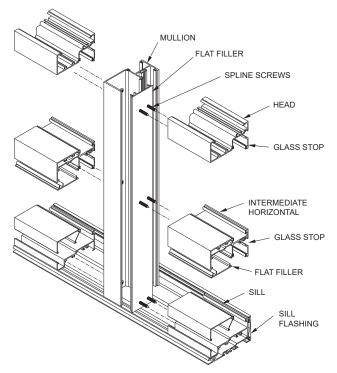
EC 97911-316

The split vertical in the Screw Spline system allows a frame to be installed from unitized assemblies. Screws are driven through the back of the verticals into splines extruded in the horizontal framing members. The Individual units are then snapped together to form a complete frame.

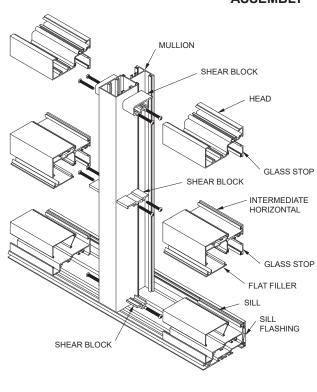
The Shear Block system of fabrication allows a frame to be preassembled as a single unit. Horizontals are attached to the verticals with shear blocks.

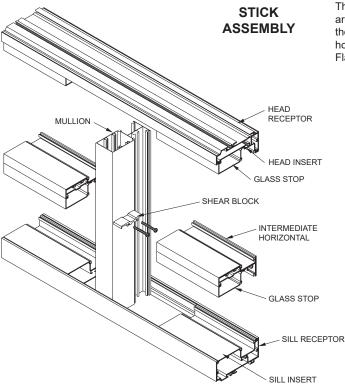
SCREW SPLINE ASSEMBLY

Trifab® VersaGlaze® 451/451T Framing System



SHEAR BLOCK ASSEMBLY





The Stick system allows on-site construction. Head and sill receptors are fastened to the surround. Vertical mullions are then installed in these receptors and are held in place by snap-in inserts. Intermediate horizontal members are attached to the verticals with shear blocks. Flashing is not required.

If the end reaction of the mullion (mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two) is more than 500 lbs., the optional mullion anchors must be used. (See page 51)

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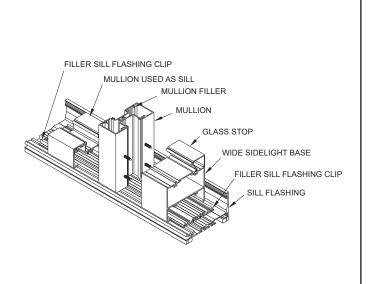
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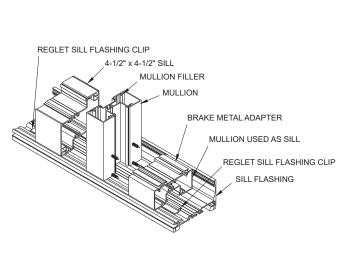
PICTORIAL VIEW (OPTIONAL 451 / 451T SILL ASSEMBLIES USING FILLER AND REGLET SILL FLASHING CLIPS)

Trifab® VersaGlaze® 451/451T Framing System

SCREW SPLINE ASSEMBLY

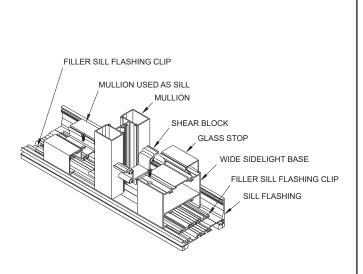
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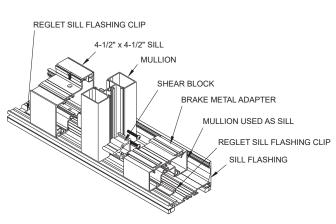




SHEAR BLOCK ASSEMBLY

The Shear Block system of fabrication allows a frame to be pre-assembled as a single unit. Horizontals are attached to the verticals with shear blocks.







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EC 97911-316 INDEX (CENTER)

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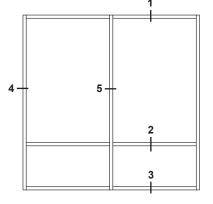


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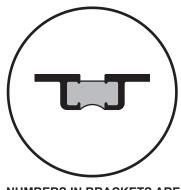
KAWNEER

BASIC FRAMING DETAILS (CENTER - Outside Glazed - Stops Up)

Additional information and CAD details are available at www.kawneer.com

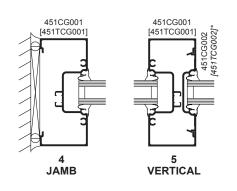


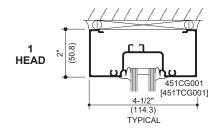
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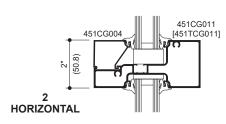


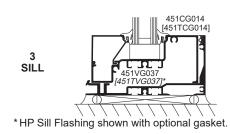
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

SCREW SPLINE

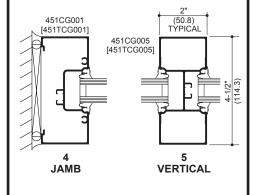


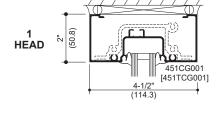


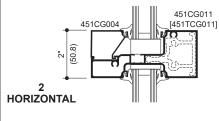


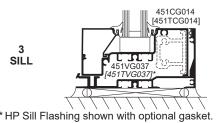


SHEAR BLOCK

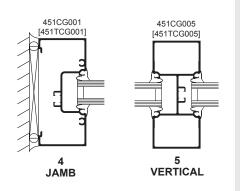


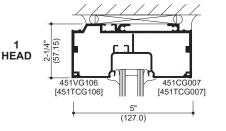


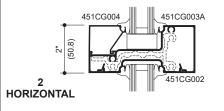


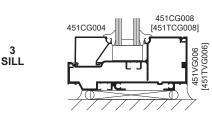


STICK









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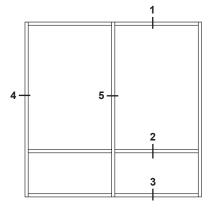
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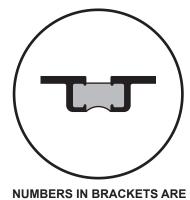
BASIC FRAMING DETAILS (CENTER - Inside Glazed - Stops Down)

Additional information and CAD details are available at www.kawneer.com

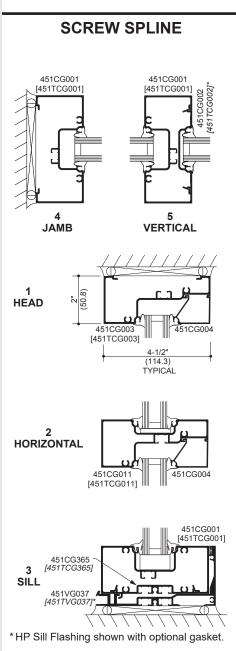


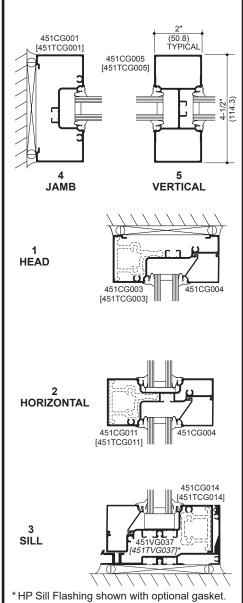
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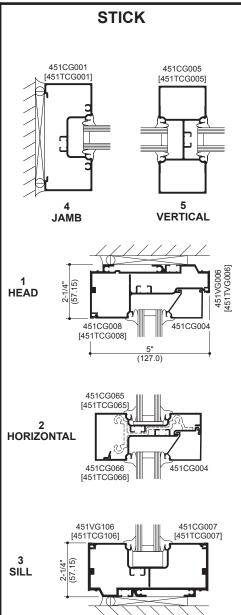
SHEAR BLOCK



THERMALLY BROKEN MEMBERS





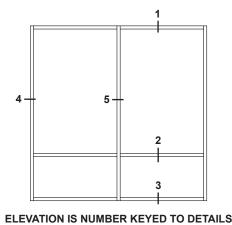


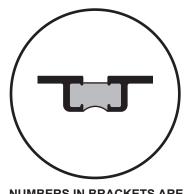


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BASIC FRAMING DETAILS (CENTER - Outside Glazed - Stops Down)

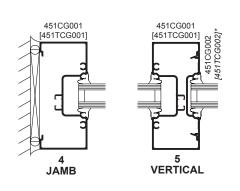
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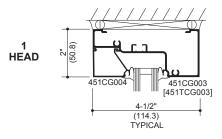


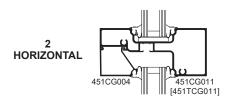


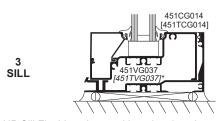
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

SCREW SPLINE



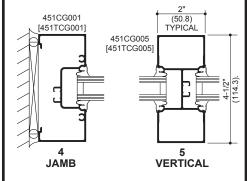


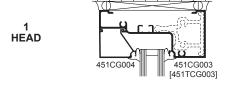


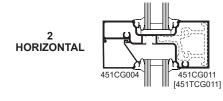


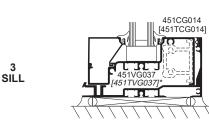
* HP Sill Flashing shown with optional gasket.

SHEAR BLOCK



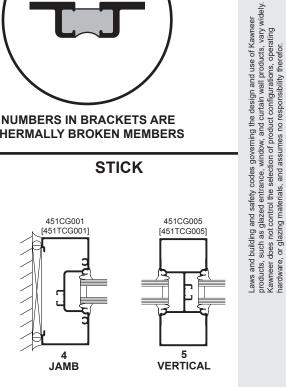


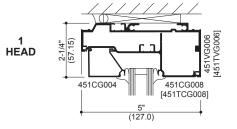


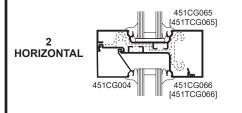


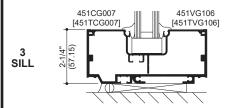
* HP Sill Flashing shown with optional gasket.

STICK









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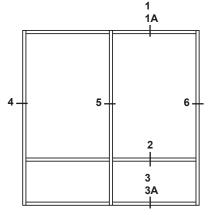
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PRE-GLAZED FRAMING DETAILS (CENTER - Outside Glazed - Stops Up)

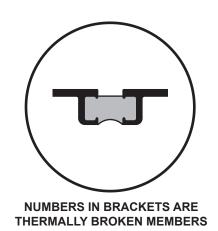
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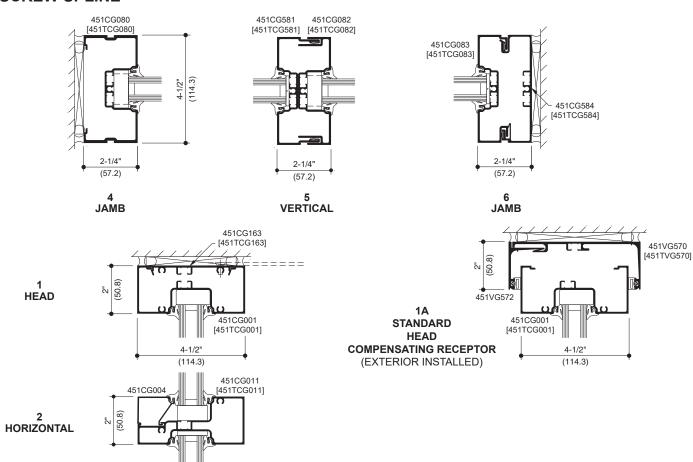
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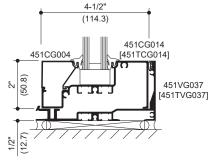


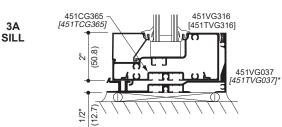


SCREW SPLINE



3 SILL

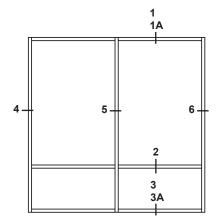




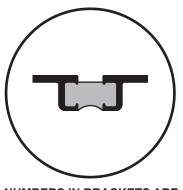


PRE-GLAZED FRAMING DETAILS (CENTER - Inside Glazed - Stops Down)

Additional information and CAD details are available at www.kawneer.com

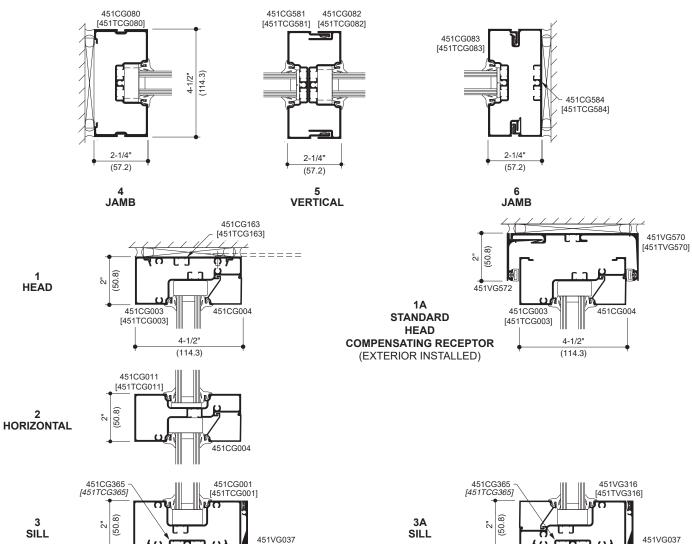


ELEVATION IS NUMBER KEYED TO DETAILS



NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

SCREW SPLINE



* HP Sill Flashing shown with optional gasket.



451VG037 [451TVG037]*

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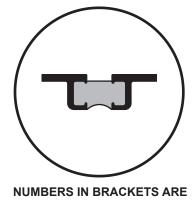
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PRE-GLAZED FRAMING DETAILS (CENTER - Outside Glazed - Stops Down)

EC 97911-316

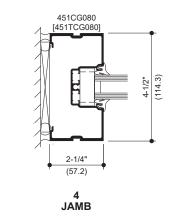
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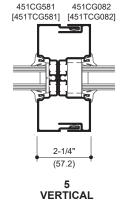
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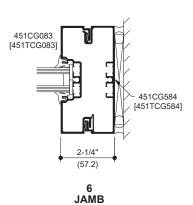


THERMALLY BROKEN MEMBERS

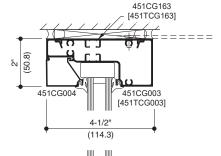
SCREW SPLINE

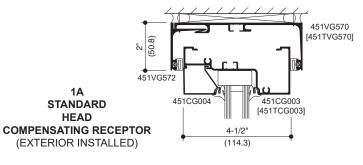








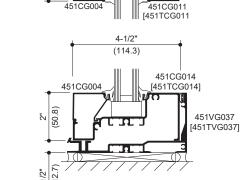




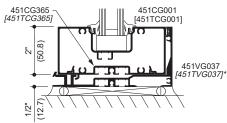
HORIZONTAL

SILL

(20.8)







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ADMC040EN

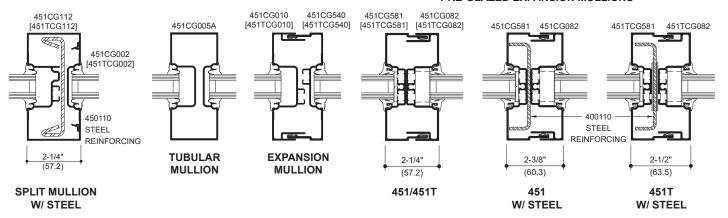
18

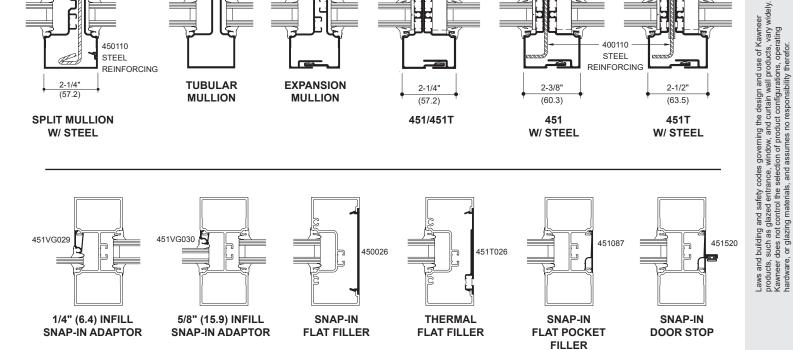
EC 97911-316

MISCELLANEOUS FRAMING (CENTER)

Additional information and CAD details are available at www.kawneer.com

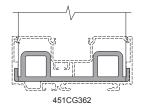
PRE-GLAZED EXPANSION MULLIONS







THERMAL POCKET FILLERS

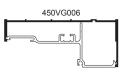


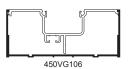
MULLION ANCHOR

NOTE:

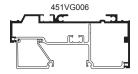
If the end reaction of the mullion (mullion spacing (ft.) times height (ft) times specified wind load (psf), divided by two) is more than 500 LBS., the optional mullion anchor must be used. Consult Application Engineering.

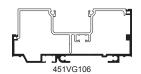
Mullion Anchor not used with Lightweight Receptor.





OPTIONAL LIGHTWEIGHT CAN RECEPTORS





OPTIONAL UNEQUAL LEG CAN RECEPTORS

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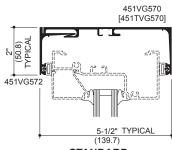
© 2018, Kawneer Company,



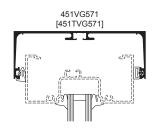
Trifab® VersaGlaze® 451/451T Framing System

MISCELLANEOUS FRAMING (CENTER)

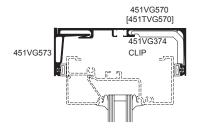
Additional information and CAD details are available at www.kawneer.com



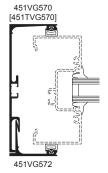
STANDARD HEAD COMPENSATING RECEPTOR (EXTERIOR INSTALLED)



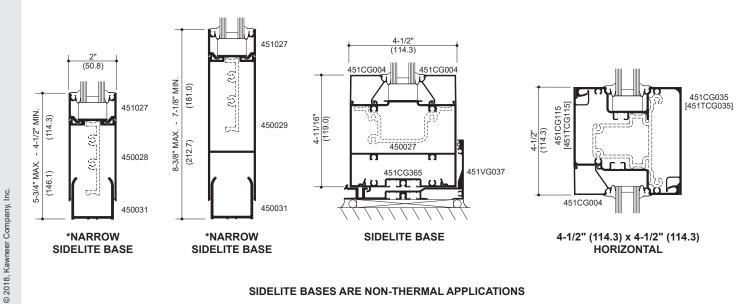
ONE PIECE HEAD COMPENSATING RECEPTOR



HEAVY WEIGHT HEAD COMPENSATING RECEPTOR (EXTERIOR INSTALLED)



JAMB COMPENSATING RECEPTOR (EXTERIOR INSTALLED)



SIDELITE BASES ARE NON-THERMAL APPLICATIONS

*NARROW SIDELITE BASES REQUIRE THE USE OF NON-THERMAL 2-PIECE VERTICALS ONLY.

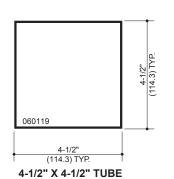
NOTE: SIDELITE BASES SHOWN ARE FOR USE WITH SCREW SPLINE AND SHEAR BLOCK SYSTEMS ONLY.



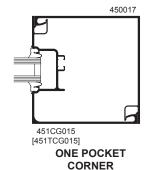
© 2018, Kawneer Company,

CORNERS (CENTER)

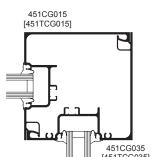
Additional information and CAD details are available at www.kawneer.com







TWO PIECE



NO POCKET CORNER

451CG015

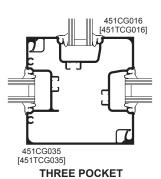
[451TCG015]

TWO POCKET

CORNER POST

451CG015

[451TCG015]

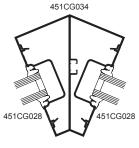


90° CORNER

TWO POCKET 90° CORNER

451CG016

[451TCG016]



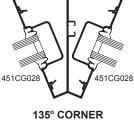
451TCG034

452CG034 [452TCG034] 452CG028 452CG028 [452TCG028 [452TCG028] 135° CORNER

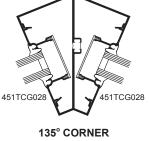
FOUR POCKET 90° CORNER

451CG016

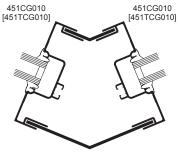
[451TCG016]



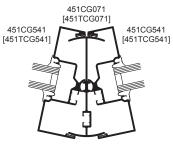
(NON-THERMAL)



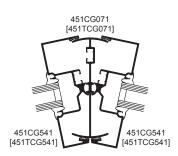
(THERMAL)



VARIABLE DEGREE BRAKE METAL CORNER



155° TO 180° PIVOT MULLION (OUTSIDE CORNER)

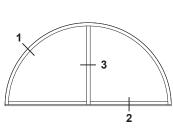


155° TO 180° PIVOT MULLION (INSIDE CORNER)

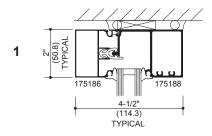


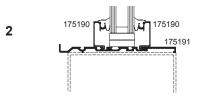
EC 97911-316 **CURVING & TRIM DETAILS**

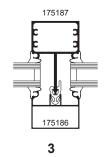
Additional information and CAD details are available at www.kawneer.com

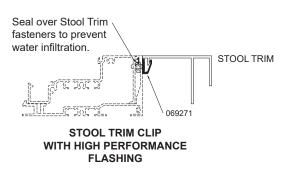


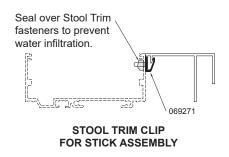
CURVING DETAILS (Center Plane Only)

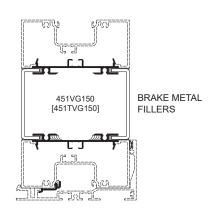




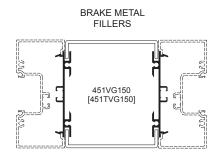








BRAKE METAL ADAPTOR AT HORIZONTAL



BRAKE METAL ADAPTOR AT VERTICAL



451081 450500

HEADER

451501

5

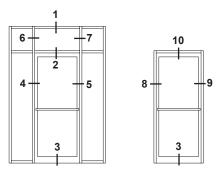
Additional information and CAD details are available at www.kawneer.com

Trifab® VersaGlaze® 451 FRAMING INCORPORATING KAWNEER® "190" DOORS. DOOR FRAMING NON-THERMAL ONLY

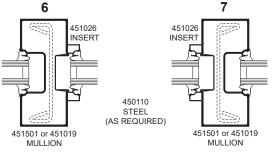
NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM.

SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

ENTRANCE FRAMING (CENTER)

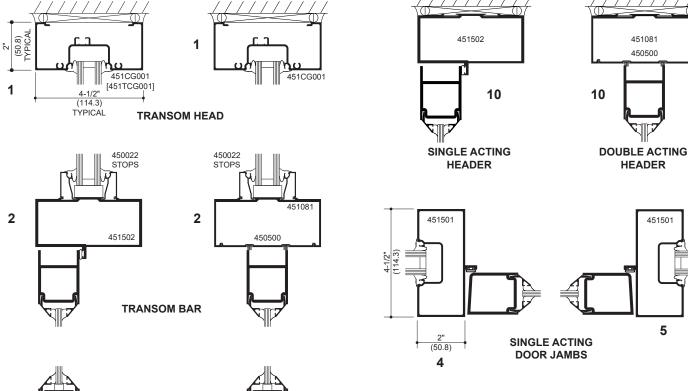


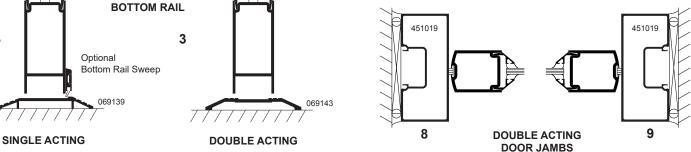
ELEVATIONS ARE NUMBER KEYED TO DETAILS



TRANSOM JAMBS

Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcina.







3

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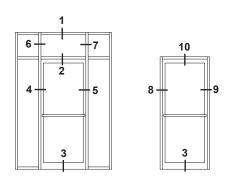
Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.
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Additional information and CAD details are available at www.kawneer.com

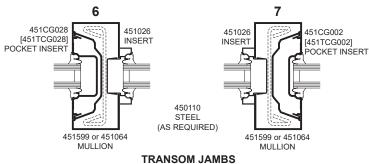
Trifab® VersaGlaze® 451 FRAMING INCORPORATING KAWNEER® "190" DOORS.

DOOR FRAMING NON-THERMAL ONLY

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

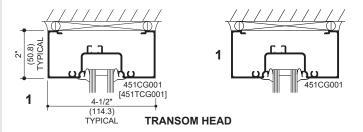


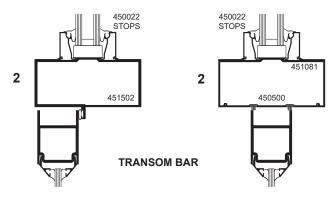
ELEVATIONS ARE NUMBER KEYED TO DETAILS

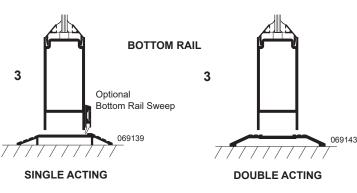


ENTRANCE FRAMING (CENTER - Open Back)

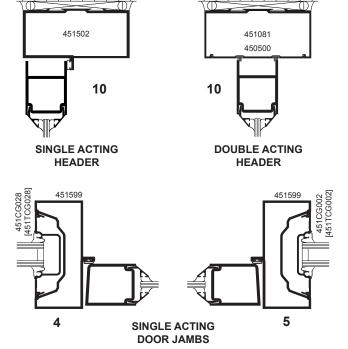
Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert with or without steel reinforcing.



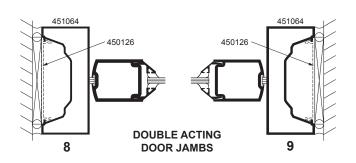




ADMC040EN



NOTE: Sidelite mullions must be oriented to provide at least one (1) deep vertical pocket per lite to facilitate glazing.



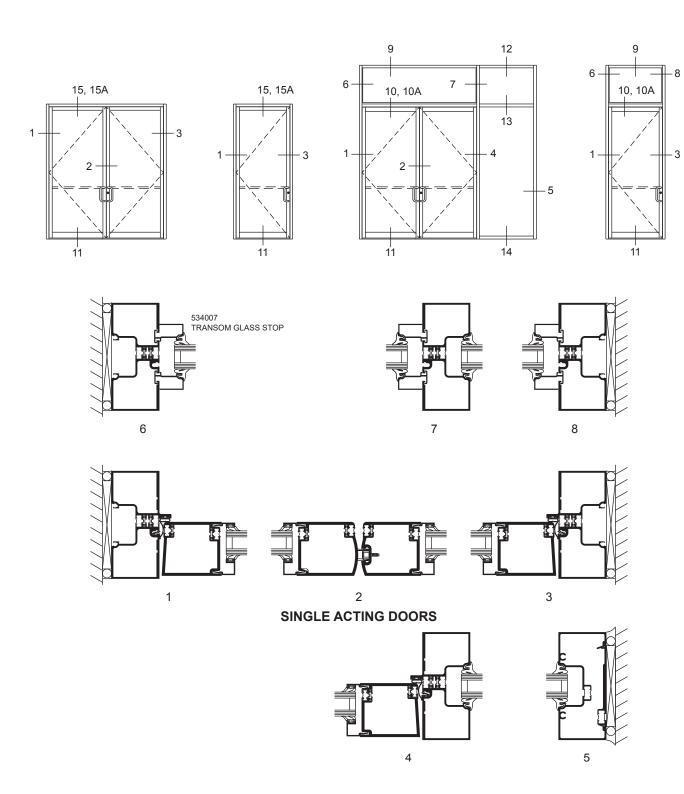


250T/350T/500T INSULPOUR® THERMAL ENTRANCES

Additional information and CAD details are available at www.kawneer.com

NOTE:

- 1. SERIES 250T NARROW STILE DOORS ARE DETAILED, MEDIUM STILE 350T DOORS AND WIDE STILE 500T DOORS ALSO MAY BE USED.
- 2. TRIFAB® VERSAGLAZE® 451T CENTER, 2" x 4-1/2" (50.8 x 114.3) FRAMING IS DETAILED WITH THE DOORS FOR REFERENCE. OTHER KAWNEER FRAMING SERIES OR CURTAIN WALL SYSTEMS MAY BE USED.



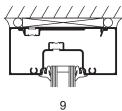


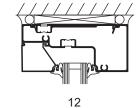
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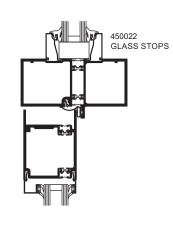
© 2018, Kawneer Company, Inc.

Additional information and CAD details are available at www.kawneer.com

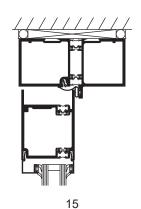




SINGLE ACTING DOORS



10

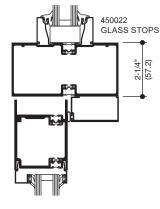


OPTIONAL BOTTOM RAIL WEATHERING

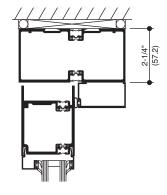
11

SURFACE OVERHEAD CLOSER

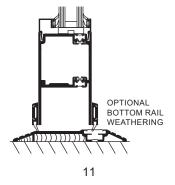
COC WITH SINGLE ACTING OFFSET ARM



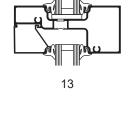


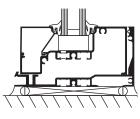


15A



CONSEALED OVERHEAD CLOSER





14

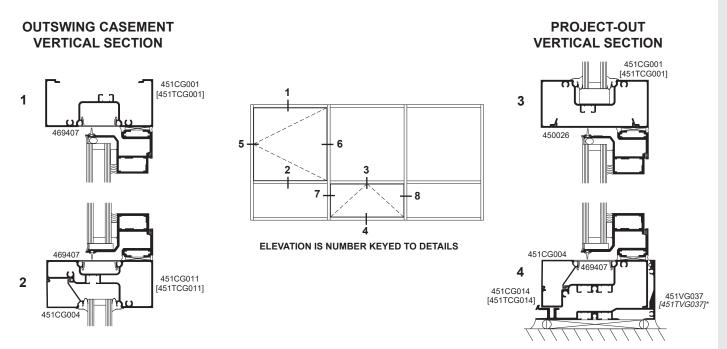


ADMC040EN kawneer.com

GLASSvent® WINDOW for STOREFRONT FRAMING (CENTER)

EC 97911-316

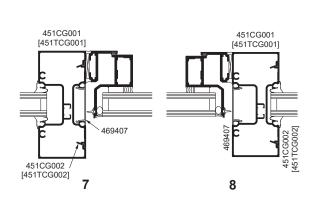
Additional information and CAD details are available at www.kawneer.com



OUTSWING CASEMENT HORIZONTAL SECTION

Structural Silicone Sealant (by Others)* 451CG0001 [451TCG0001] 451CG0001 451CG0001 65 66

PROJECT-OUT HORIZONTAL SECTION



NOTE: Black spacer is recommended when 1" (25.4) insulating glass is used.

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.



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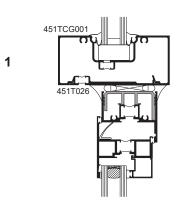
© 2018, Kawneer Company, Inc.

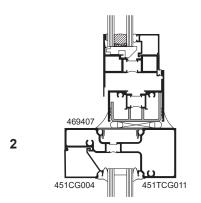
27

EC 97911-316

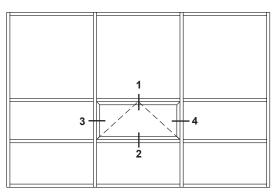
Additional information and CAD details are available at www.kawneer.com

PROJECT-OUT VERTICAL SECTION



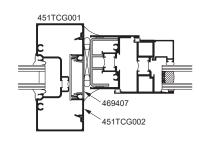


8225TL THERMAL WINDOWS SHOWN NOTE: OTHER VENT TYPES CAN BE ACCOMMODATED. CONSULT YOUR KAWNEER REPRESENTATIVE FOR OTHER OPTIONS

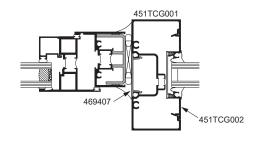


ELEVATION IS NUMBER KEYED TO DETAILS

PROJECT-OUT HORIZONTAL SECTION







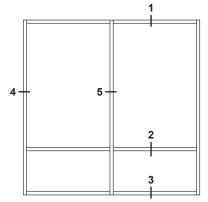
BASIC FRAMING DETAILS (CENTER - Outside Glazed - Stops Down)

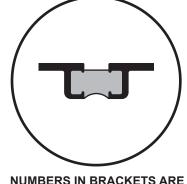
EC 97911-316

Hurricane Resistant Product

Additional information and CAD details are available at www.kawneer.com

LEVEL D - LARGE MISSILE IMPACT

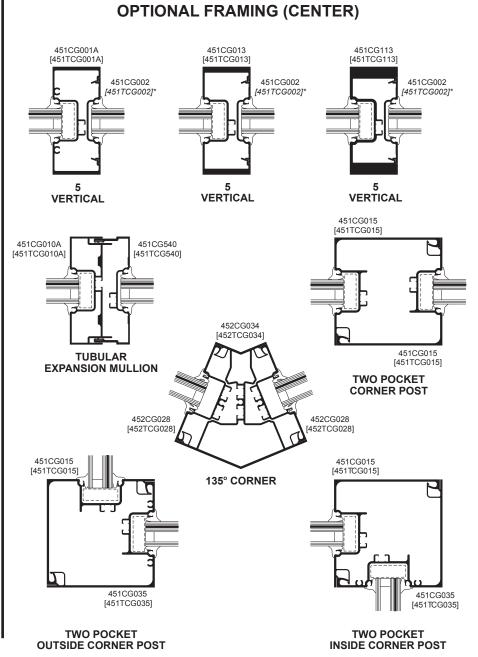




ELEVATION IS NUMBER KEYED TO DETAILS

NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

SCREW SPLINE 451CG001 451CG001 [451TCG001] [451TCG001] 451CG002 [451TCG002]^{*} **JAMB VERTICAL** 451CG363 **HEAD** 451CG003 [451TCG003] HORIZONTAL 451CG011 [451TCG011] 451CG001 [451TCG001] SILL 451HP127 451HP037



KAWNEER

[451THP037]

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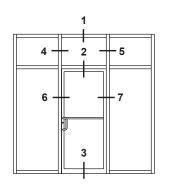
© 2018, Kawneer Company,

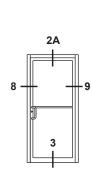
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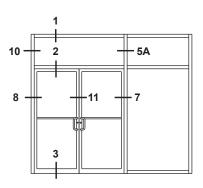
Additional information and CAD details are available at www.kawneer.com

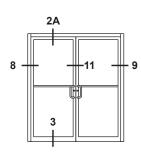
Trifab® VersaGlaze® 451 FRAMING INCORPORATING KAWNEER® "350/500 IR" DOORS (DRY GLAZED). DOOR FRAMING NON-THERMAL ONLY

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

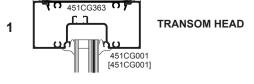


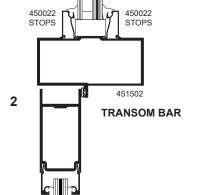


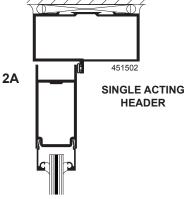


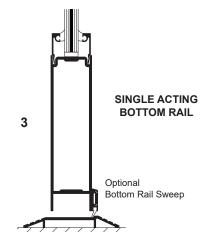


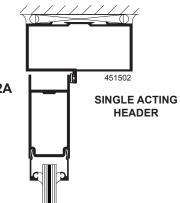
ELEVATIONS ARE NUMBER KEYED TO DETAILS



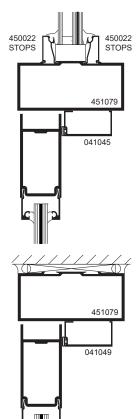








ADMC040EN



CONCEALED

OVERHEAD CLOSERS



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Hurricane Resistant Product

451CG002

575054

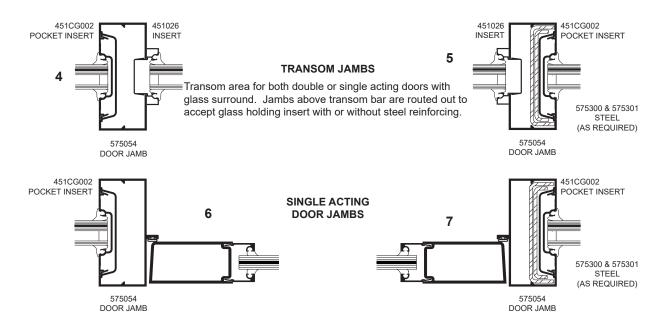
DOOR JAMB

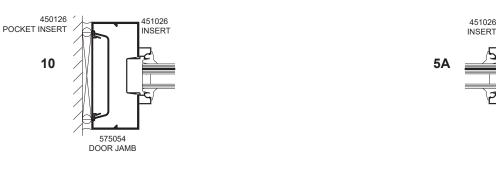
POCKET INSERT

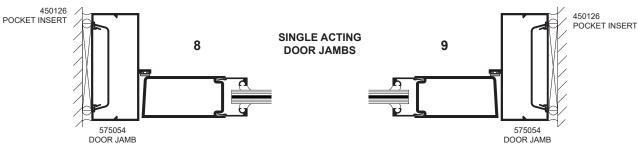
Additional information and CAD details are available at www.kawneer.com

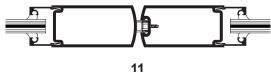
Trifab® VersaGlaze® 451 FRAMING INCORPORATING KAWNEER® "350/500 IR" DOORS (DRY GLAZED). DOOR FRAMING NON-THERMAL ONLY

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.









MEETING STILES

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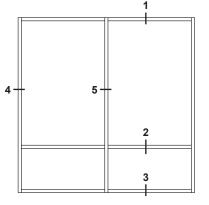
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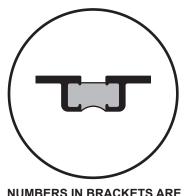
KAWNEER

BASIC FRAMING DETAILS (FRONT - Inside Glazed - Stops Down)

Additional information and CAD details are available at www.kawneer.com

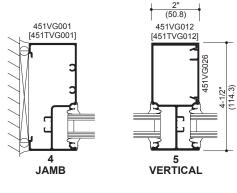


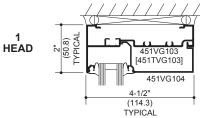
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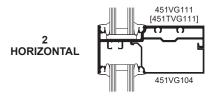


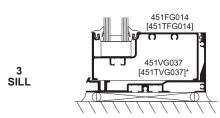
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS





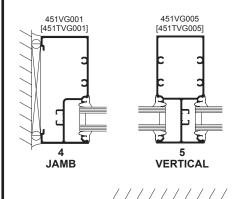






* HP Sill Flashing shown with optional gasket.

SHEAR BLOCK

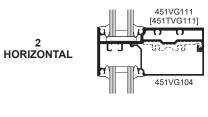


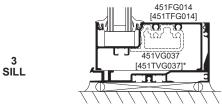


451VG103

[451TVG103]

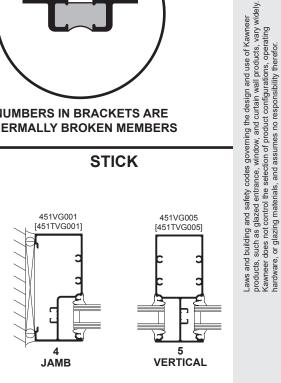
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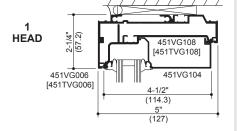


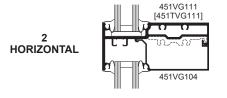


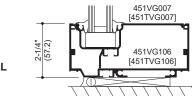
HP Sill Flashing shown with optional gasket.

STICK

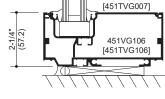








SILL



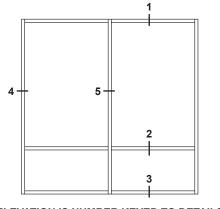
Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

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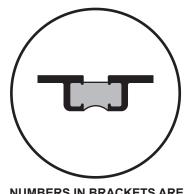
BASIC FRAMING DETAILS (FRONT - Outside Glazed - Stops Down)

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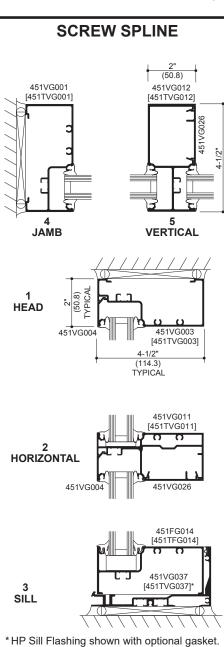
Additional information and CAD details are available at www.kawneer.com

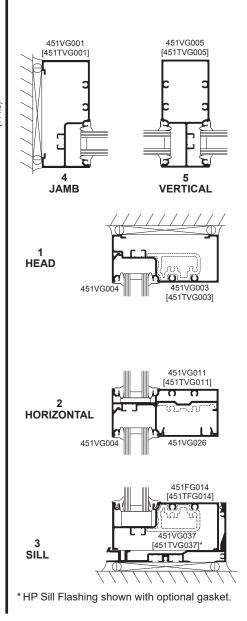


ELEVATION IS NUMBER KEYED TO DETAILS

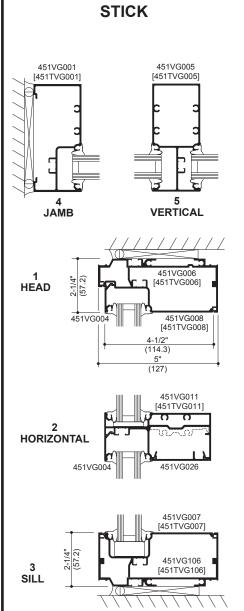


NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS





SHEAR BLOCK

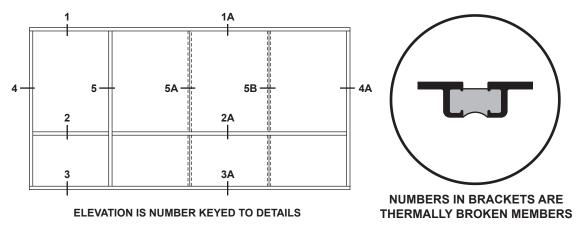




ADMC040EN kawneer.com

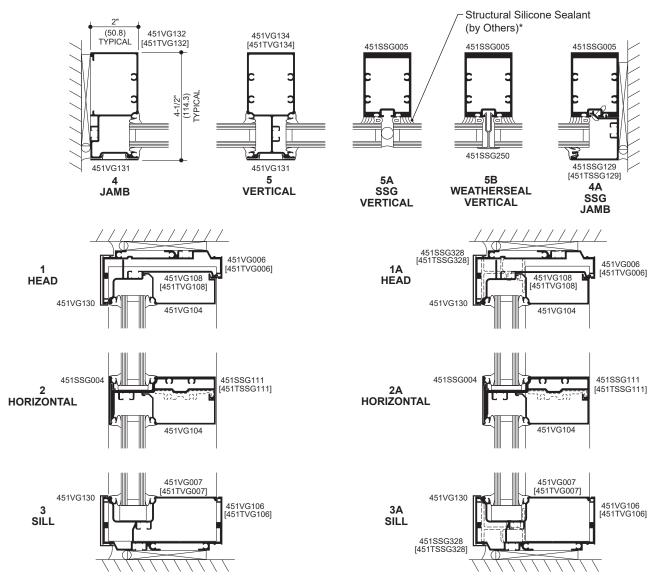
BASIC FRAMING DETAILS (FRONT)

Additional information and CAD details are available at www.kawneer.com



STICK (INSIDE GLAZED) TWO COLOR OPTION

STANDARD RECEPTOR with SSG ADAPTOR



^{*} INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.



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

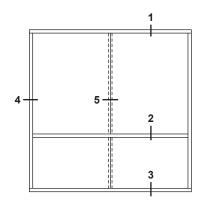
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Laws and building and safety codes governing the design and use of Kawneer brodicts, such as glazed entrance, window, and cutain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing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

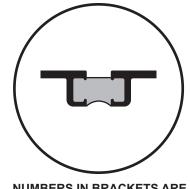
Kawneer reserves the right to change configuration without prior notice when deemed necessary for product improvement.

BASIC FRAMING DETAILS (FRONT)

Additional information and CAD details are available at www.kawneer.com

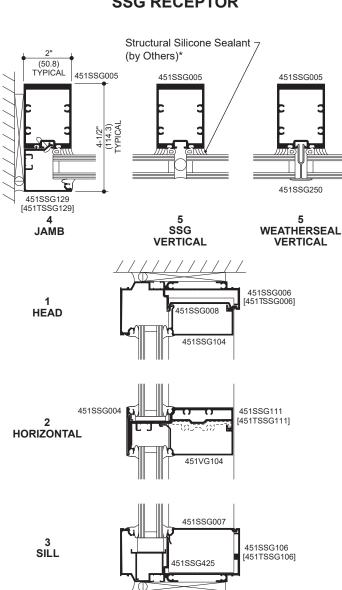


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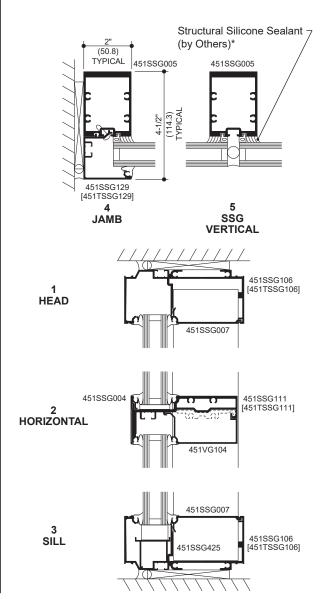


NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

STICK (INSIDE GLAZED) SSG RECEPTOR



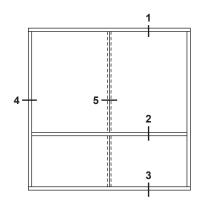
STICK (OUTSIDE GLAZED) SSG RECEPTOR



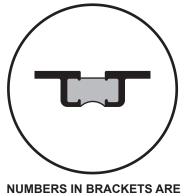
^{*} INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.

KAWNEER

Additional information and CAD details are available at www.kawneer.com



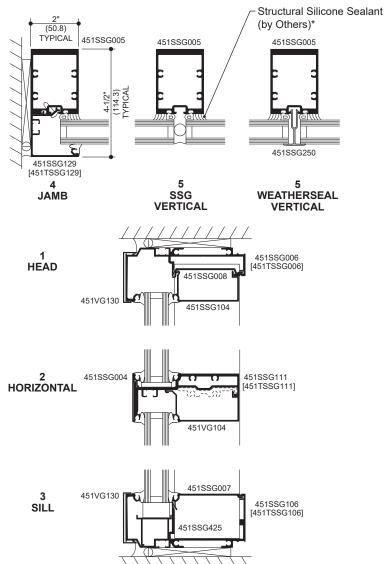
ELEVATION IS NUMBER KEYED TO DETAILS



NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

STICK (INSIDE GLAZED) TWO COLOR OPTION

SSG RECEPTOR



^{*} INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.



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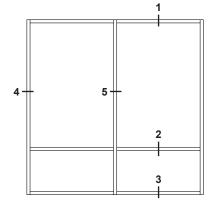
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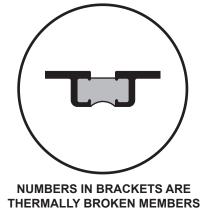
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EC 97911-316

BASIC FRAMING DETAILS (FRONT)

Additional information and CAD details are available at www.kawneer.com



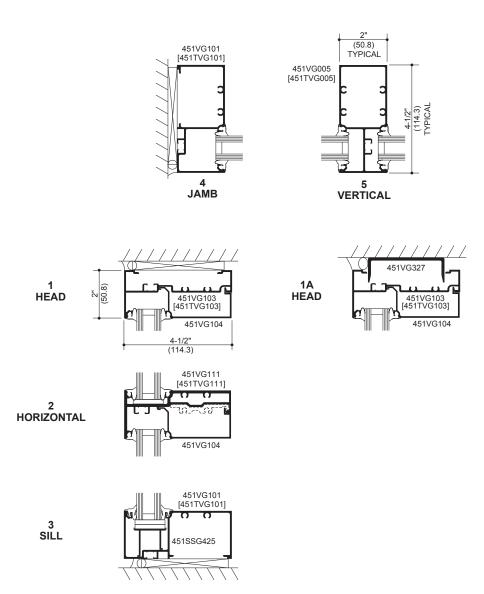


ELEVATION IS NUMBER KEYED TO DETAILS

THERMALLY BROKEN W

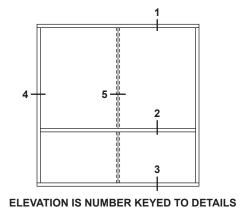
CONTINUOUS HEAD AND SILL (INSIDE GLAZED)

PUNCHED OPENING





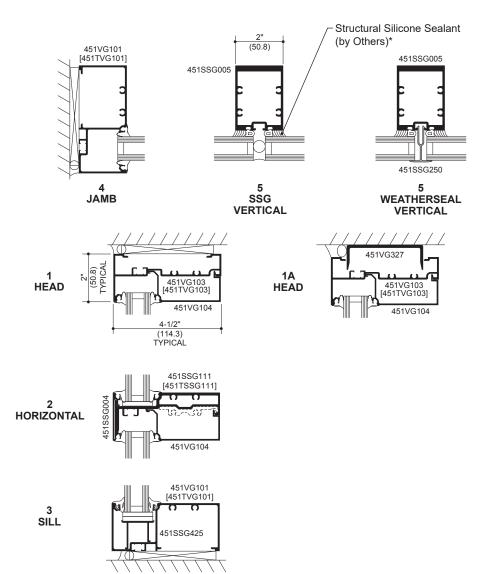
BASIC FRAMING DETAILS (FRONT)





CONTINUOUS HEAD AND SILL (INSIDE GLAZED) SSG \ WEATHERSEAL

PUNCHED OPENING



^{*} INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.



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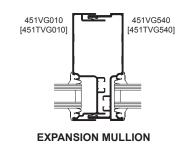
© 2018, Kawneer Company, Inc.

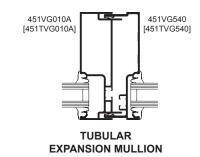
© 2018, Kawneer Company, Inc.

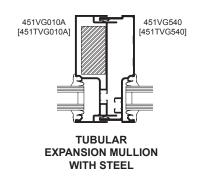
EC 97911-316

MISCELLANEOUS FRAMING (FRONT)

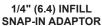
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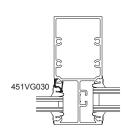




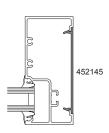




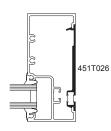




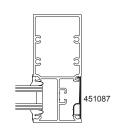
5/8" (15.9) INFILL SNAP-IN ADAPTOR



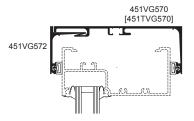
PVC FLAT FILLER (NON STRUCTURAL)



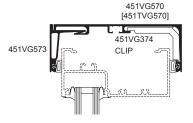
THERMAL FLAT FILLER



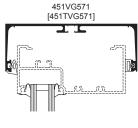
SNAP-IN FLAT FILLER



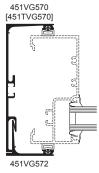
STANDARD - HEAD COMPENSATING RECEPTOR (EXTERIOR INSTALLED)



HEAVY WEIGHT - HEAD COMPENSATING RECEPTOR

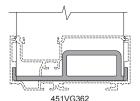


ONE PIECE - HEAD COMPENSATING RECEPTOR

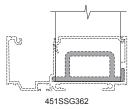


JAMB
COMPENSATING RECEPTOR
(EXTERIOR INSTALLED)

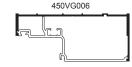


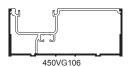


MULLION ANCHOR

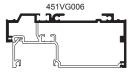


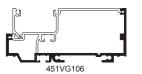
SSG MULLION ANCHOR





OPTIONAL LIGHTWEIGHT CAN RECEPTORS





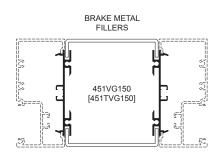
OPTIONAL UNEQUAL LEG CAN RECEPTORS

NOTE:

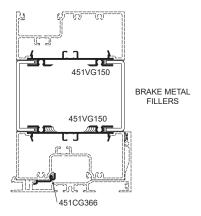
If the end reaction of the mullion (mullion spacing (ft.) times height (ft) times specified wind load (psf), divided by two) is more than 500 LBS., the optional Mullion Anchor must be used. Consult Application Engineering.

NOTE:

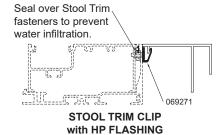
Mullion Anchor not used with Lightweight Receptor.



BRAKE METAL ADAPTOR



BRAKE METAL ADAPTOR AT HORIZONTAL





STOOL TRIM CLIP FOR STICK ASSEMBLY

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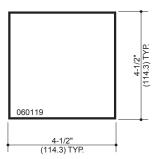
Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entirance, window, and cutrain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

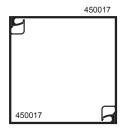
Laws and building and safety codes governing the design and use of Kawneer products, such as glazade afratance, window, and outfain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

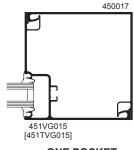
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EC 97911-316 CORNERS (FRONT)

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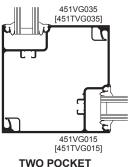


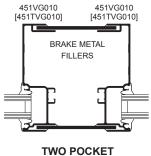


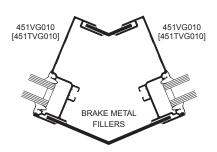
4-1/2" X 4-1/2" TUBE

TWO PIECE NO POCKET CORNER

ONE POCKET CORNER



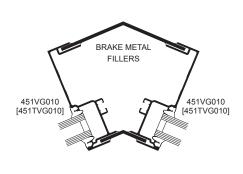


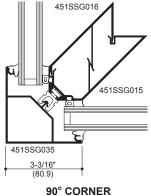


TWO POCKET 90° CORNER

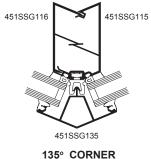
TWO POCKET CORNER POST

VARIABLE DEGREE BRAKE METAL OUTSIDE CORNER

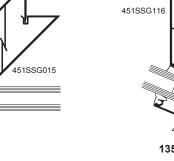




ADMC040EN

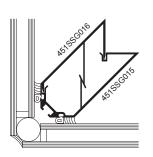


VARIABLE DEGREE BRAKE METAL INSIDE CORNER

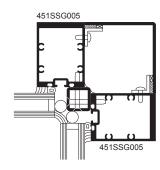


Additional information and CAD details are available at www.kawneer.com

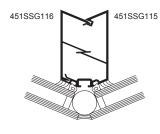
INSIDE GLAZED



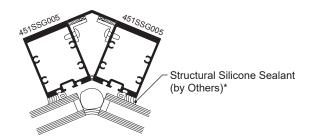
90° OUTSIDE CORNER



90° INSIDE CORNER

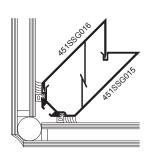


135° OUTSIDE CORNER

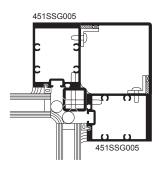


135° INSIDE CORNER

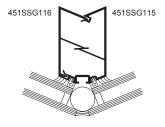
OUTSIDE GLAZED



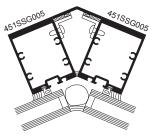
90° OUTSIDE CORNER



90° INSIDE CORNER



135° OUTSIDE CORNER



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135° INSIDE CORNER

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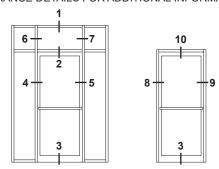
Additional information and CAD details are available at www.kawneer.com

Trifab® VersaGlaze® 451 FRAMING INCORPORATING KAWNEER "190" DOORS.

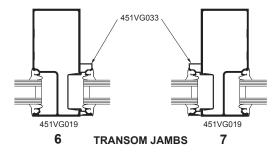
Trifab® VersaGlaze® 451/451T Framing System

DOOR FRAMING NON-THERMAL ONLY

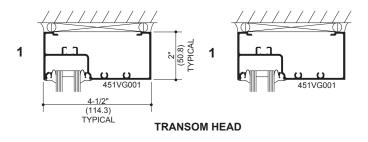
NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING SYSTEM. SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.

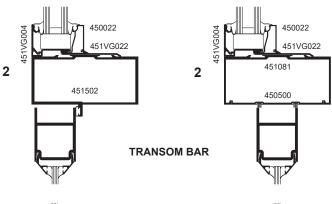


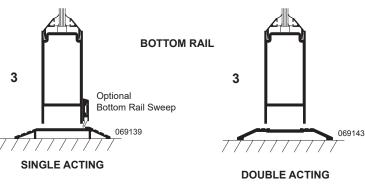
ELEVATIONS ARE NUMBER KEYED TO DETAILS

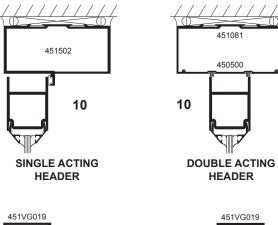


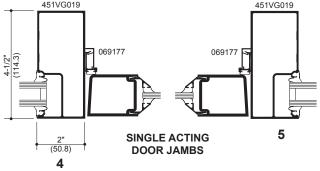
Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert.

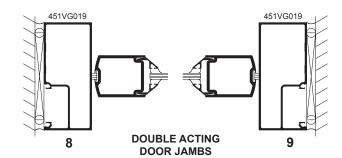












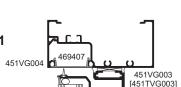
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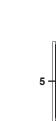
KAWNEER

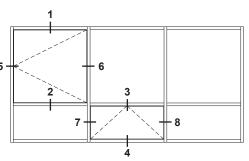
PROJECT-OUT VERTICAL SECTION



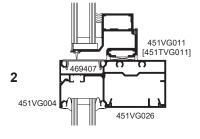
OUTSWING CASEMENT

VERTICAL SECTION

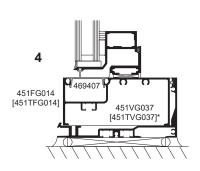




451VG011 [451TVG011] 3 451VG004

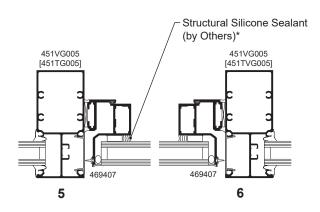


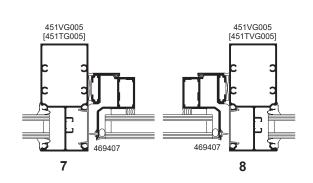
ELEVATION IS NUMBER KEYED TO DETAILS



OUTSWING CASEMENT HORIZONTAL SECTION

PROJECT-OUT HORIZONTAL SECTION





NOTE: Black spacer is recommended when 1" insulating glass is used.

* INSTALLER NOTE: Installer is responsible for all required compatibility review and approvals with the Structural Silicone Manufacturer and the Insulating Glass Unit Manufacturer.



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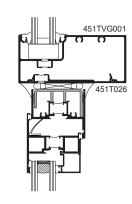
Trifab® VersaGlaze® 451/451T Framing System

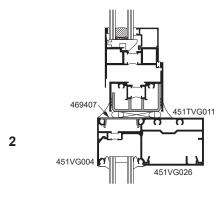
8225TL THERMAL WINDOWS (FRONT)

Additional information and CAD details are available at www.kawneer.com

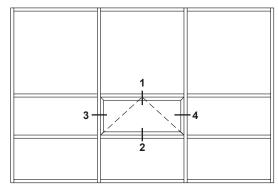
PROJECT-OUT VERTICAL SECTION

1



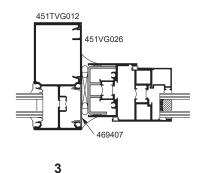


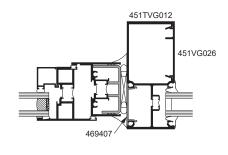
8225TL THERMAL WINDOWS SHOWN NOTE: OTHER VENT TYPES CAN BE ACCOMMODATED, CONSULT YOUR KAWNEER REPRESENTATIVE FOR OTHER OPTIONS



ELEVATION IS NUMBER KEYED TO DETAILS

PROJECT-OUT HORIZONTAL SECTION







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EC 97911-316

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INDEX (BACK)

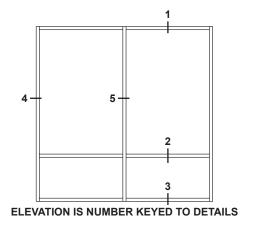
47

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CORNERS	52
ENTRANCE FRAMING	53



Additional information and CAD details are available at www.kawneer.com

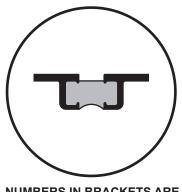


451VG001

[451TVG001]

JAMB

1 HEAD



NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

2" (50.8) 451VG001 [451TVG001] (114.3)451VG012 [451TVG012] **JAMB** 5 VERTICAL

TYPICAL

451VG003

[451TVG003

451VG011

[451TVG011]

451VG026

4-1/2" (114.3)

TYPICAL

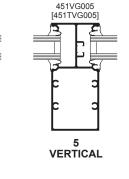
2" (50.8)

HEAD

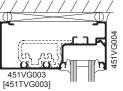
HORIZONTAL

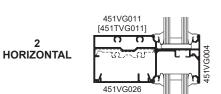
SCREW SPLINE

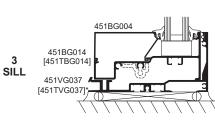




SHEAR BLOCK

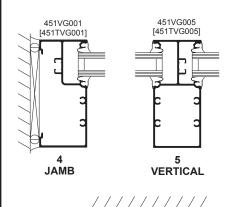


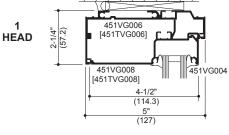


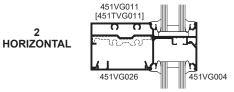


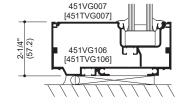
* HP Sill Flashing shown with optional gasket.

STICK









451BG014 [451TBG014] 451VG037 * HP Sill Flashing shown with optional gasket.

KAWNEER

3 SILL

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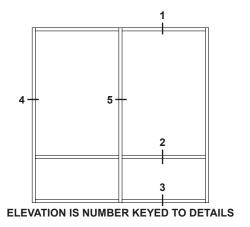
Laws and building and safety codes governing the design and use of Kawneer products, such as glazed entrance, window, and cutrain wall products, vary widely, Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

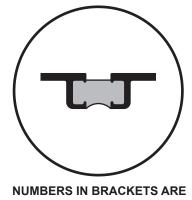
Trifab® VersaGlaze® 451/451T Framing System

EC 97911-316

BASIC FRAMING DETAILS (BACK - Outside Glazed - Stops Down)

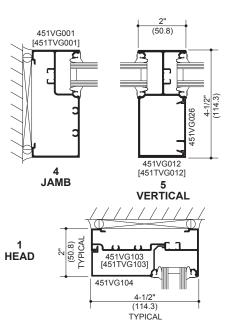
Additional information and CAD details are available at www.kawneer.com

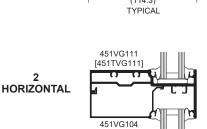


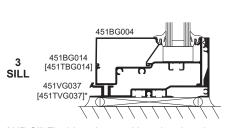


THERMALLY BROKEN MEMBERS

SCREW SPLINE

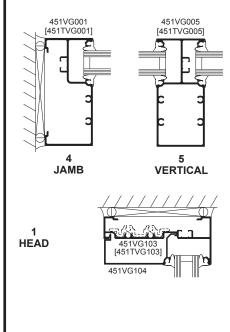


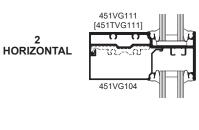


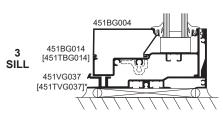


* HP Sill Flashing shown with optional gasket.

SHEAR BLOCK

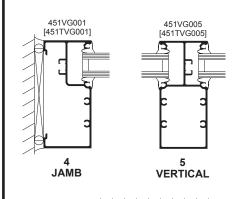


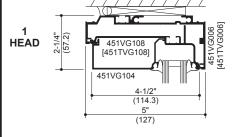


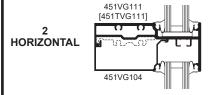


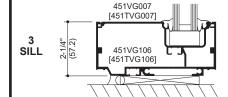
HP Sill Flashing shown with optional gasket.

STICK







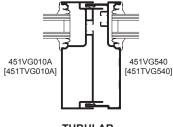


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MISCELLANEOUS FRAMING (BACK)

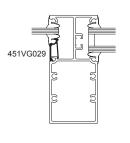


451VG010A [451TVG010A] 451VG540]

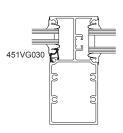
TUBULAR EXPANSION MULLION WITH STEEL

EXPANSION MULLION

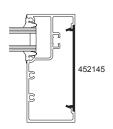
TUBULAR EXPANSION MULLION



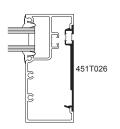
1/4" (6.4) INFILL SNAP-IN ADAPTOR



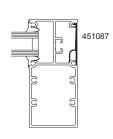
5/8" (15.9) INFILL SNAP-IN ADAPTOR



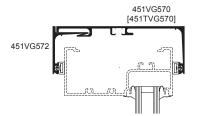
PVC FLAT FILLER (NON STRUCTURAL)



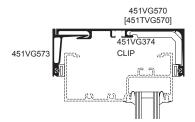
THERMAL FLAT FILLER



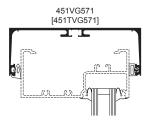
SNAP-IN FLAT FILLER



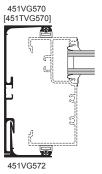
STANDARD - HEAD COMPENSATING RECEPTOR



HEAVY WEIGHT - HEAD COMPENSATING RECEPTOR (EXTERIOR INSTALLED)



STANDARD - HEAD COMPENSATING RECEPTOR



JAMB
COMPENSATING RECEPTOR
(EXTERIOR INSTALLED)

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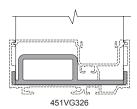
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EC 97911-316

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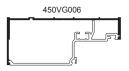


MULLION ANCHOR

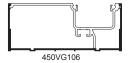
NOTE:

If the end reaction of the mullion (mullion spacing (ft.) times height (ft) times specified wind load (psf), divided by two) is more than 500 LBS., the optional Mullion Anchor must be used. Consult Application Engineering.

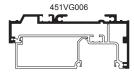
Mullion Anchor not used with Lightweight Receptor.

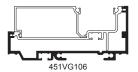


Trifab® VersaGlaze® 451/451T Framing System

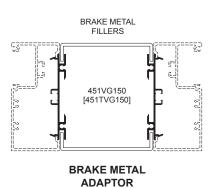


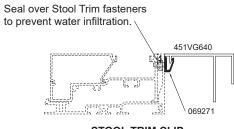
OPTIONAL LIGHTWEIGHT CAN RECEPTORS



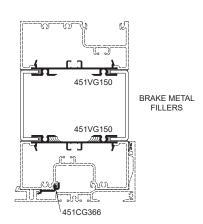


OPTIONAL UNEQUAL LEG **CAN RECEPTORS**





STOOL TRIM CLIP with HP FLASHING



BRAKE METAL ADAPTOR AT HORIZONTAL

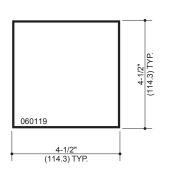




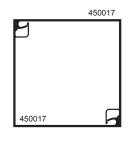


CORNERS (BACK)

Additional information and CAD details are available at www.kawneer.com



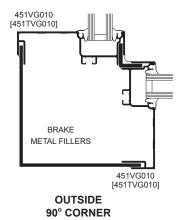
4-1/2" X 4-1/2" TUBE

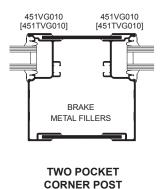


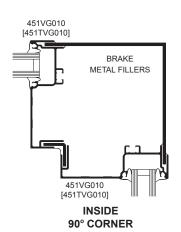
451VG015 [451TVG015] 450017

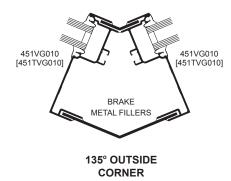
TWO PIECE NO POCKET CORNER

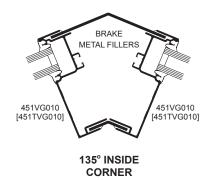
ONE POCKET CORNER











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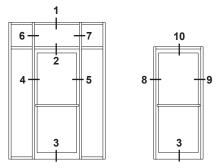
Additional information and CAD details are available at www.kawneer.com

TRIFAB® VersaGlaze® 451 FRAMING INCORPORATING KAWNEER "190" DOORS.

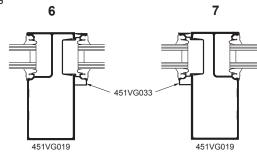
DOOR FRAMING NON-THERMAL ONLY

NOTE: OTHER TYPES OF KAWNEER DOORS MAY BE USED WITH THIS FRAMING

SEE ENTRANCE DETAILS FOR ADDITIONAL INFORMATION.



ELEVATIONS ARE NUMBER KEYED TO DETAILS



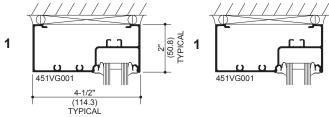
ENTRANCE FRAMING (BACK)

TRANSOM JAMBS

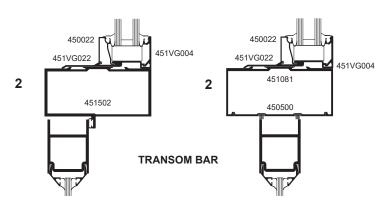
Transom area for both double or single acting doors with glass surround. Jambs above transom bar are routed out to accept glass holding insert.

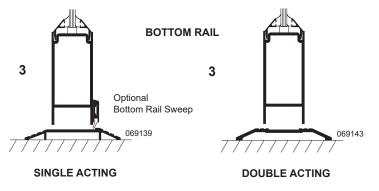
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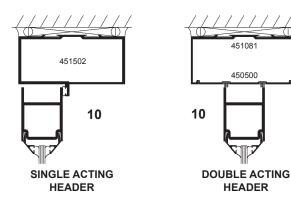
450500

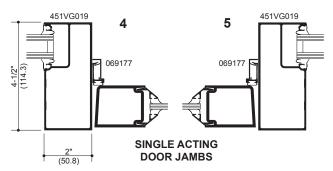


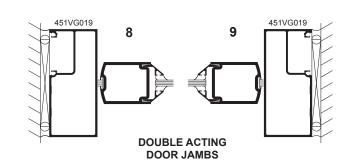
TRANSOM HEAD













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EC 97911-316 INDEX (MULTI-PLANE)

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(MULTI-PLANE - Inside Glazed - Stops Down)	60
(MULTI-PLANE - Outside Glazed - Stops Down)	61
10 construction of the October French on Book Continue	

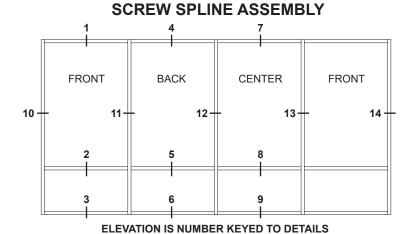
(See appropriate Center, Front or Back Section for Miscellaneous Details.)

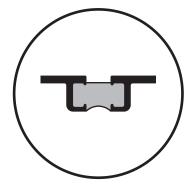


BASIC FRAMING DETAILS (MULTI-PLANE - Inside Glazed - Stops Down)

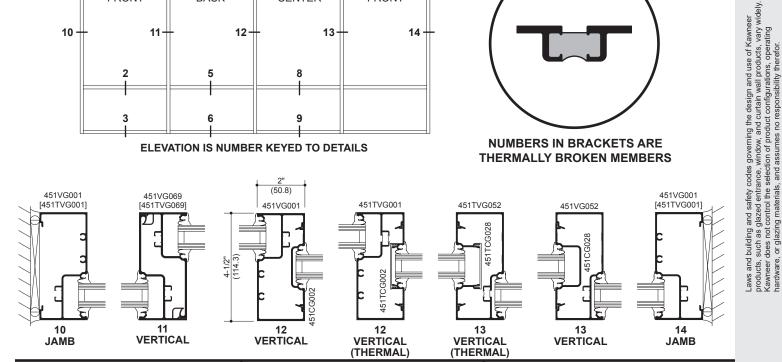
EC 97911-316

Additional information and CAD details are available at www.kawneer.com



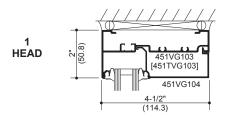


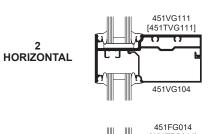
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

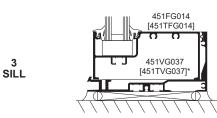




See Pages 32 thru 45 for all FRONT details.



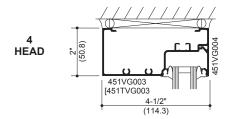


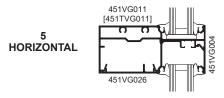


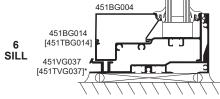
* HP Sill Flashing shown with optional gasket.

BACK

See Pages 48 thru 53 for all BACK details.



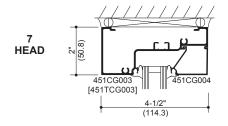


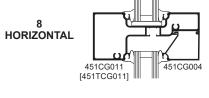


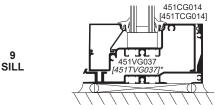
* HP Sill Flashing shown with optional gasket.

CENTER

See Pages 12 thru 30 for all CENTER details.







* HP Sill Flashing shown with optional gasket.

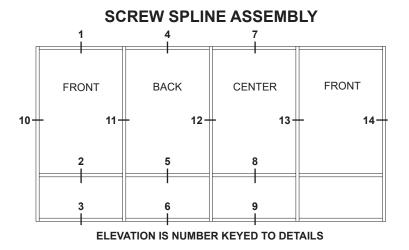
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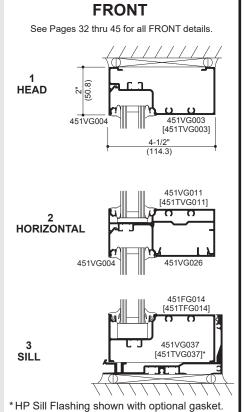
BASIC FRAMING DETAILS (MULTI-PLANE - Outside Glazed - Stops Down)

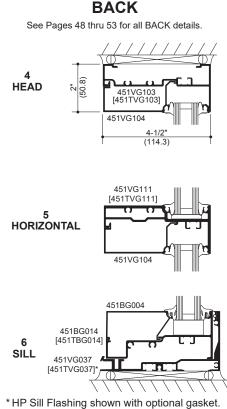
Additional information and CAD details are available at www.kawneer.com

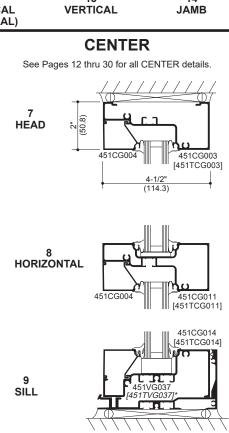


NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

(50.8) 451VG001 451VG001 451VG069 [451TVG069] 451VG001 451VG052 451TCG002 12 10 13 14 11 12 13 **VERTICAL JAMB VERTICAL VERTICAL VERTICAL VERTICAL JAMB** (THERMAL) (THERMAL)







* HP Sill Flashing shown with optional gasket.



ADMC040EN kawneer.com

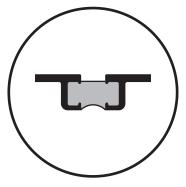
BASIC FRAMING DETAILS (MULTI-PLANE - Inside Glazed - Stops Down)

EC 97911-316

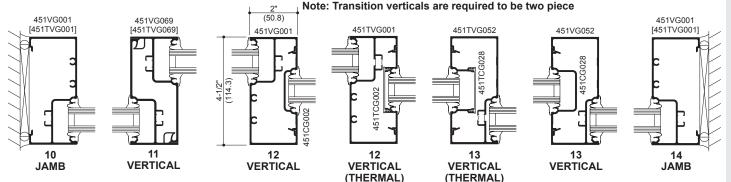
Additional information and CAD details are available at www.kawneer.com

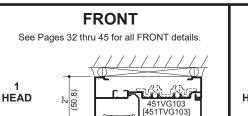
SHEAR BLOCK ASSEMBLY **FRONT FRONT BACK CENTER** 10 12 13 11 14

ELEVATION IS NUMBER KEYED TO DETAILS

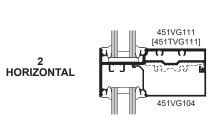


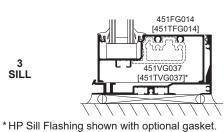
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS





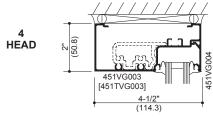
3

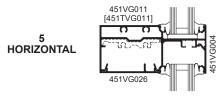


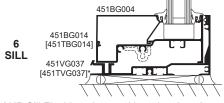


BACK

See Pages 48 thru 53 for all BACK details.



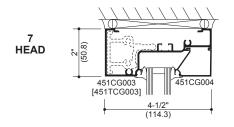


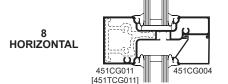


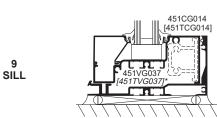
* HP Sill Flashing shown with optional gasket.

CENTER

See Pages 12 thru 30 for all CENTER details.







* HP Sill Flashing shown with optional gasket.

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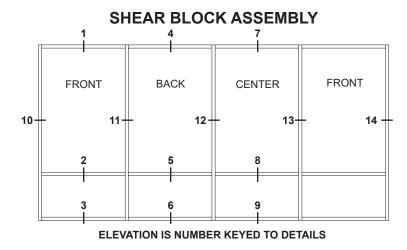
Laws and building and safety codes governing the design and use of Kawneer boddeds, such as glazed entrance, window, and cutain wall products, vary widely. Kawneer does not control the selection of product configurations, operating hardware, or glazing materials, and assumes no responsibility therefor.

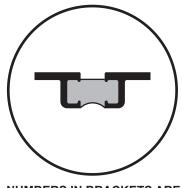
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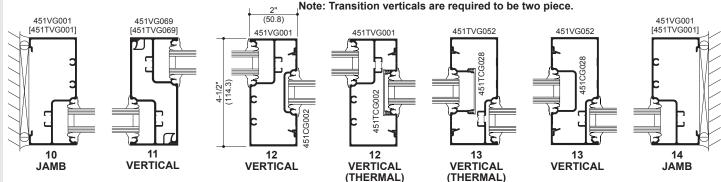
BASIC FRAMING DETAILS (MULTI-PLANE - Outside Glazed - Stops Down)

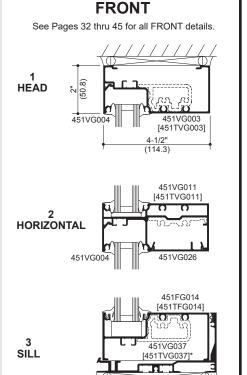
Additional information and CAD details are available at www.kawneer.com



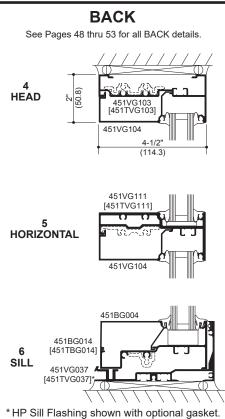


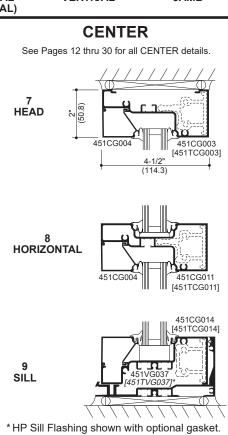
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS





* HP Sill Flashing shown with optional gasket.



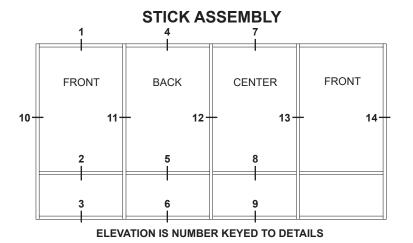


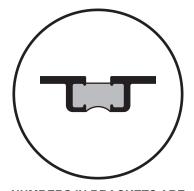


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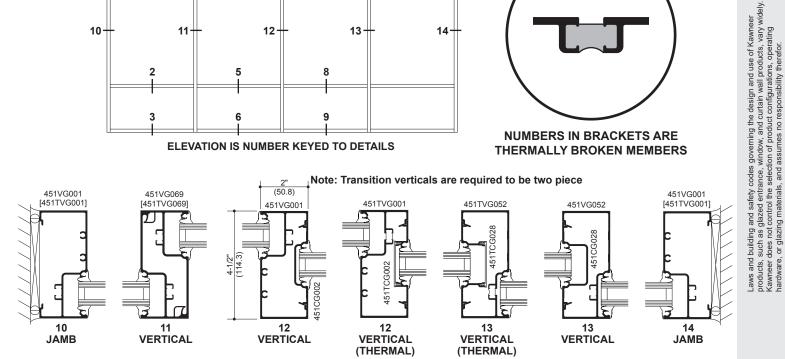
BASIC FRAMING DETAILS (MULTI-PLANE - Inside Glazed - Stops Down)

Additional information and CAD details are available at www.kawneer.com



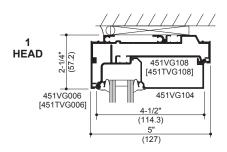


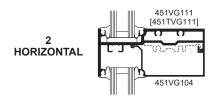
NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

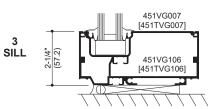




See Pages 32 thru 45 for all FRONT details.

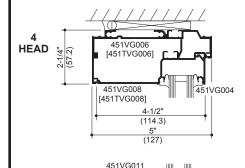


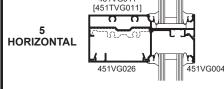


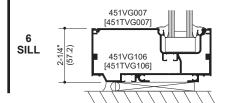


BACK

See Pages 48 thru 53 for all BACK details.

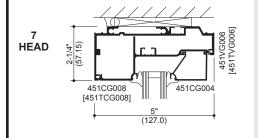


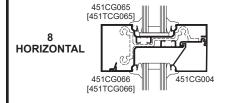


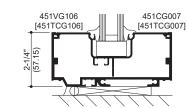


CENTER

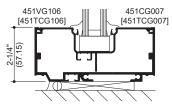
See Pages 12 thru 30 for all CENTER details.







SILL



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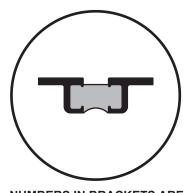
BASIC FRAMING DETAILS (MULTI-PLANE - Outside Glazed - Stops Down)

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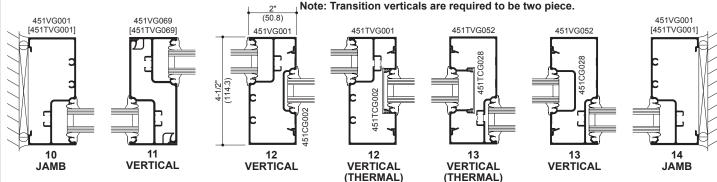
Additional information and CAD details are available at www.kawneer.com

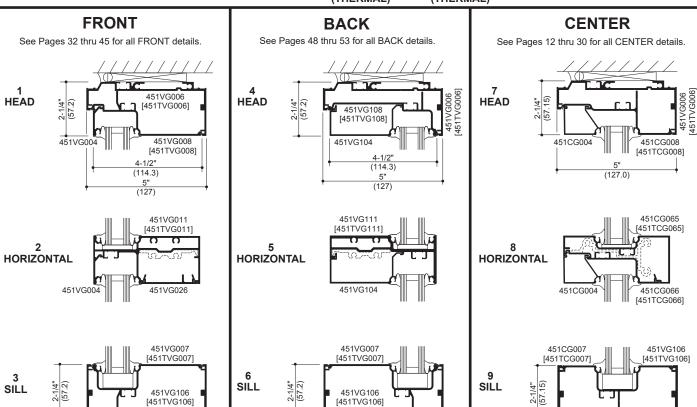
ELEVATION IS NUMBER KEYED TO DETAILS



NUMBERS IN BRACKETS ARE THERMALLY BROKEN MEMBERS

KAWNEER





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The following applications utilize Tremco Proglaze® ETA Connections as the transition assembly from the wall air/vapor barrier membrane to the storefront framing perimeter. Corners are sealed with either Proglaze® ETA 3D molded silicone corners or lapped Proglaze® ETA silicone sheet material. Transition assembly components are set in Tremco Spectrem® 1 silicone sealant. For complete installation instructions of Tremco Proglaze® ETA products, contact your local Tremco representative or visit www.tremcosealants.com.

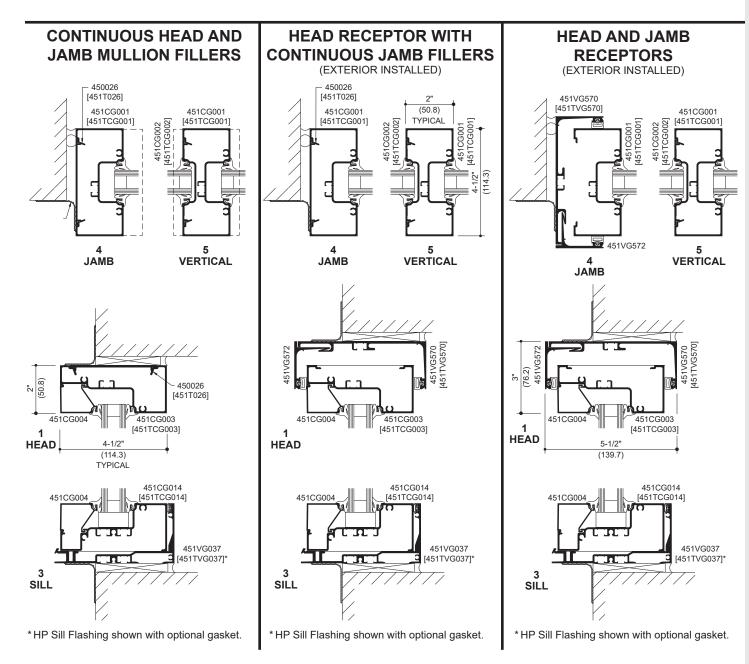
For integration of a silicone engineered transition assembly, the Trifab® storefront system must use continuous head and jamb mullion fillers, a head receptor with continuous jamb fillers or a head receptor with jamb receptors.

Reference air/vapor barrier installation instructions 451VG977EN. All storefront framing to be installed according to applicable Kawneer storefront system installation instructions, project specific plans, specifications and shop details.

Storefront installations require the sill to be structurally supported directly under the glass setting blocks and mullion locations, as well as where the sill is anchored to the substrate. Any projecting or cantilevered sill applications that are not supported must be reviewed by Kawneer application engineering.

Installer to independently confirm sealant compatibility and adhesion with all job specific storefront framing materials, silicone ETA sheet material and wall AVB material.

(451 center plane details shown, 451T and front/back/multi-plane similar.





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WIND LOAD CHARTS (CENTER)	
TF VG 451 (Non-Thermal)	65-69
TF VG 451T (Thermal)	70-74
WIND LOAD CHARTS (FRONT or BACK)	
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TF VG 451T with Steel (CENTER)	109-111



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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 (104 MPa), STEEL 30,000 psi (207 MPa). 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.

If the end reaction of the mullion [mullion spacing (ft.) times height (ft.) times specified wind load (psf) divided by two] is more than 500 lbs., the optional Heavyweight Compensating Receptor Face/Reinforcing Clip (Screw Spline/Shear Block systems) or Mullion Anchors (Stick system) must be used. Consult Application Engineering. (Mullion Anchor not used with Standard Receptor.)

DEADLOAD CHARTS

Horizontal or deadload limitations are based upon 1/8" (3.2), maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1" (25.4) thick insulating glass or 1/4" (6.4) thick glass supported on two setting blocks placed at the loading points shown.

NOTE: Charts are for THERMAL and NON-THERMAL members.

ithout prior notice when deemed Laws and building and safety codes governing the design and use of Kawneer products, such as 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.

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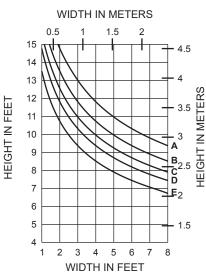
CHARTS

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WIND LOAD CHARTS (CENTER) Non-Thermal

WITH HORIZONTALS

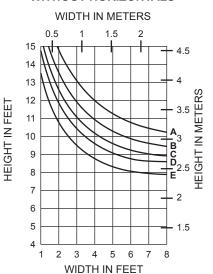


	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451CG001

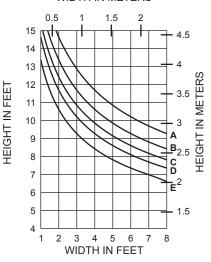
451CG002 I = 3.237 (134.73 x 104) $S = 1.431 (23.45 \times 10^3)$

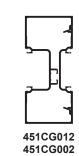
WITHOUT HORIZONTALS



WITH HORIZONTALS

WIDTH IN METERS

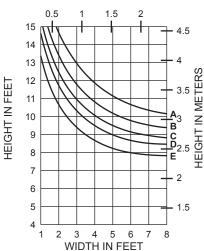




 $I = 3.137 (130.57 \times 10^4)$ $S = 1.384 (22.68 \times 10^3)$

WITHOUT HORIZONTALS

WIDTH IN METERS

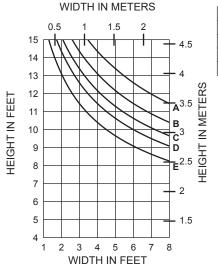




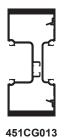
WIND LOAD CHARTS (CENTER) Non-Thermal

EC 97911-316

WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)

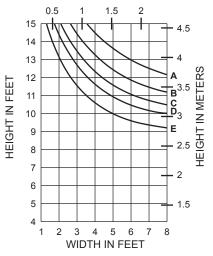


451CG002

 $I = 5.907 (245.86 \times 10^{4})$ $S = 2.615 (42.85 \times 10^3)$

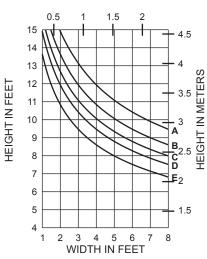
WITHOUT HORIZONTALS

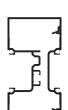




WITH HORIZONTALS

WIDTH IN METERS



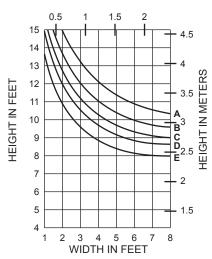


451CG112 451CG002

 $I = 3.346 (139.27 \times 10^4)$ $S = 1.474 (24.15 \times 10^3)$

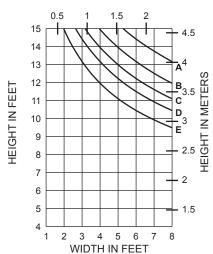
WITHOUT HORIZONTALS

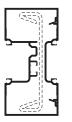
WIDTH IN METERS



WITH HORIZONTALS

WIDTH IN METERS





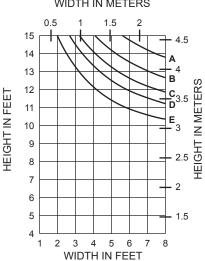
451CG112 451CG002 with 450110 STEEL

= 3.346 (139.27 x 10⁴) $\hat{S}_{\Delta} = 1.474 (24.15 \times 10^3)$

 $I_s = 1.935 (80.54 \times 10^4)$ $S_s = 0.938 (15.37 \times 10^3)$

WITHOUT HORIZONTALS

WIDTH IN METERS





ADMC040EN

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- 4.5

HEIGHT IN METERS

1.5

Trifab® VersaGlaze® 451 Framing System

EC 97911-316

WIND LOAD CHARTS (CENTER) Non-Thermal

15

14 13

12

11

10

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7

6

5

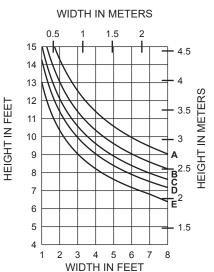
HEIGHT IN FEET

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

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WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451CG005 I = 2.907 (120.99 x 10⁴) S = 1.292 (21.17 x 10³)

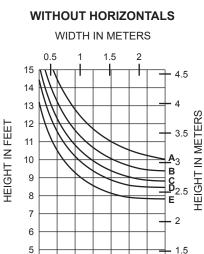
WIDTH IN FEET

3 4 5 6

WITHOUT HORIZONTALS

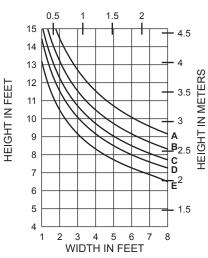
WIDTH IN METERS

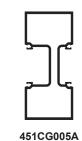
15



WITH HORIZONTALS



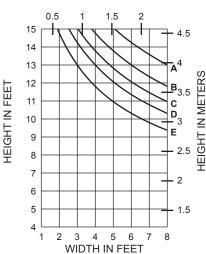


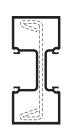


I = 3.016 (125.53 x 10⁴) S = 1.340 (21.96 x 10³)

WITH HORIZONTALS

WIDTH IN METERS





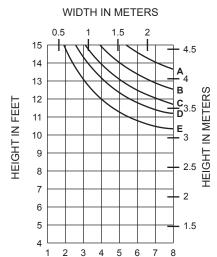
451CG005A with 450110 STEEL

$$\begin{split} I_A &= 3.016 \; (125.53 \times 10^4) \\ \dot{S}_A &= 1.340 \; (21.96 \times 10^3) \\ I_S &= 1.935 \; (80.54 \times 10^4) \\ \dot{S}_S &= 0.938 \; (15.37 \times 10^3) \end{split}$$

WITHOUT HORIZONTALS

WIDTH IN FEET

3 4 5 6

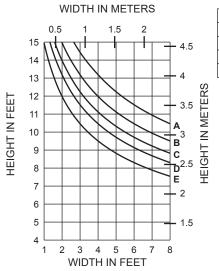


WIDTH IN FEET

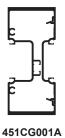


ADMC040EN

WITH HORIZONTALS

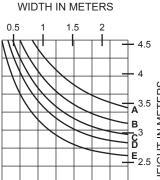


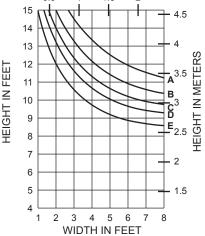
	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)



451CG002 $I = 4.507 (187.59 \times 10^4)$ $S = 1.993 (32.66 \times 10^3)$

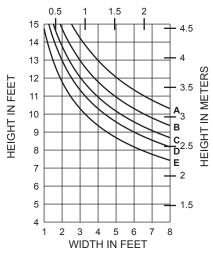
WITHOUT HORIZONTALS

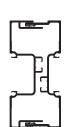




WITH HORIZONTALS

WIDTH IN METERS



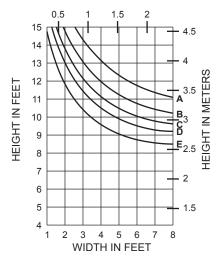


451CG010 451CG540

 $I = 4.301 (179.02 \times 10^{4})$ $S = 1.886 (30.91 \times 10^3)$

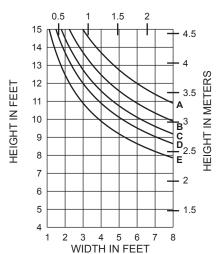
WITHOUT HORIZONTALS

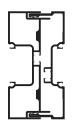
WIDTH IN METERS



WITH HORIZONTALS

WIDTH IN METERS



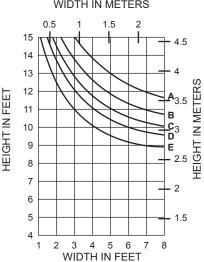


451CG010A 451CG540

 $I = 5.083 (211.57 \times 10^4)$ $S = 2.259 (37.02 \times 10^3)$

WITHOUT HORIZONTALS

WIDTH IN METERS



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ADMC040EN

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Trifab® VersaGlaze® 451T Framing System

EC 97911-316

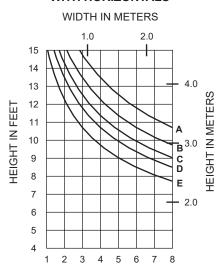
WIND LOAD CHARTS (CENTER) Non-Thermal

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

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WITH HORIZONTALS



WIDTH IN FEET

WITH HORIZONTALS

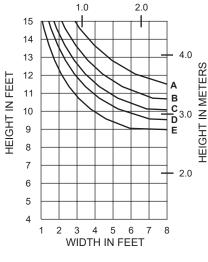
WIDTH IN METERS

	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451CG081 / 451CG082

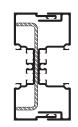
I = 4.829 (201.00 x 10⁴) S = 2.146 (35.17 x 10³)

WITHOUT HORIZONTALS



WITHOUT HORIZONTALS
WIDTH IN METERS

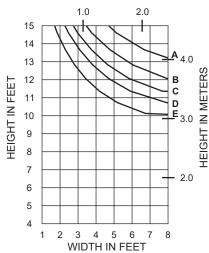
HEIGHT IN FEET	15 14 13 12 11 10 9 8 7 6			1.0		2.0		- 4.0 A B C D 3.0 E	HEIGHT IN METERS
	7						_	- 2.0	I
	6								
	5								
	4								
1 2 3 4 5 6 7 8 WIDTH IN FEET									



451CG081 / 451CG082 with 400110 STEEL

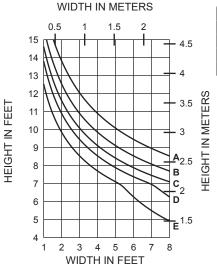
WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WIDTH IN METERS

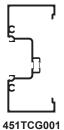




WITH HORIZONTALS

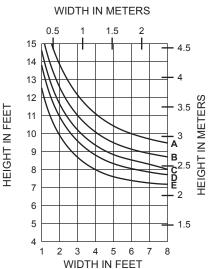


	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)



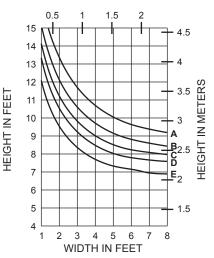
WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS

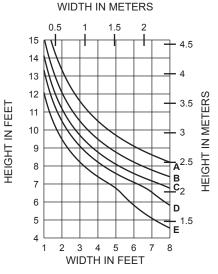


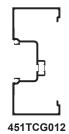
WITHOUT HORIZONTALS





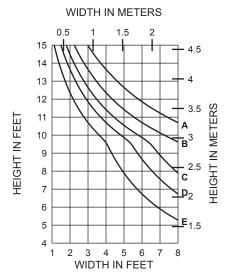
WITH HORIZONTALS

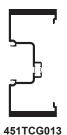




WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

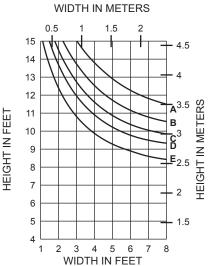
WITH HORIZONTALS





WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS



JEIGHT IN FEET

codes governing the design and use of Kawneer rance, window, and curtain wall products, vary widely, relection of product configurations, operating s, and assumes no responsibility therefor.

HEIGHT IN METERS

B_{2.5}

2

1.5

D E

Laws and building and safety codes products, such as glazed entrance, 'Kawneer does not control the select hardware, or glazing materials, and Kawneer reserves the right to change configuration without prior necessary for product improvement.

codes governing the design and use of Kawneer arnce, window, and curtain well products, vary widely, selection of product configurations, operating s, and assumes no responsibility therefor.

WIND LOAD CHARTS (CENTER) Thermal

15

14 13

12

11

10

9

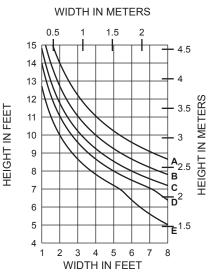
8

7

6 5

HEIGHT IN FEET

WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451TCG112

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

3 4 5 6 WIDTH IN FEET

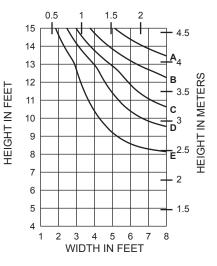
WITHOUT HORIZONTALS

WIDTH IN METERS

1.5

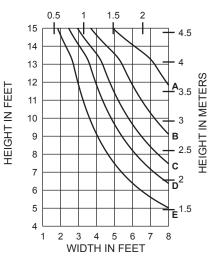






WITH HORIZONTALS

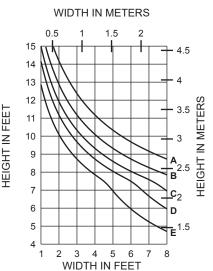




451TCG112 with 450110 STEEL

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

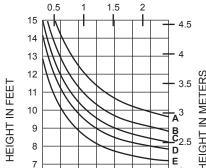
WITH HORIZONTALS

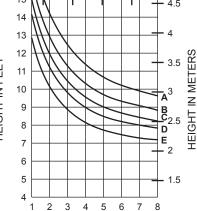


451TCG005

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS WIDTH IN METERS



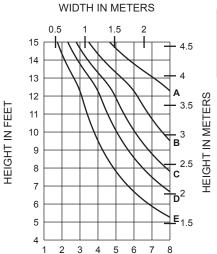


WIDTH IN FEET



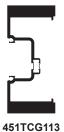
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WITH HORIZONTALS



WIDTH IN FEET

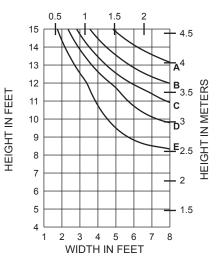
	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)



WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS

WIDTH IN METERS



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

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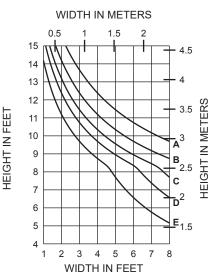
WIND LOAD CHARTS (CENTER) Thermal

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

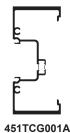
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WITH HORIZONTALS

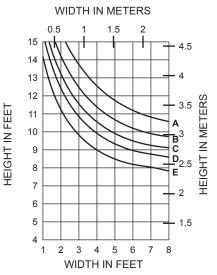


	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)

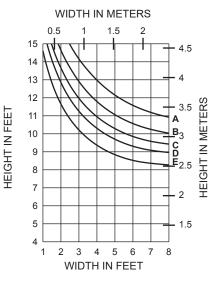


WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

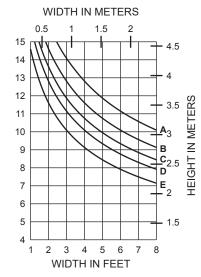
WITHOUT HORIZONTALS



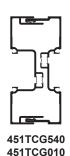
WITHOUT HORIZONTALS



WITH HORIZONTALS

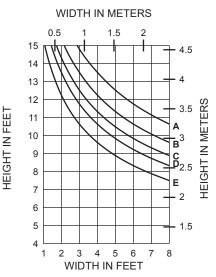


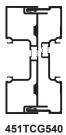
HEIGHT IN FEET



WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITH HORIZONTALS

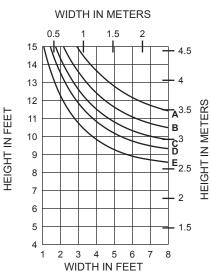




451TCG540 451TCG010A

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

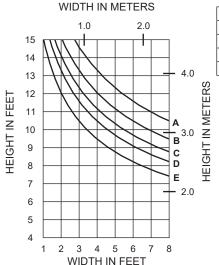
WITHOUT HORIZONTALS



KAWNEER

kawneer.com ADMC040EN

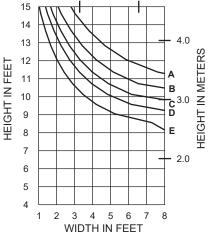
WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451TCG081 / 451TCG082

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505



WITHOUT HORIZONTALS

WIDTH IN METERS

1.0 2.0 15 14 4.0 13 HEIGHT IN METERS 12 HEIGHT IN FEET 11 С 10 ъ 9 Ε 8 2.0 6 5

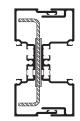
4 5

WIDTH IN FEET

6

WITH HORIZONTALS

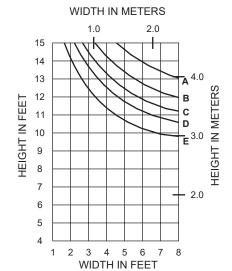
WIDTH IN METERS



451TCG081 / 451TCG082 with 400110 STEEL

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505





KAWNEER

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EC 97911-316

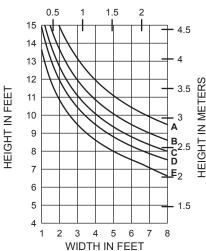
WIND LOAD CHARTS (FRONT/BACK) Non-Thermal

codes governing the design and use of Kawneer arnce, window, and curtain well products, vary widely, selection of product configurations, operating s, and assumes no responsibility therefor. Laws and building and sarety couces a products, such as glazed entrance, will knowneer does not control the selectic hardware, or glazing materials, and a

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WITH HORIZONTALS WIDTH IN METERS

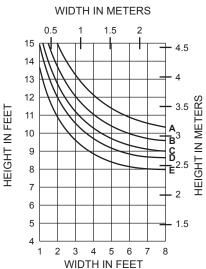


	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)

451VG012 451VG026

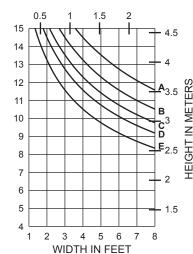
I = 3.346 (139.27 x 104) $S = 1.447 (23.71 \times 10^3)$

WITHOUT HORIZONTALS



WITH HORIZONTALS

WIDTH IN METERS



HEIGHT IN FEET

HEIGHT IN FEET

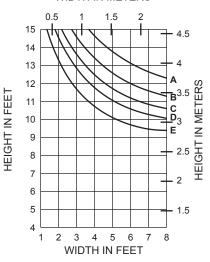


451VG012 451VG026 with 1" x 2-1/4" STEEL BAR

 $I_A = 3.346 (139.27 \times 10^4)$ $S_A = 1.447 (23.71 \times 10^3)$ $I_s = 0.949 (39.50 \times 10^4)$ $S_s = 0.844 (13.83 \times 10^3)$

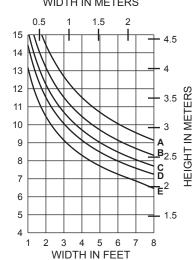
WITHOUT HORIZONTALS

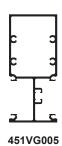




WITH HORIZONTALS

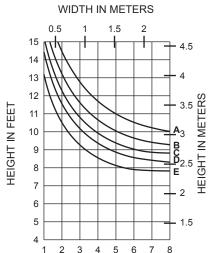
WIDTH IN METERS

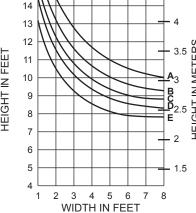




 $I = 3.001 (124.91 \times 10^4)$ $S = 1.323 (21.68 \times 10^3)$

WITHOUT HORIZONTALS

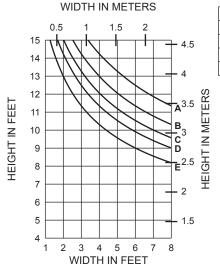






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WITH HORIZONTALS



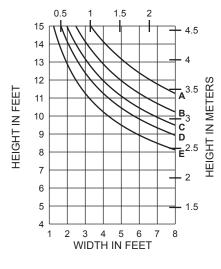
	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451VG005 with 1" x 2-1/4" STEEL BAR

$I_A = 3.001 (124.91 \times 10^4)$ $S_A = 1.323 (21.68 \times 10^3)$
$I_S = 0.949 (39.50 \times 10^4)$ $S_S = 0.844 (13.83 \times 10^3)$

WITH HORIZONTALS

WIDTH IN METERS

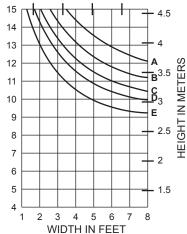




 $I = 5.604 (233.25 \times 10^4)$ $S = 2.397 (39.28 \times 10^3)$

451VG014

HEIGHT IN FEET

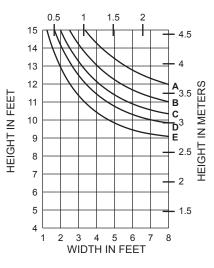


WITHOUT HORIZONTALS

WIDTH IN METERS

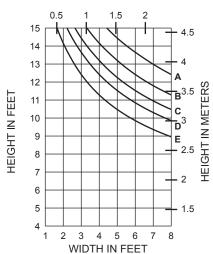
WITHOUT HORIZONTALS

WIDTH IN METERS



WITH HORIZONTALS

WIDTH IN METERS





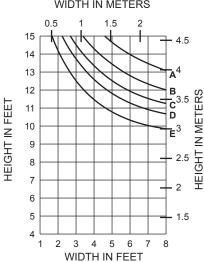
451VG014 with 1" x 2" STEEL BAR

 $I = 5.604 (233.25 \times 10^4)$ $S = 2.397 (39.28 \times 10^3)$

 $I_s = 0.667 (27.26 \times 10^4)$ $S_s = 0.667 (10.93 \times 10^3)$

WITHOUT HORIZONTALS

WIDTH IN METERS



KAWNEER

ADMC040EN

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

Trifab® VersaGlaze® 451 Framing System

EC 97911-316

WIND LOAD CHARTS (FRONT/BACK) Non-Thermal

codes governing the design and use of Kawneer arnce, window, and curtain well products, vary widely, selection of product configurations, operating s, and assumes no responsibility therefor. Laws and building and sarety couces a products, such as glazed entrance, will knowneer does not control the selectic hardware, or glazing materials, and a

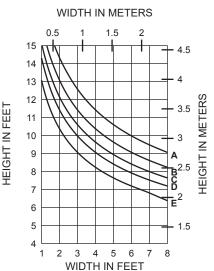
Kawneer reserves the right to change configuration without prior necessary for product improvement.

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HEIGHT IN FEET

2 3 4 5 6 7

WITH HORIZONTALS

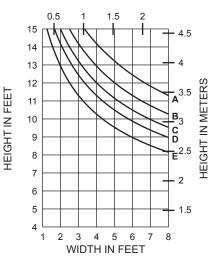


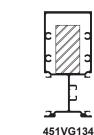
	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)

451VG134 $I = 2.930 (121.96 \times 10^{4})$ $S = 1.290 (21.13 \times 10^3)$

WITH HORIZONTALS

WIDTH IN METERS





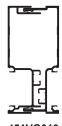
with 1" x 2-1/4" STEEL BAR

 $= 2.930 (121.96 \times 10^{4})$ $I_A = 2.930 \text{ (121.00 \times 103)}$ $S_A = 1.290 \text{ (21.13 \times 103)}$ $I_s = 0.949 (39.50 \times 10^4)$ $S_s = 0.844 (13.83 \times 10^3)$

WITH HORIZONTALS

WIDTH IN METERS 15 13 12 IN METERS 3.5 11 10 9 HEIGHT 8 7 6 5

WIDTH IN FEET

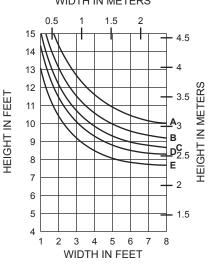


451VG010 451VG540

 $I = 4.418 (183.89 \times 10^4)$ $S = 1.798 (29.46 \times 10^3)$

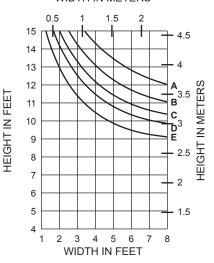
WITHOUT HORIZONTALS



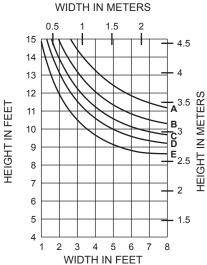


WITHOUT HORIZONTALS

WIDTH IN METERS



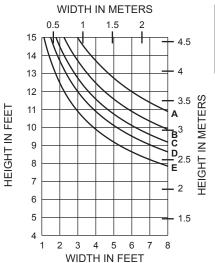
WITHOUT HORIZONTALS



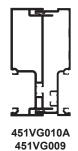


ADMC040EN kawneer.com

WITH HORIZONTALS

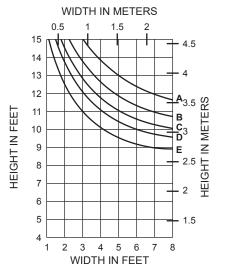


	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)



I = 5.076 (211.27 x 10⁴) S = 2.066 (33.86 x 10³)

WITHOUT HORIZONTALS



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

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HEIGHT IN METERS

В С Р_{2.5}

2

1.5

Ε

HEIGHT IN FEET

Trifab® VersaGlaze® 451T Framing System

EC 97911-316

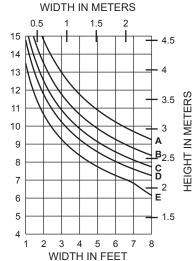
WIND LOAD CHARTS (FRONT/BACK) Thermal

codes governing the design and use of Kawneer arnce, window, and curtain well products, vary widely, selection of product configurations, operating s, and assumes no responsibility therefor. I building and safety codes such as glazed entrance, does not control the select

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

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WITH HORIZONTALS



Allowable Stress LRFD Ultimate **Design Load Design Load** A = 15 PSF (720) 25 PSF (1200) B = 20 PSF (960) 33 PSF (1580) 25 PSF (1200) C= 42 PSF (2000) 50 PSF (2400) D = 30 PSF (1440) E = 40 PSF (1920) 67 PSF (3200)



WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

451VG026

WITHOUT HORIZONTALS

WIDTH IN FEET

3 4 5 6

WITHOUT HORIZONTALS

WIDTH IN METERS

1.5

0.5

15

14

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10

8

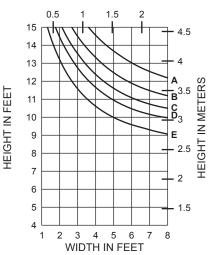
7

6

5

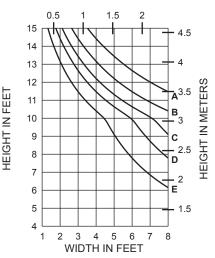
HEIGHT IN FEET





WITH HORIZONTALS



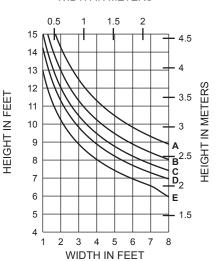


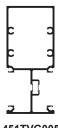
451TVG012 451VG026 with 1" x 2-1/4" STEEL BAR

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITH HORIZONTALS

WIDTH IN METERS



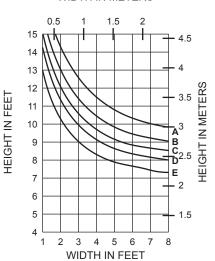


WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

ADMC040EN

WITHOUT HORIZONTALS

WIDTH IN METERS







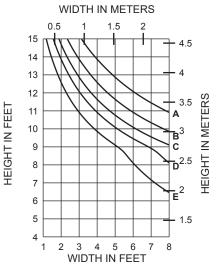
kawneer.com

HEIGHT IN METERS

Е

2

WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E =	40 PSF (1920)	67 PSF (3200)



WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS

WIDTH IN FEET

5 6

WITHOUT HORIZONTALS

WIDTH IN METERS

15

14

13

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11

10

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6

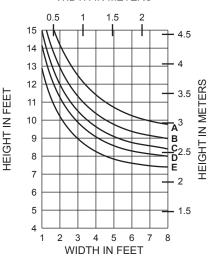
5

HEIGHT IN FEET

WIDTH IN METERS

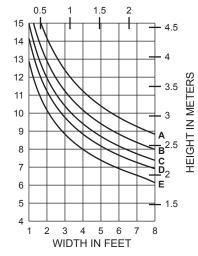
4

3

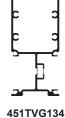


WITH HORIZONTALS



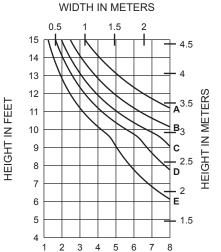


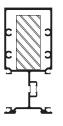
HEIGHT IN FEET



WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITH HORIZONTALS



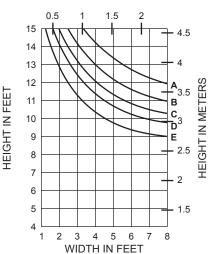


451TVG134 with 1" x 2-1/4" STEEL BAR

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS





KAWNEER

WIDTH IN FEET

ADMC040EN

kawneer.com

Laws and building and safety codes governing the design and use of Kawneer products, such as 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.

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Trifab® VersaGlaze® 451T Framing System

EC 97911-316

WIND LOAD CHARTS (FRONT/BACK) Thermal

HEIGHT IN FEET

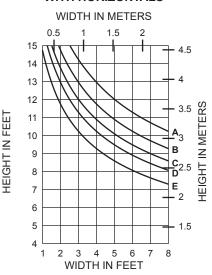
HEIGHT IN FEET

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

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WITH HORIZONTALS



WITH HORIZONTALS

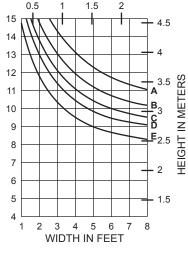
WIDTH IN METERS

	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

451TVG540 451TVG010

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

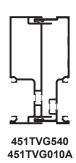
WITHOUT HORIZONTALS



WITHOUT HORIZONTALS

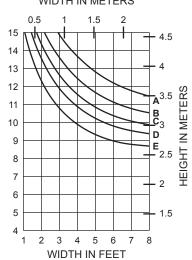
WIDTH IN METERS

HEIGHT IN FEET



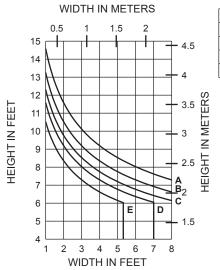
WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WIDTH IN METERS



KAWNEER

WITH HORIZONTALS

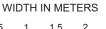


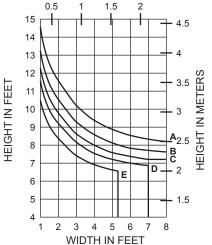
Allowable Stress	LRFD Ultimate
Design Load	Design Load
15 PSF (720)	25 PSF (1200)
20 PSF (960)	33 PSF (1580)
25 PSF (1200)	42 PSF (2000)
30 PSF (1440)	50 PSF (2400)
40 PSF (1920)	67 PSF (3200)
	Design Load 15 PSF (720) 20 PSF (960) 25 PSF (1200) 30 PSF (1440)

451SSG005

 $I = 1.527 (63.55 \times 10^4)$ $S = 1.057 (17.32 \times 10^3)$

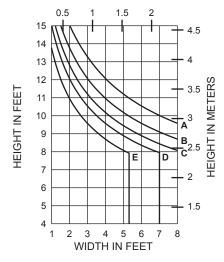
WITHOUT HORIZONTALS





WITH HORIZONTALS

WIDTH IN METERS



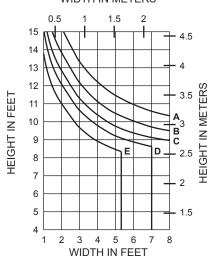


451SSG005 with 1" x 2" STEEL BAR

$$\begin{split} I_A &= 1.527 \ (63.55 \times 10^4) \\ S_A &= 1.057 \ (17.32 \times 10^3) \\ I_S &= 0.667 \ (27.76 \times 10^4) \\ S_S &= 0.667 \ (10.93 \times 10^3) \end{split}$$

WITHOUT HORIZONTALS

WIDTH IN METERS





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

Trifab® VersaGlaze® 451 Framing System

EC 97911-316

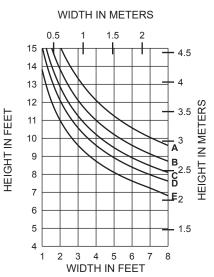
WIND LOAD CHARTS (MULTI-PLANE) Non-Thermal

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

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WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

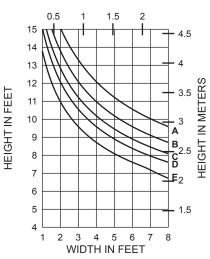
451VG001

451CG002

 $I = 3.485 (145.05 \times 10^4)$ $S = 1.468 (24.06 \times 10^3)$

WITH HORIZONTALS

WIDTH IN METERS



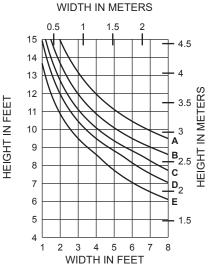


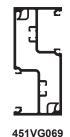
 $S = 1.431 (23.45 \times 10^3)$

451VG052 451CG028

$I = 3.470 (144.43 \times 10^4)$

WITH HORIZONTALS



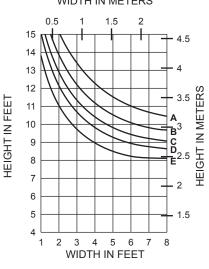


451VG069

 $I = 3.362 (139.94 \times 10^4)$ $S = 1.181 (19.35 \times 10^3)$

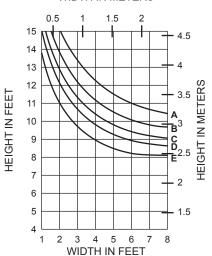
WITHOUT HORIZONTALS



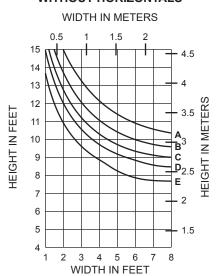


WITHOUT HORIZONTALS

WIDTH IN METERS



WITHOUT HORIZONTALS





ADMC040EN kawneer.com

15

14

13

12

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9

7 6

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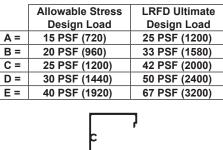
HEIGHT IN FEET

HEIGHT IN FEET

HEIGHT IN METERS

mate WITHOUT HORIZONTALS

HEIGHT IN FEET

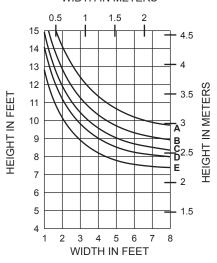




WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS

WIDTH IN METERS



WITH HORIZONTALS

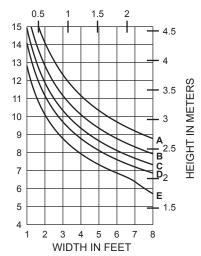
WIDTH IN FEET

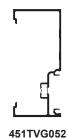
4 5 6

WITH HORIZONTALS

WIDTH IN METERS



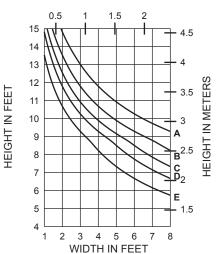


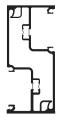


WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITH HORIZONTALS

WIDTH IN METERS



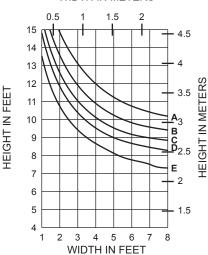


451TVG069 451TVG069

WIND LOAD CHARTS ARE BASED ON COMPOSITE PROPERTIES WHICH ARE CALCULATED IN ACCORDANCE WITH AAMA TIR-A8 AND AAMA 505

WITHOUT HORIZONTALS

WIDTH IN METERS



KAWNEER

ADMC040EN

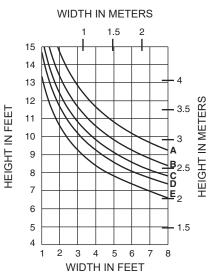
kawneer.com

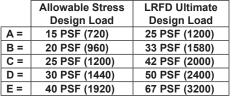
© 2018, Kawneer Company, Inc.

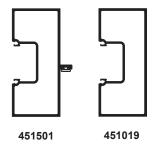
itely codes governing the design and use of Kawneer entrance, window, and curtain wall products, vary widely. I the selection of product configurations, operating arials, and assumes no responsibility therefor.

WIND LOAD CHARTS (ENTRANCES) Non-Thermal

WITH HORIZONTALS

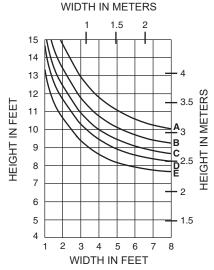


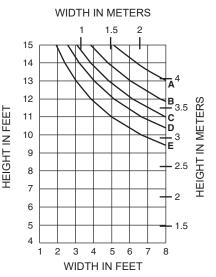




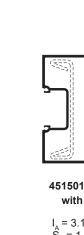
 $I = 3.116 (129.7 \times 10^4)$ $S = 1.385 (22.7 \times 10^3)$

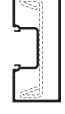
WITHOUT HORIZONTALS





WITH HORIZONTALS





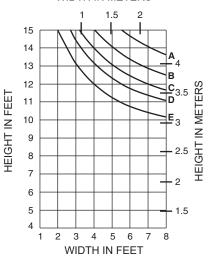
451019

with 450110 STEEL = 3.116 (129.70 x 104)

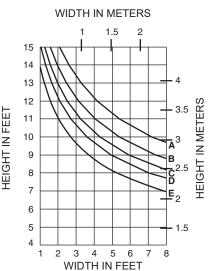
 $\hat{S}_A = 1.385 (22.70 \times 10^3)$ $I_s = 1.935 (80.54 \times 10^4)$ $S_s = 0.938 (15.37 \times 10^3)$

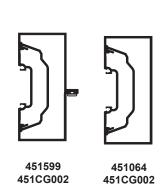
WITHOUT HORIZONTALS





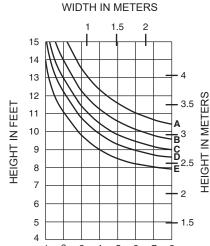
WITH HORIZONTALS

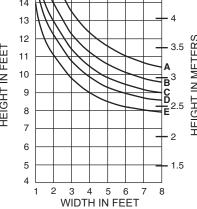




I = 3.586 (149.26 x 104) $S = 1.594 (26.12 \times 10^3)$

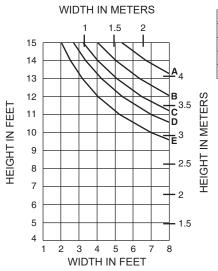
WITHOUT HORIZONTALS







WITH HORIZONTALS



	Allowable Stress	LRFD Ultimate
	Design Load	Design Load
A =	15 PSF (720)	25 PSF (1200)
B =	20 PSF (960)	33 PSF (1580)
C =	25 PSF (1200)	42 PSF (2000)
D =	30 PSF (1440)	50 PSF (2400)
E=	40 PSF (1920)	67 PSF (3200)

40 PSF (1920)

451599

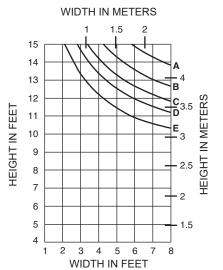
451064 451CG002

451CG002 451CG0 with 450110 STEEL

I = 3.565 (148.39 x 10⁴) S = 1.622 (26.58 x 10³)

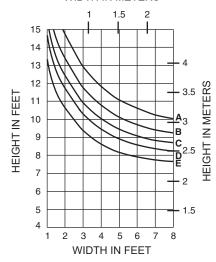
 $I_s = 1.935 (80.54 \times 10^4)$ $S_s = 0.938 (15.37 \times 10^3)$

WITHOUT HORIZONTALS



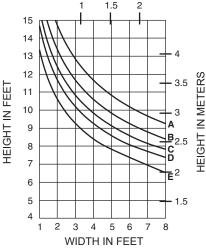
WITHOUT HORIZONTALS

WIDTH IN METERS



WITH HORIZONTALS



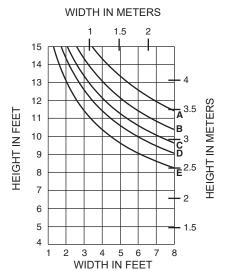




451VG019

 $I = 3.124 (130.03 \times 10^4)$ $S = 1.333 (21.84 \times 10^3)$

WITH HORIZONTALS





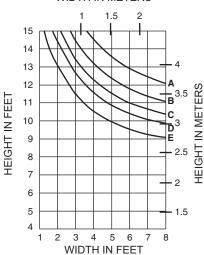
451VG019 with 1" x 2-1/4" STEEL BAR

 $I_A = 3.124 (130.03 \times 10^4)$ $S_A = 1.333 (21.84 \times 10^3)$

 $I_s = 0.949 (39.50 \times 10^4)$ $S_s = 0.844 (13.83 \times 10^3)$

WITHOUT HORIZONTALS

WIDTH IN METERS



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Trifab® VersaGlaze® 451/451T Framing System **DEADLOAD CHARTS**

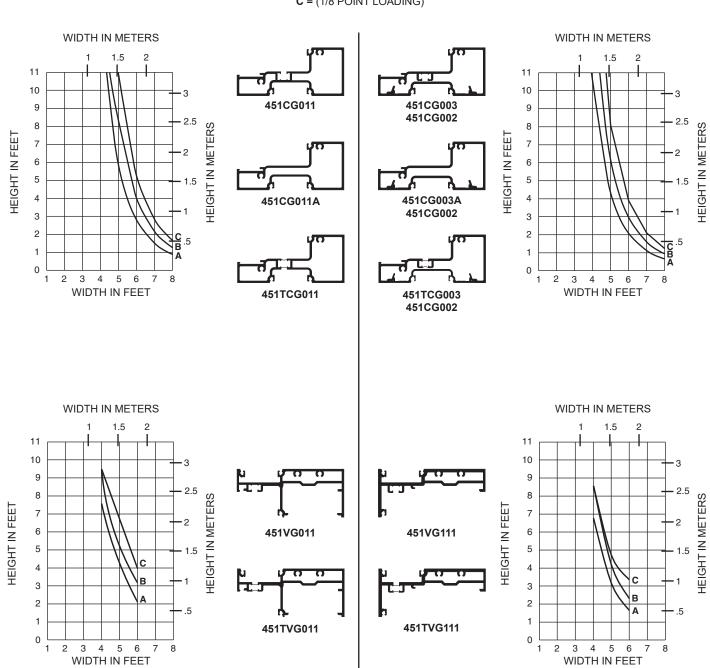
Horizontal or deadload limitations are based upon 1/8" (3.2) maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1" (25.4) thick insulating glass supported on two setting blocks at the loading points shown.

NOTE: Charts are for THERMAL and NON-THERMAL members.

A = (1/4 POINT LOADING)

B = (1/6 POINT LOADING)

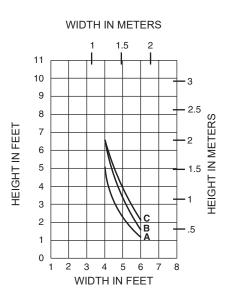
C = (1/8 POINT LOADING)



Horizontal or deadload limitations are based upon 1/8" (3.2) maximum allowable deflection at the center of an intermediate horizontal member. The accompanying charts are calculated for 1" (25.4) thick insulating glass supported on two setting blocks at the loading points shown.

NOTE: Charts are for THERMAL and NON-THERMAL members.

DEADLOAD CHARTS

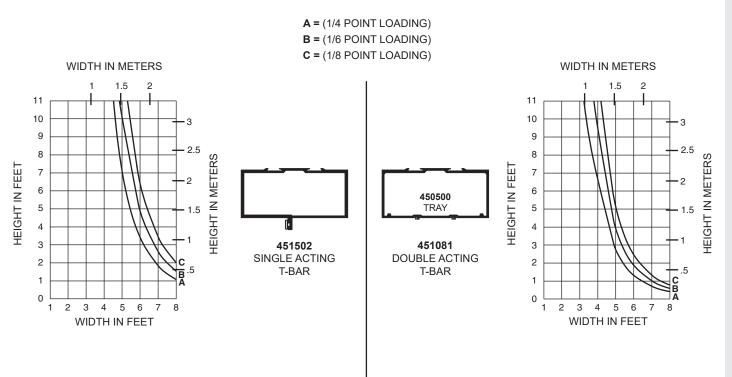


A = (1/4 POINT LOADING) B = (1/6 POINT LOADING) C = (1/8 POINT LOADING)





Height limitations for transom glass over a doorway are based upon a 1/16" (1.6) maximum allowable deflection at the center of a transom bar. The accompanying charts are calculated for 1" (25.4) thick insulating glass supported on two setting blocks placed at the loading points shown.



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

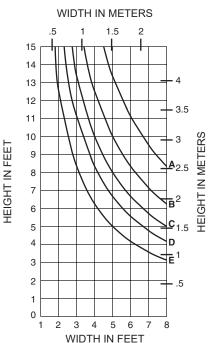
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END REACTION CHARTS

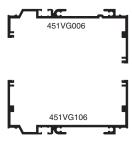
For each application, end reactions MUST be checked. These charts are used to verify that the end reactions at the head and sill receptors are 500 lbs. (2224N) or less and will meet the specified wind load.

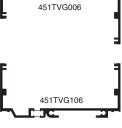
A = 15 PSF (720 P B = 20 PSF (960 P

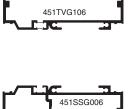
WITH HORIZONTALS



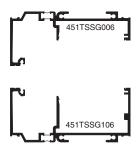






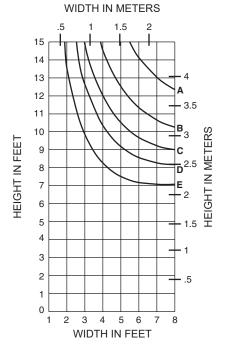






500lbs. Max. End Reaction

WITHOUT HORIZONTALS

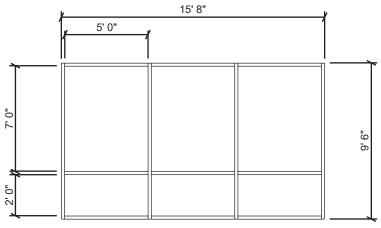




THERMAL CHARTS

EC 97911-316

Generic Project Specific U-factor Example Calculation (Percent of Glass will vary on specific products depending on sitelines)



Example Glass U-factor = 0.42 Btu/hr·ft².°F

Total Daylight Opening = $3(5' \times 7') + 3(5' \times 2') = 135ft^2$

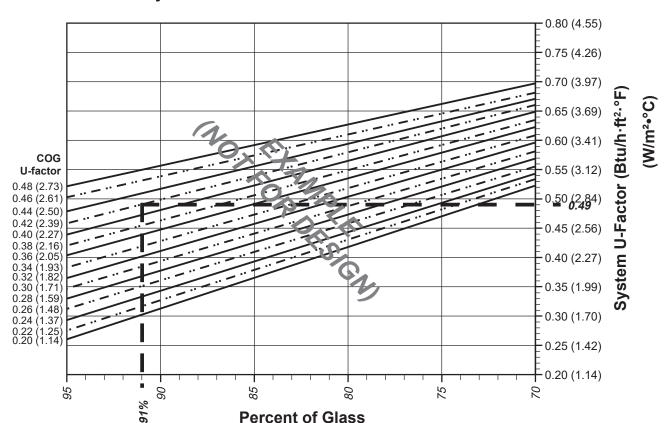
Total Projected Area = (Total Daylight Opening + Total Area of Framing System)

= 15' 8" x 9' 6" = 148.83ft²

Percent of Glass = (Total Daylight Opening ÷ Total Projected Area)

 $= (135 \div 148.83)100 = 91\%$

System U-factor vs Percent of Glass Area



Based on 91% glass and center of glass (COG) U-factor of 0.42 System U-factor is equal to 0.49 Btu/hr x ft² x °F



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EC 97911-316 THERMAL CHARTS

Trifab® VersaGlaze® 451 (CENTER – Non-Thermal)

Aluminum Glazing Spacer

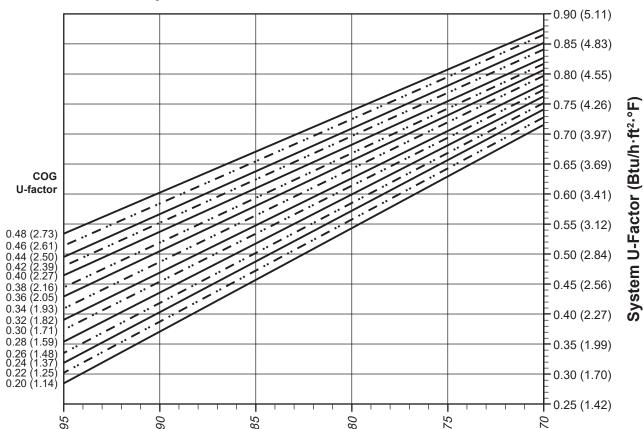
Note:

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

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts: For glass values not listed, linear interpolation is permitted. Glass Properties are based on center of glass values and are obtained from your glass supplier.



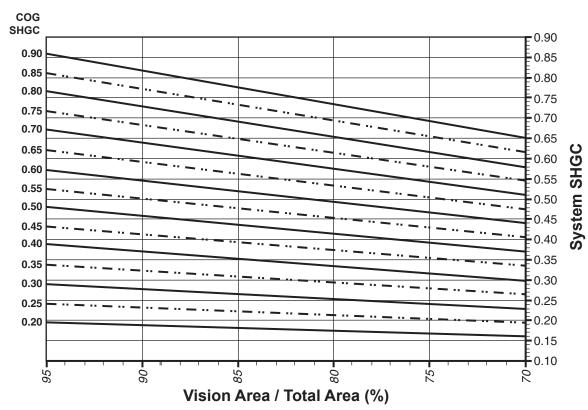
Trifab® VersaGlaze® 451 (CENTER – Non-Thermal)

Aluminum Glazing Spacer

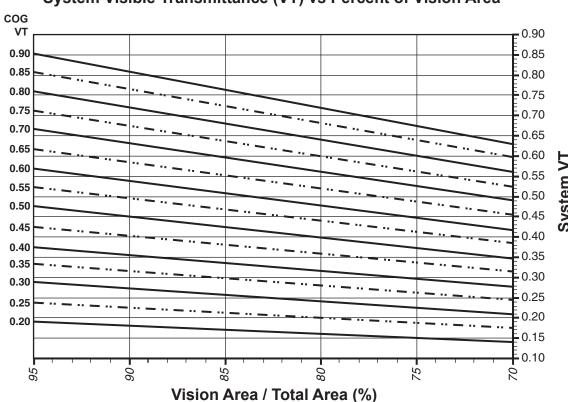
Charts are generated per AAMA 507.

THERMAL CHARTS

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



System Visible Transmittance (VT) vs Percent of Vision Area





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THERMAL PERFORMANCE MATRIX

EC 97911-316

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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.63
0.46	0.61
0.44	0.60
0.42	0.58
0.40	0.57
0.38	0.55
0.36	0.53
0.34	0.52
0.32	0.50
0.30	0.49
0.28	0.47
0.26	0.45
0.24	0.44
0.22	0.42
0.20	0.41

Trifab® VersaGlaze® 451 (CENTER - Non-Thermal)

Aluminum Glazing Spacer

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 Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.90	0.80
0.85	0.76
0.80	0.71
0.75	0.67
0.70	0.63
0.65	0.58
0.60	0.64
0.55	0.49
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18

Visible Transmittance 2

Glass VT ³	Overall VT 4
0.90	0.79
0.85	0.75
0.80	0.71
0.75	0.66
0.70	0.62
0.65	0.57
0.60	0.53
0.55	0.49
0.50	0.44
0.45	0.40
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.18



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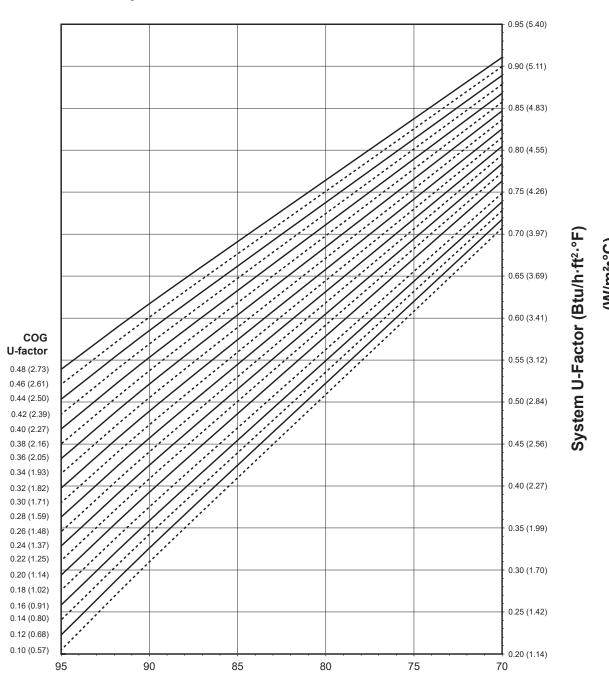
Trifab® VersaGlaze® 451 Pre-Glazed (CENTER – Non-Thermal)

Aluminum Glazing Spacer

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

THERMAL CHARTS

System U-factor vs Percent of Glass Area



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

Notes for System U-factor, SHGC, and VT charts: For glass values not listed, linear interpolation is permitted.

Glass Properties are based on center of glass values and are obtained from your glass supplier.



notice when deemed Laws and building and safety products, such as glazed entit Kawneer does not control the Kawneer does not control the

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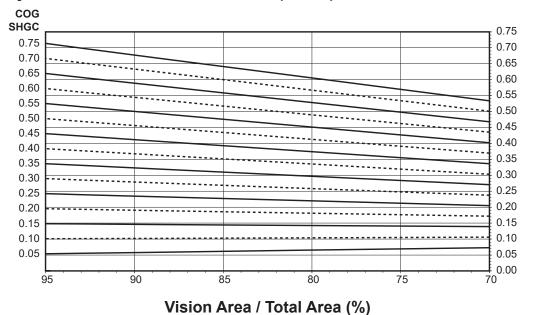
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EC 97911-316 THERMAL CHARTS

Trifab® VersaGlaze® 451 Pre-Glazed (CENTER – Non-Thermal)

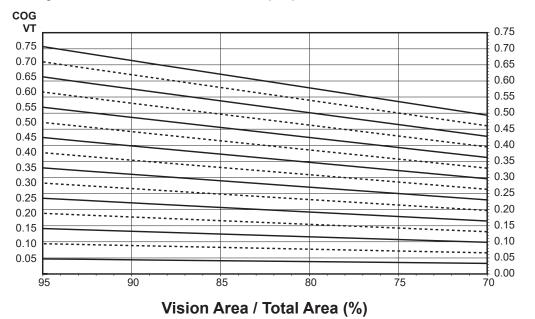
Aluminum Glazing Spacer

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.63
0.46	0.62
0.44	0.60
0.42	0.59
0.40	0.57
0.38	0.56
0.36	0.54
0.34	0.52
0.32	0.51
0.30	0.49
0.28	0.48
0.26	0.46
0.24	0.45
0.22	0.43
0.20	0.41
0.18	0.40
0.16	0.38
0.14	0.36
0.12	0.35
0.10	0.33

Trifab® VersaGlaze® 451 **Pre-Glazed** (CENTER - Non-Thermal)

Aluminum Glazing Spacer

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 Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
0.70	0.63
0.65	0.58
0.60	0.54
0.55	0.49
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.28
0.25	0.23
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.65
0.70	0.61
0.65	0.57
0.60	0.52
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.17
0.15	0.13
0.10	0.09
0.05	0.04



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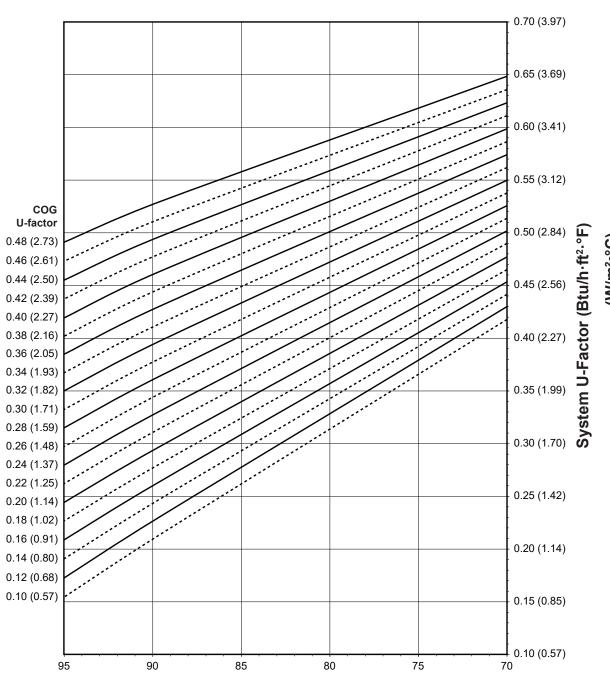
Trifab® VersaGlaze® 451T (CENTER – Thermal)

Warm-Edge Glazing Spacer

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts:

For glass values not listed, linear interpolation is permitted.

Glass Properties are based on center of glass values and are obtained from your glass supplier.



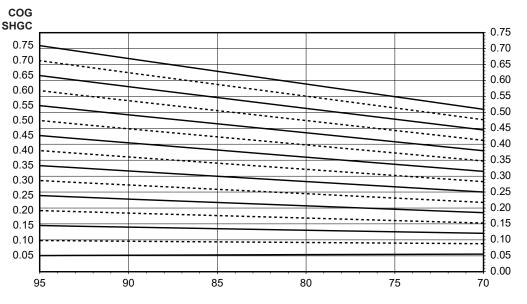
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Trifab® VersaGlaze® 451T (CENTER – Thermal)

Warm-Edge Glazing Spacer

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

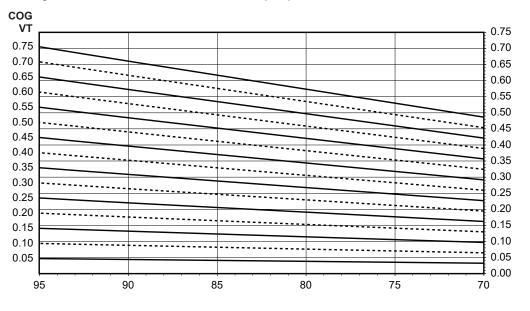


Vision Area / Total Area (%)

Charts are generated per AAMA 507.

THERMAL CHARTS

System Visible Transmittance (VT) vs Percent of Vision Area



Vision Area / Total Area (%)

Charts are generated per AAMA 507.

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THERMAL PERFORMANCE MATRIX

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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.53
0.46	0.51
0.44	0.50
0.42	0.48
0.40	0.46
0.38	0.45
0.36	0.43
0.34	0.41
0.32	0.40
0.30	0.38
0.28	0.36
0.26	0.35
0.24	0.33
0.22	0.31
0.20	0.30
0.18	0.28
0.16	0.26
0.14	0.25
0.12	0.23
0.10	0.21

Trifab® VersaGlaze® 451T (CENTER - Thermal)

Warm-Edge Glazing Spacer

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 Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
0.70	0.62
0.65	0.58
0.60	0.53
0.55	0.49
0.50	0.45
0.45	0.40
0.40	0.36
0.35	0.31
0.30	0.27
0.25	0.23
0.20	0.18
0.15	0.14
0.10	0.10
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.66
0.70	0.61
0.65	0.57
0.60	0.53
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



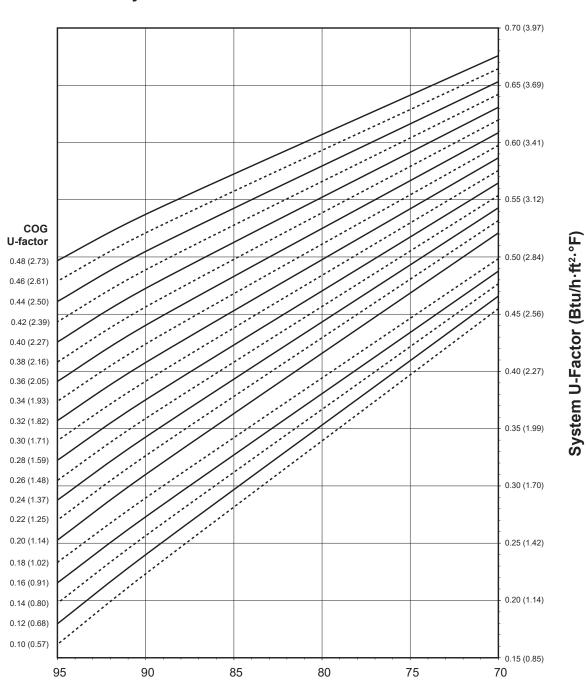
THERMAL CHARTS

Trifab® VersaGlaze® 451T (CENTER – Thermal)

Aluminum Glazing Spacer

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts:

For glass values 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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codes governing the design and use of Kawneer arnce, window, and curtain well products, vary widely, selection of product configurations, operating s, and assumes no responsibility therefor.

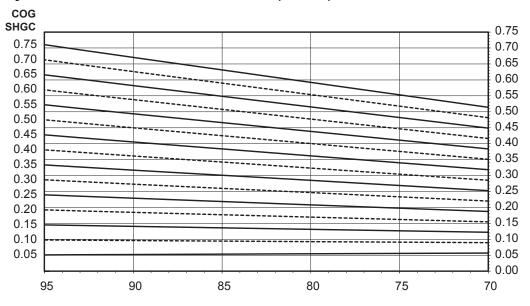
EC 97911-316 THERMAL CHARTS

Trifab® VersaGlaze® 451T (CENTER – Thermal)

Trifab® VersaGlaze® 451T Framing System

Aluminum Glazing Spacer

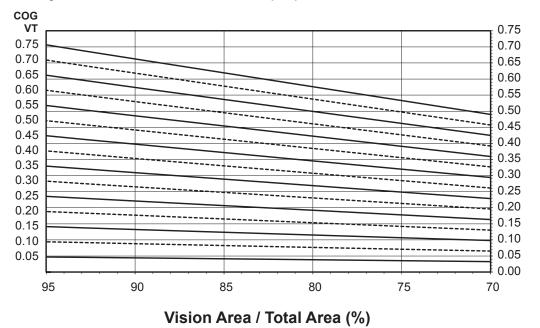
System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area



Vision Area / Total Area (%)

Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.54
0.46	0.52
0.44	0.51
0.42	0.49
0.40	0.48
0.38	0.46
0.36	0.44
0.34	0.43
0.32	0.41
0.30	0.40
0.28	0.38
0.26	0.36
0.24	0.35
0.22	0.33
0.20	0.32
0.18	0.29
0.16	0.28
0.14	0.26
0.12	0.25
0.10	0.23

Trifab® VersaGlaze® 451T (CENTER - Thermal)

Aluminum Glazing Spacer

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 Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
0.70	0.62
0.65	0.58
0.60	0.53
0.55	0.49
0.50	0.45
0.45	0.40
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.18
0.15	0.14
0.10	0.10
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.66
0.70	0.61
0.65	0.57
0.60	0.53
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



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System U-Factor (Btu/h·ft²·°F)

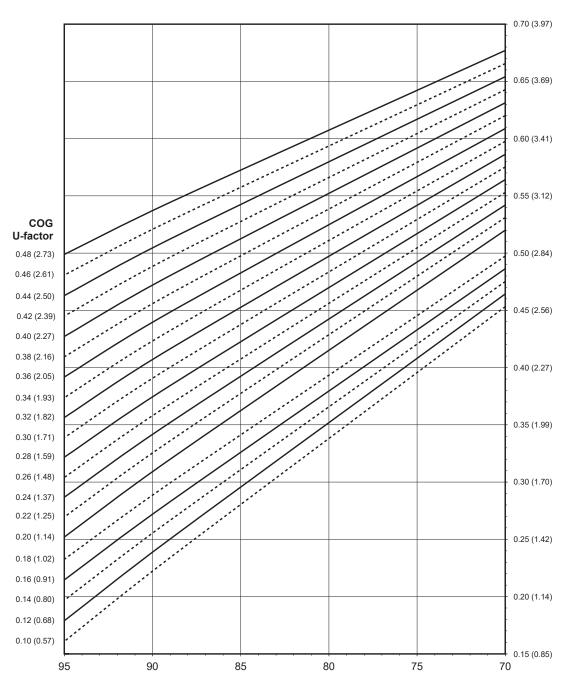
EC 97911-316 THERMAL CHARTS

Trifab® VersaGlaze® 451T Pre-Glazed (CENTER – Thermal)

Aluminum Glazing Spacer

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts: For glass values not listed, linear interpolation is permitted. Glass Properties are based on center of glass values and are obtained from your glass supplier.

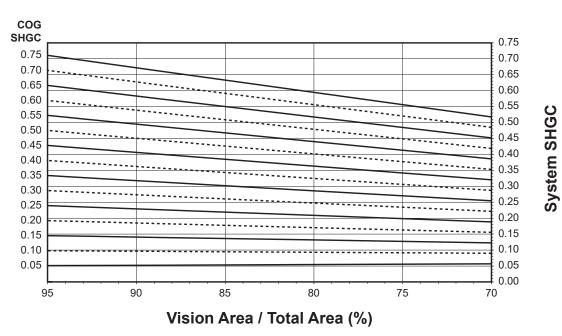


EC 97911-316

Trifab® VersaGlaze® 451T Pre-Glazed (CENTER – Thermal)

Aluminum Glazing Spacer

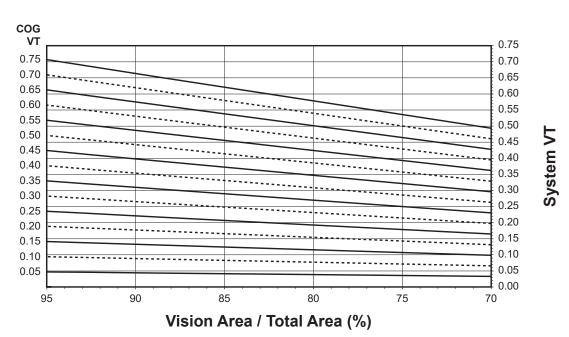
System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area



Charts are generated per AAMA 507.

THERMAL CHARTS

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



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eer reserves the right to change configuration without prior notice when deemed isary for product improvement.

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Trifab® VersaGlaze® 451T Framing System

THERMAL PERFORMANCE MATRIX

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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.55
0.46	0.53
0.44	0.51
0.42	0.50
0.40	0.48
0.38	0.47
0.36	0.45
0.34	0.43
0.32	0.42
0.30	0.40
0.28	0.39
0.26	0.37
0.24	0.35
0.22	0.34
0.20	0.32
0.18	0.30
0.16	0.28
0.14	0.27
0.12	0.25
0.10	0.24

Trifab[®] VersaGlaze[®] 451T Pre-Glazed (CENTER – Thermal)

Aluminum Glazing Spacer

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

- 1. U-Factors are determined in accordance with NFRC 100.
- 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.
- Overall U-Factor, SHGC, and VT Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Overall SHGC ⁴
0.66
0.62
0.58
0.53
0.49
0.45
0.40
0.36
0.31
0.27
0.23
0.18
0.14
0.10
0.05

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.65
0.70	0.61
0.65	0.57
0.60	0.52
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.17
0.15	0.13
0.10	0.09
0.05	0.04



Trifab® VersaGlaze® 451T (FRONT – Thermal)

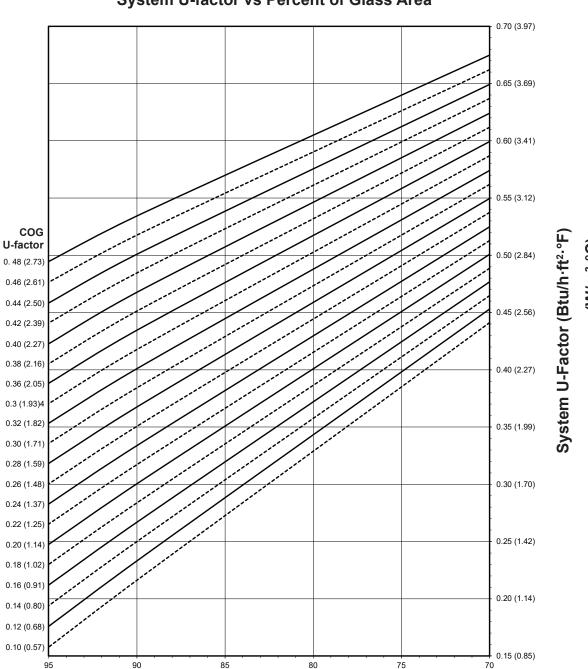
Warm-Edge Glazing Spacer

Note:

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

THERMAL CHARTS

System U-factor vs Percent of Glass Area



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

Notes for System U-factor, SHGC, and VT charts:

For glass values not listed, linear interpolation is permitted.

Glass Properties are based on center of glass values and are obtained from your glass supplier.



Laws and building and safety codes governing the design and use of Kawn products, such as glazed entrance, window, and curtain wall products, vary Kawneer does not control the selection of product configurations, operating

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codes governing the design and use of Kawneer arnce, window, and curtain wall products, vary widely, selection of product configurations, operating s, and assumes no responsibility therefor.

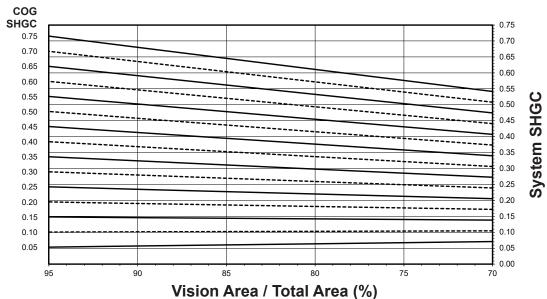
EC 97911-316 THERMAL CHARTS

Trifab[®] VersaGlaze[®] 451T (FRONT – Thermal)

Trifab® VersaGlaze® 451T Framing System

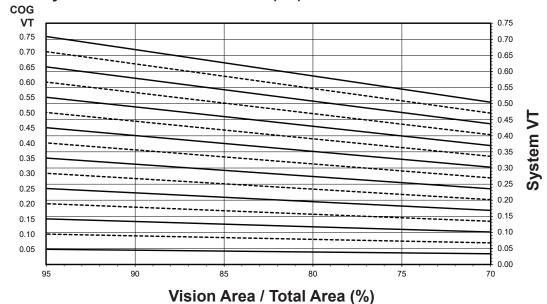
Warm-Edge Glazing Spacer

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



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THERMAL PERFORMANCE MATRIX

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

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.54
0.46	0.52
0.44	0.50
0.42	0.49
0.40	0.47
0.38	0.46
0.36	0.44
0.34	0.42
0.32	0.41
0.30	0.39
0.28	0.37
0.26	0.36
0.24	0.34
0.22	0.32
0.20	0.31
0.18	0.29
0.16	0.27
0.14	0.26
0.12	0.24
0.10	0.22

Trifab[®] VersaGlaze[®] 451T (FRONT – Thermal)

Warm-Edge Glazing Spacer

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

- 1. U-Factors are determined in accordance with NFRC 100.
- 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 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.68
0.70	0.63
0.65	0.59
0.60	0.54
0.55	0.50
0.50	0.46
0.45	0.41
0.40	0.37
0.35	0.32
0.30	0.28
0.25	0.23
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.66
0.70	0.62
0.65	0.58
0.60	0.53
0.55	0.49
0.50	0.44
0.45	0.40
0.40	0.35
0.35	0.31
0.30	0.27
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



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

EC 97911-316 THERMAL CHARTS

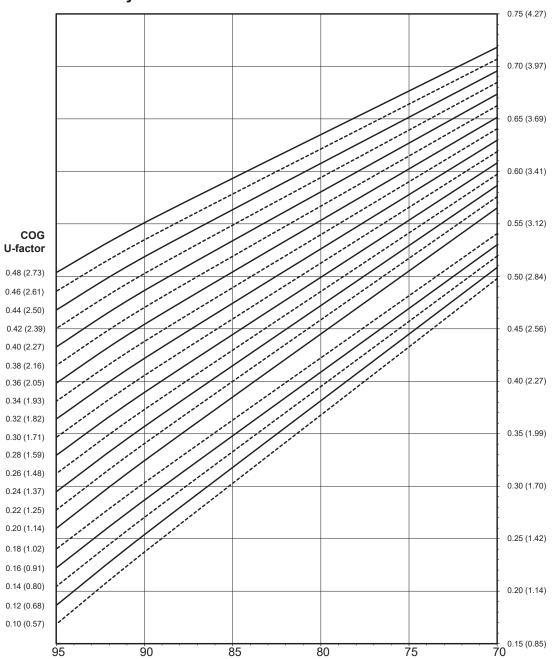
Trifab[®] VersaGlaze[®] 451T (FRONT – Thermal)

Trifab® VersaGlaze® 451T Framing System

Aluminum Glazing Spacer

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts: For glass values not listed, linear interpolation is permitted. Glass Properties are based on center of glass values and are obtained from your glass supplier.



System U-Factor (Btu/h·ft²·ºF)

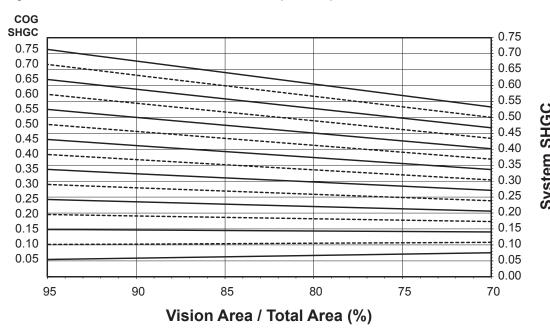
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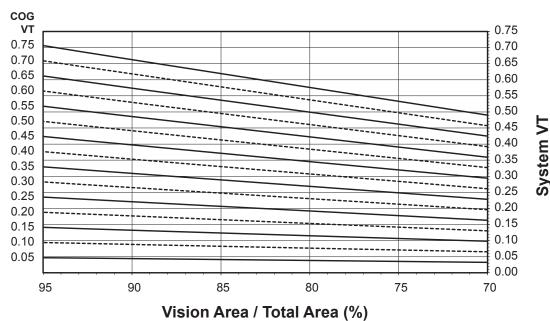
Aluminum Glazing Spacer

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



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

Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.56
0.46	0.54
0.44	0.52
0.42	0.51
0.40	0.49
0.38	0.48
0.36	0.46
0.34	0.44
0.32	0.43
0.30	0.41
0.28	0.40
0.26	0.38
0.24	0.36
0.22	0.35
0.20	0.33
0.18	0.31
0.16	0.29
0.14	0.28
0.12	0.26
0.10	0.24

Trifab[®] VersaGlaze[®] 451T (FRONT – Thermal)

Aluminum Glazing Spacer

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

- 1. U-Factors are determined in accordance with NFRC 100.
- 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 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
0.70	0.63
0.65	0.59
0.60	0.54
0.55	0.50
0.50	0.45
0.45	0.41
0.40	0.37
0.35	0.32
0.30	0.28
0.25	0.23
0.20	0.19
0.15	0.15
0.10	0.10
0.05	0.06

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.66
0.70	0.61
0.65	0.57
0.60	0.53
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



System U-Factor (Btu/h·ft²·°F)

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THERMAL CHARTS

Trifab® VersaGlaze® 451T (BACK – Thermal)

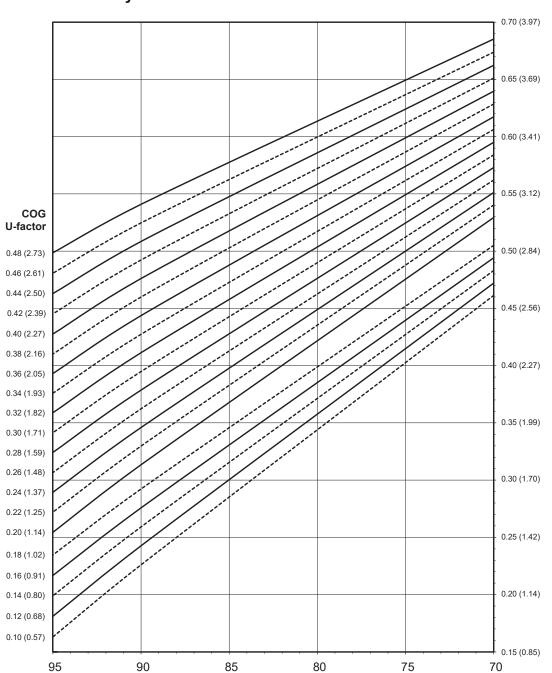
Aluminum Glazing Spacer

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts:

For glass values 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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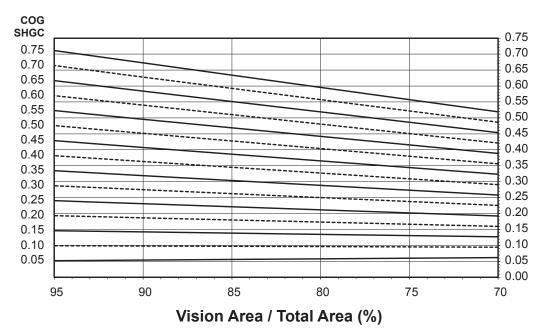
System SHGC

EC 97911-316 THERMAL CHARTS

Trifab® VersaGlaze® 451T (BACK – Thermal)

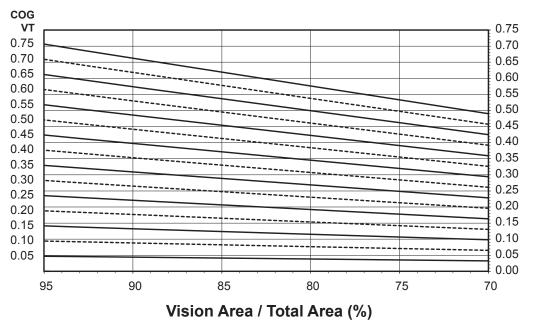
Aluminum Glazing Spacer

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



Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.



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THERMAL PERFORMANCE MATRIX

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

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Glass U-Factor ³	Overall U-Factor ⁴
0.48	0.54
0.46	0.53
0.44	0.51
0.42	0.50
0.40	0.48
0.38	0.46
0.36	0.45
0.34	0.43
0.32	0.42
0.30	0.40
0.28	0.38
0.26	0.37
0.24	0.35
0.22	0.34
0.20	0.32
0.18	0.30
0.16	0.28
0.14	0.26
0.12	0.25
0.10	0.23

Trifab[®] VersaGlaze[®] 451T (BACK – Thermal)

Aluminum Glazing Spacer

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

- 1. U-Factors are determined in accordance with NFRC 100.
- 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 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix²

Glass SHGC ³	Overall SHGC ⁴
0.75	0.67
0.70	0.62
0.65	0.58
0.60	0.54
0.55	0.49
0.50	0.45
0.45	0.41
0.40	0.36
0.35	0.32
0.30	0.27
0.25	0.23
0.20	0.19
0.15	0.14
0.10	0.10
0.05	0.05

Visible Transmittance ²

Glass VT ³	Overall VT ⁴
0.75	0.66
0.70	0.61
0.65	0.57
0.60	0.53
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.18
0.15	0.13
0.10	0.09
0.05	0.04



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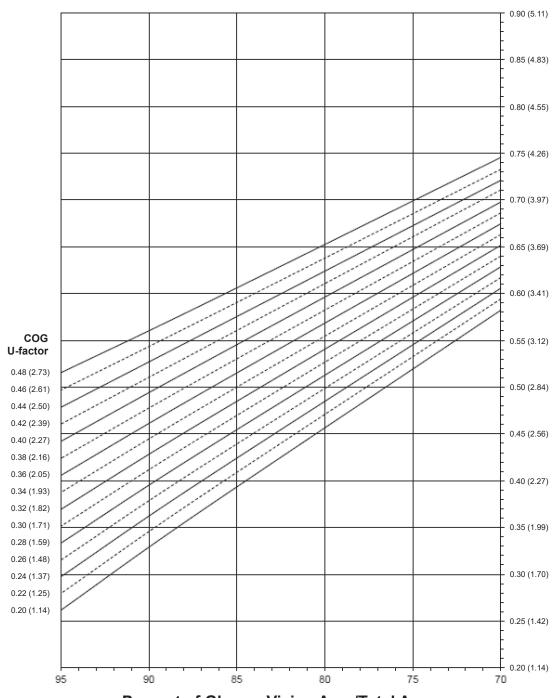
EC 97911-316 THERMAL CHARTS

Trifab® VersaGlaze® 451T with Steel (CENTER)

Aluminum Glazing Spacer

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 = Vision Area/Total Area (Total Daylight Opening / Projected Area)

Notes for System U-factor, SHGC, and VT charts:

For glass values 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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System U-Factor (Btu/h·ft²·°F)

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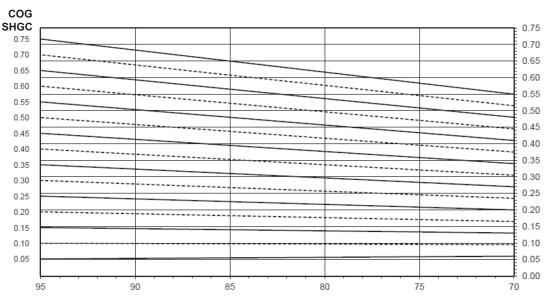
EC 97911-316

THERMAL CHARTS

Trifab® VersaGlaze® 451T with Steel (CENTER)

Aluminum Glazing Spacer

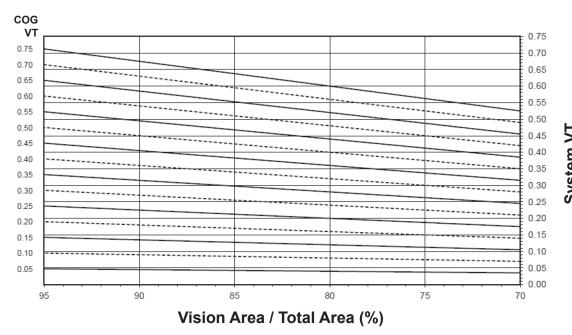
System Solar Heat Gain Coefficient (SHGC) vs Percent of Vision Area



Vision Area / Total Area (%)

Charts are generated per AAMA 507.

System Visible Transmittance (VT) vs Percent of Vision Area



Charts are generated per AAMA 507.

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

Glass U-Factor ³	Overall U-Factor 4
0.48	0.59
0.46	0.57
0.44	0.55
0.42	0.54
0.40	0.52
0.38	0.51
0.36	0.49
0.34	0.48
0.32	0.46
0.30	0.44
0.28	0.43
0.26	0.41
0.24	0.40
0.22	0.38
0.20	0.37

Trifab® VersaGlaze® 451T with Steel (CENTER)

THERMAL PERFORMANCE MATRIX

Aluminum Glazing Spacer

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 Matricies are based on the standard NFRC specimen size of 2,000 mm wide by 2,000 mm high (78-3/4" by 78-3/4").

SHGC Matrix ²

Overall SHGC ⁴
0.66
0.62
0.58
0.53
0.49
0.45
0.40
0.36
0.32
0.27
0.23
0.19
0.14
0.10
0.05

Visible Transmittance ²

Glass VT ³	Overall VT 4
0.75	0.65
0.70	0.61
0.65	0.57
0.60	0.52
0.55	0.48
0.50	0.44
0.45	0.39
0.40	0.35
0.35	0.31
0.30	0.26
0.25	0.22
0.20	0.17
0.15	0.13
0.10	0.09
0.05	0.04



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