



FORGENT® SERIES



We're for the visionaries.®

**We're for people
who take building
to new levels.**



We're for people who are passionate about design, who care about the big picture and the smallest detail. We're for people who aren't satisfied with mainstream choices... who push the limits of what's possible with the options and innovations that can only be found in Kolbe windows and doors.



We're for quality craftsmanship.

We're for a tradition of excellence that outlasts the latest design trend. The Kolbe story began with a family and a vision. More than 75 years after the Kolbe brothers began their commitment to producing premium quality windows and doors, products bearing their family name can be found in some of North America's most impressive homes and businesses.

We're for expertise.

We're for people who dream of a personalized design experience. That's why you can't find Kolbe windows and doors in the aisles of a home center. Our products are only available through a Kolbe dealer, because they are as passionate about windows and doors as you are about bringing your vision to life. And they will work with you to make your dream a concrete reality.



We're for possibilities.

We're for people who won't settle for "standard." We're for limitless options and custom solutions that can only be found in Kolbe's made-to-order products. Our team members are craftspeople who focus on building one window or door at a time, to create distinctive products that fulfill your unique vision.

We're for innovation.

We're for people who want to take building to new levels, with advancements in not only extraordinary sizes and shapes, but also ground-breaking products. We're for creative thinking that redefines what's possible, constantly reimagining our windows and doors to elevate style, performance and functionality.

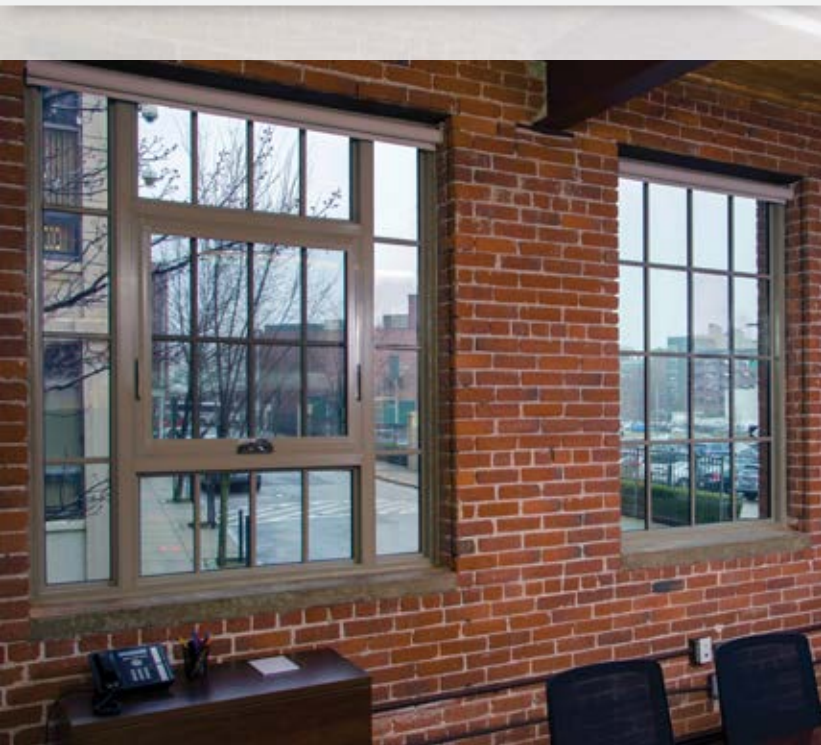


**Let us bring
your vision
to life.**



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THE FORGENT® SERIES

Forgent Series windows and doors incorporate innovative design and state-of-the-art technology with a proprietary Glastra® material. Engineered for strength, resilience, and ease-of-installation, this high-performance product line is a perfect choice for new construction or replacement projects.





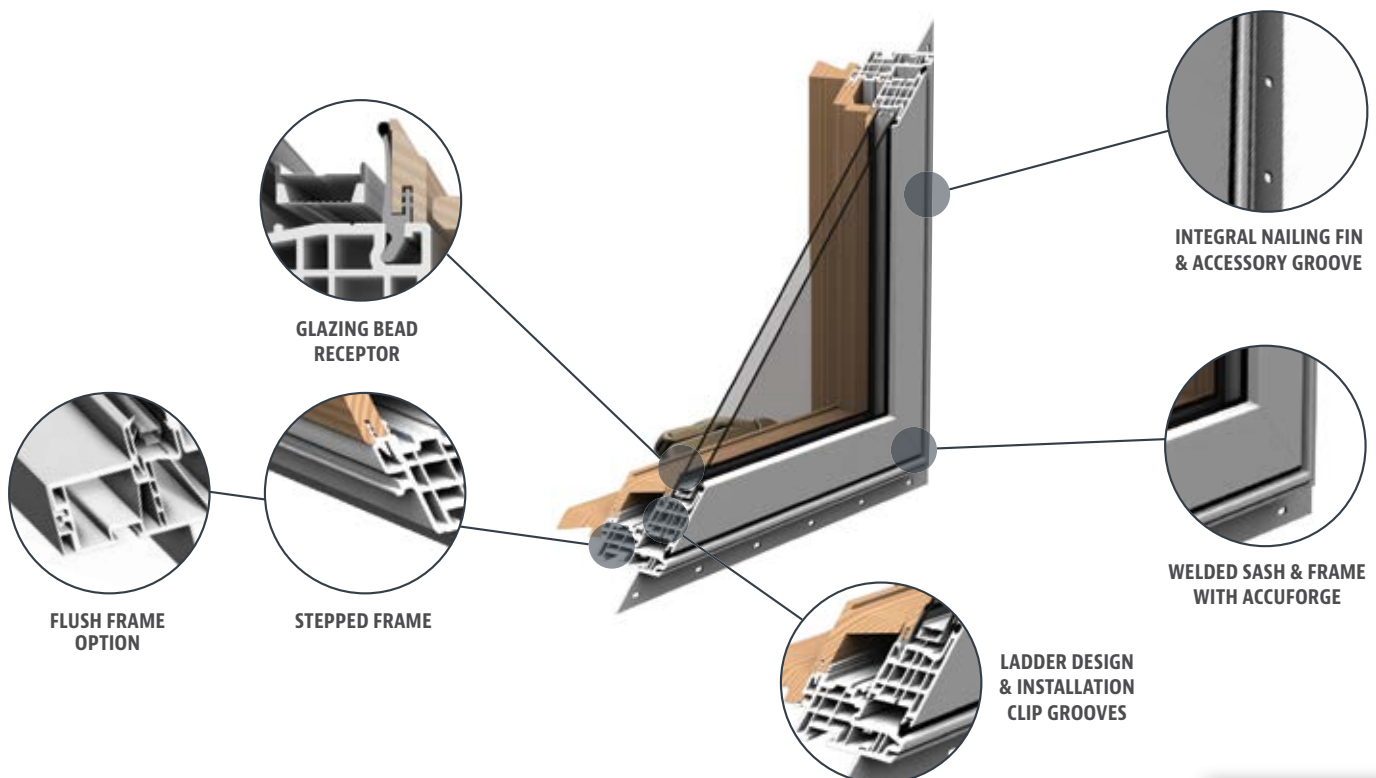
The Forgent Series provides:

STRENGTH & PERFORMANCE:

- Strong and resilient Glastra exterior with Glastra or Wood interior
- Advanced ladder design with multiple chambers for strength and energy efficiency
- Welded sash and frame with AccuForge™ technology for a smooth, air and watertight seam
- Integral nailing fin has fewer sealing points, for rigidity and a watertight installation
- Impact performance capabilities to meet the demands of coastal hurricane zones

EASE OF INSTALLATION:

- Three convenient installation methods: integral nailing fin, installation clips, screw through frame
- Glazing bead receptor helps create a clean break-point during painting and staining
- Accessory groove allows for quick installation of exterior accessories without additional clips
- Dry glazed sash allows for serviceable sash and components



INNOVATION & TECHNOLOGY



© Photo courtesy of Next Polymers Ltd./Brunet Group

MATERIAL

Forgent Series products are comprised of Glastra, a proprietary hybrid of fiberglass and UV stable polymer. To better match décor and performance requirements, a Glastra exterior with a choice of Glastra or Wood interior is available in select colors and finishes.

Glastra is an innovative, recyclable material that helps form the resilient foundation of Forgent Series products. Manufacturing byproducts are repurposed for use in other industries, such as underground industrial piping.



shown
in photo
above



**GLASTRA EXTERIOR
WITH GLASTRA INTERIOR**

Both the exterior and interior are comprised of Glastra, with finishes available in Cloud, Sahara, Midnight or Bronze.

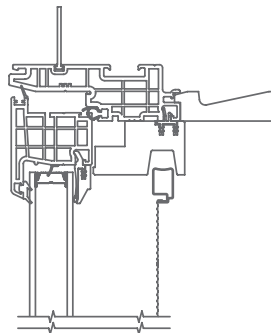


**GLASTRA EXTERIOR
WITH WOOD INTERIOR**

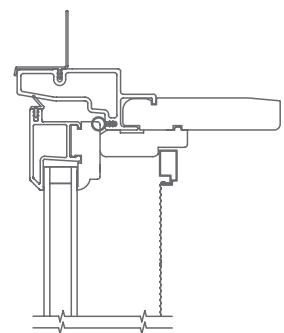
The exterior is comprised of Glastra, while the interior is Pine wood, available in popular pre-finishes including: Double Clear Coat, Latex Primer, Black Paint, White Paint, or a variety of stains.

CONSTRUCTION

Forgent Series windows are constructed of multi-chambered Glastra extrusions in an advanced ladder design for numerous benefits – the chambers add strength and promote energy efficiency. The same structural framework is used for All Glastra and Glastra/Wood products, for consistent performance.



**FORGENT SERIES
CONSTRUCTION**



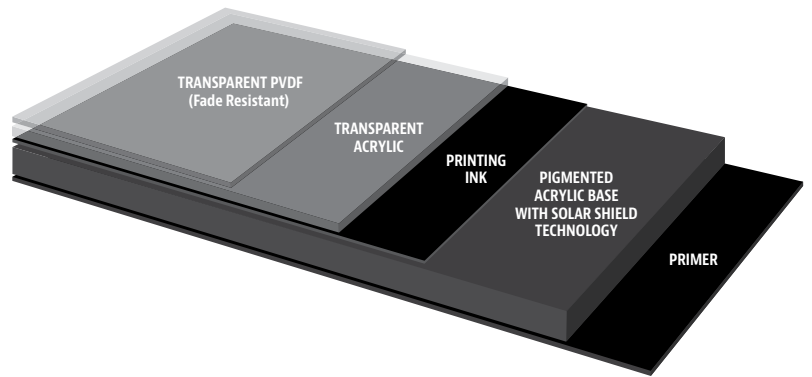
**TYPICAL FIBERGLASS
CONSTRUCTION**



© Kim Smith Photo

ACRYLIC FILM

A Midnight or Bronze film can be applied to Forgent Series products with a Glastra exterior and interior. This film utilizes a pigmented acrylic base technology that reduces heat absorption and resists fading. A profile lamination process permanently bonds the film to the Glastra material, enabling it to withstand the harshest of conditions – from extreme heat to extreme cold. And because the film has a very low surface tension, typical dirt, debris – even paint – can be removed from the surface with mild soap and water.



ACCUFORGE™

Forgent Series window frames* and sash feature AccuForge™, an innovative miter joint technology. This state-of-the-art nip welding process creates a stronger air and watertight seam with a smooth, high-end finish.



COMPRESSION SEAL

Forgent Series windows and doors feature EPDM gaskets in the glazing system as well as between the operable sash and frame, to seal the joint and create an air and watertight seal. Similar to those used on commercial windows, cars and airplane doors, they also keep noise out, for a quieter, drier, more comfortable environment.

	Thermal Expansion (In/In F° x 10 ⁻⁶)									
Vinyl										
Cellular PVC										
Glastra										
Aluminum										
Pine										
	0	5	10	15	20	25	30	35	40	45

THERMAL EXPANSION

All materials are subject to some level of expansion as temperatures fluctuate. Forgent Series Glastra material is less affected by these changes, with a lower expansion rate than many composite products, and less than half the rate of vinyl products.

AccuForge™ is a trademark of Kolbe & Kolbe Millwork Co., Inc.

*Specialty windows (geometric and radius) and sliding doors are not manufactured with AccuForge technology. Forgent Series exterior films are compliant with and have achieved 307-16 certification from the American Architectural Manufacturers Association (AAMA). The AAMA 307-16 designation specifically refers to Voluntary Specifications for Laminates Intended for Use on AAMA Certified Profiles.

CASEMENTS & AWNINGS

OPERATING | PICTURE



CASEMENT & AWNING STANDARD FEATURES

- ▶ All Glastra units with Cloud or Sahara integral color* (see pg. 58)
- ▶ Flush frame groove filler for drywall return (New Construction - no extension jamb)
- ▶ Energy efficient, insulating Solar Low-E glass (see pg. 60)
- ▶ Dry glazed to the interior with beveled glazing bead
- ▶ Accessory grooves are integral to the extruded frames for the easy addition of accessories
- ▶ Insect screen with BetterVue® fiberglass mesh and Water Shed Technology™ (see screen finishes, pg. 62)
- ▶ Crank-out nesting handle and multi-point locking levers are color matched to the interior (pg. 9)
- ▶ Integral 1-1/4" nailing fin provides easier installation and helps seal the window opening
- ▶ Box-to-box standard mullion (see pg. 14)

NOTE: All measurements are nominal.



**ALL GLASTRA
CASEMENT**
(interior)



**ALL GLASTRA
CASEMENT**
(exterior)

BetterVue® and Water Shed Technology™ are registered trademarks of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details.



CASEMENT & AWNING OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-air-space

NOTE: All measurements are nominal.

Other Options:

- ▶ Replacement casements and awnings
(3-1/4" overall frame depth for All Glastra units, 4-1/16" for Glastra/Wood units; no nailing fin and pre-drilled for installation)
- ▶ Glastra/Wood: Unfinished pine interior with no visible fasteners or wood exposed to the exterior
- ▶ Latex primed interior* *(Glastra/Wood units, see pg. 59)*
- ▶ Interior prefinishing *(Glastra/Wood units, see pg. 59)*
- ▶ Exterior acrylic film in Midnight or Bronze *(available on All Glastra or Glastra/Wood units; see pg. 58)*
- ▶ Interior acrylic film in Midnight or Bronze *(only on All Glastra units with Midnight or Bronze exterior; see pg. 58)*
- ▶ Multiple trim accessories *(shipped loose; see pg. 63)*
- ▶ Insect screen available with aluminum or UltraVue® mesh *(see screen finishes, pg. 62)*
- ▶ Extension jambs available in depths up to 9" overall
- ▶ Offset extension jambs
- ▶ Stepped frame groove filler for drywall return *(no extension jamb)*
- ▶ Glastra/Wood: Wood glazing bead receptor
- ▶ Galvanized steel installation clips
- ▶ Ashlar handle *(see hardware finishes, pg. 62)*
- ▶ Window Opening Control Device (WOCD) *(see pg. 62)*
- ▶ Coastal hardware package
- ▶ Impact performance modifications *(see pg. 65)*

*Latex primer is not a final finish.

HARDWARE (see hardware finishes, pg. 62):

Crank-out handles fold down when not in use, and multi-point locks engage with a locking lever.



NESTING HANDLE

(shown in Clay)



LOCKING LEVER

(shown in Clay)



ASHLAR HANDLE

(shown in Matte Black)





































Also available: Satin Nickel | White | Matte Black | Rustic Umber

Also available: Satin Nickel | White | Rustic Umber

UltraVue® is a registered trademark of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details. Finish colors will vary from printed images. Please make selections using actual color samples available from your local Kolbe dealer. Not all hardware color options are available on all products.

CASEMENTS | Elevation Charts

CASEMENTS

U.D.	1' 5-1/2"	1' 11-1/2"	2' 5-1/2"	2' 11-1/2"
R.O.	1' 6"	2' 0"	2' 6"	3' 0"
G.S.	12 15/16"	18 15/16"	24 15/16"	30 15/16"
1' 11-1/2" 2' 0"	 MC 1620	 MC 2020	 MC 2620	 MC 3020
2' 5-1/2" 2' 6"	 MC 1626	 MC 2026	 MC 2626	 MC 3026
2' 11-1/2" 3' 0"	 MC 1630	 MC 2030	 MC 2630	 MC 3030*
3' 5-1/2" 3' 6"	 MC 1636	 MC 2036	 MC 2636*	 MC 3036*
3' 11-1/2" 4' 0"	 MC 1640	 MC 2040	 MC 2640*	 MC 3040*
4' 5-1/2" 4' 6"	 MC 1646	 MC 2046	 MC 2646*	 MC 3046*
4' 11-1/2" 5' 0"	 MC 1650	 MC 2050	 MC 2650*	 MC 3050*
5' 5-1/2" 5' 6"	 MC 1656	 MC 2056	 MC 2656*	 MC 3056*
5' 11-1/2" 6' 0"	 MC 1660	 MC 2060	 MC 2660*	 MC 3060*

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

















































































*Units meet most national emergency escape and rescue requirements.

NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

CASEMENTS | PICTURE UNITS

U.D.	1' 5-1/2"	1' 11-1/2"	2' 5-1/2"	2' 11-1/2"	3' 5-1/2"	3' 11-1/2"	4' 11-1/2"	5' 11-1/2"
R.O.	1' 6"	2' 0"	2' 6"	3' 0"	3' 6"	4' 0"	5' 0"	6' 0"
G.S.	12 15/16"	18 15/16"	24 15/16"	30 15/16"	36 15/16"	42 15/16"	54 15/16"	66 15/16"
1' 5-1/2" 1' 6"	 MCPT 1616	 MCPT 2016	 MCPT 2616	 MCPT 3016	 MCPT 3616	 MCPT 4016	 MCPT 5016	 MCPT 6016
1' 11-1/2" 2' 0"	 MCPT 1620	 MCPT 2020	 MCPT 2620	 MCPT 3020	 MCPT 3620	 MCPT 4020	 MCPT 5020	 MCPT 6020
2' 5-1/2" 2' 6"	 MCPT 1626	 MCPT 2026	 MCPT 2626	 MCPT 3026	 MCPT 3626	 MCPT 4026	 MCPT 5026	 MCPT 6026
2' 11-1/2" 3' 0"	 MCPT 1630	 MCPT 2030	 MCPT 2630	 MCPT 3030	 MCPT 3630	 MCPT 4030	 MCPT 5030	 MCPT 6030
3' 5-1/2" 3' 6"	 MCPT 1636	 MCPT 2036	 MCPT 2636	 MCPT 3036	 MCPT 3636	 MCPT 4036	 MCPT 5036	 MCPT 6036
3' 11-1/2" 4' 0"	 MCPT 1640	 MCPT 2040	 MCPT 2640	 MCPT 3040	 MCPT 3640	 MCPT 4040	 MCPT 5040	 MCPT 6040
4' 5-1/2" 4' 6"	 MCPT 1646	 MCPT 2046	 MCPT 2646	 MCPT 3046	 MCPT 3646	 MCPT 4046	 MCPT 5046	 MCPT 6046
4' 11-1/2" 5' 0"	 MCPT 1650	 MCPT 2050	 MCPT 2650	 MCPT 3050	 MCPT 3650	 MCPT 4050	 MCPT 5050	 MCPT 6050
5' 5-1/2" 5' 6"	 MCPT 1656	 MCPT 2056	 MCPT 2656	 MCPT 3056	 MCPT 3656	 MCPT 4056	 MCPT 5056	 MCPT 6056
5' 11-1/2" 6' 0"	 MCPT 1660	 MCPT 2060	 MCPT 2660	 MCPT 3060	 MCPT 3660	 MCPT 4060	 MCPT 5060	 MCPT 6060


























U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

NOTE: All measurements are nominal. Elevation charts are not to scale.
Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

AWNINGS | Elevation Chart

AWNINGS

U.D.	1' 11-1/2"	2' 5-1/2"	2' 11-1/2"	3' 5-1/2"	3' 11-1/2"
R.O.	2' 0"	2' 6"	3' 0"	3' 6"	4' 0"
G.S.	18 13/16"	24 15/16"	30 15/16"	36 15/16"	42 15/16"
1' 11-1/2" 2' 0"	 MA 2020	 MA 2620	 MA 3020	 MA 3620	 MA 4020
2' 5-1/2" 2' 6"	 MA 2026	 MA 2626	 MA 3026	 MA 3626	 MA 4026
2' 11-1/2" 3' 0"	 MA 2030	 MA 2630	 MA 3030	 MA 3630	 MA 4030
3' 5-1/2" 3' 6"	 MA 2036	 MA 2636	 MA 3036	 MA 3636	 MA 4036
3' 11-1/2" 4' 0"	 MA 2040	 MA 2640	 MA 3040	 MA 3640	 MA 4040

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

NOTE: All measurements are nominal. Elevation charts are not to scale.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

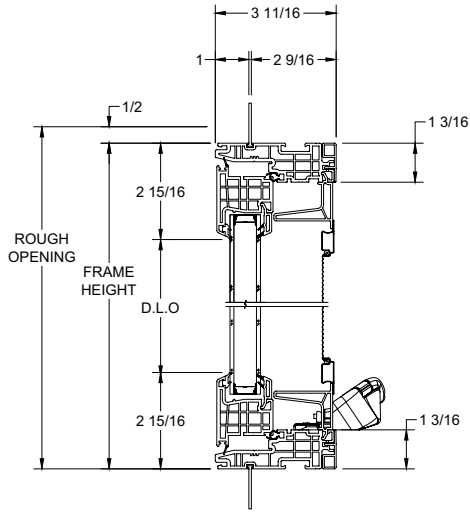
Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

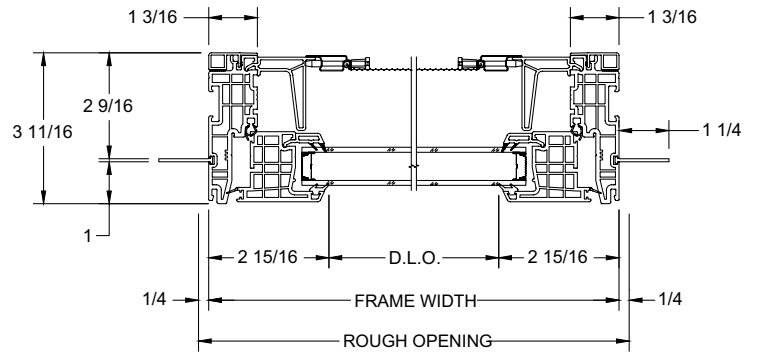
CASEMENTS & AWNINGS | Cross Section Drawings

CASEMENTS & AWNINGS – ALL GLASTRA

Vertical Section



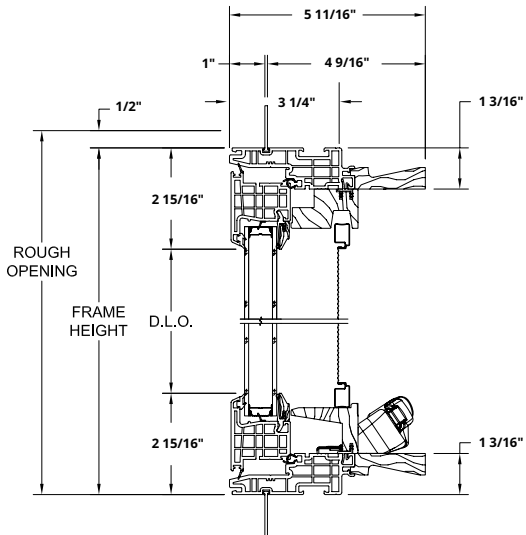
Horizontal Section



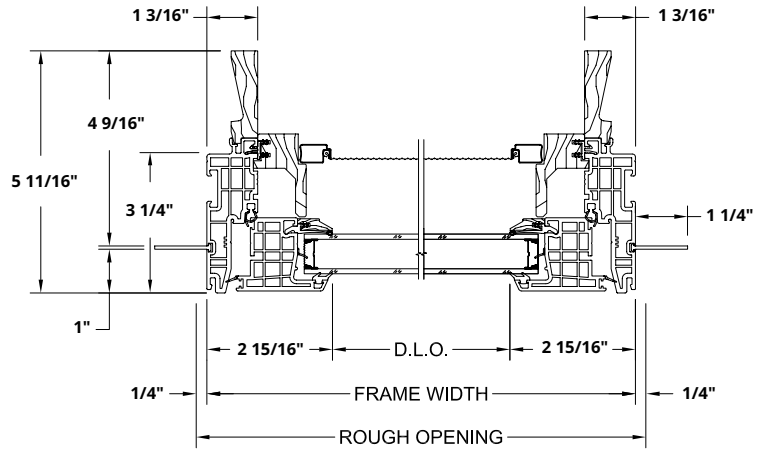
(Shown with optional flush frame filler)

CASEMENTS & AWNINGS – GLASTRA/WOOD

Vertical Section



Horizontal Section

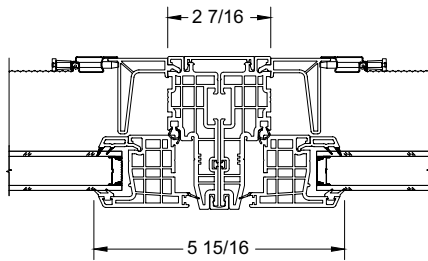


NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

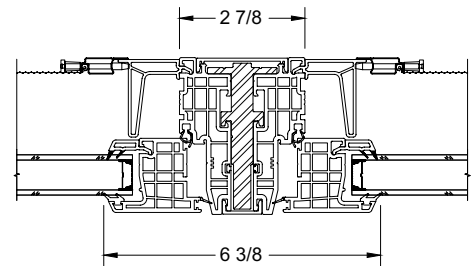
CASEMENTS & AWNINGS | Mulling Options

CASEMENTS & AWNINGS – ALL GLASTRA

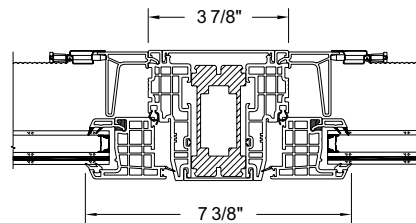
1/16" Standard Mullion
Standard Performance
(Flush)



1/2" Mullion Reinforced
Commercial & Impact Performance
(No T-Mulls)

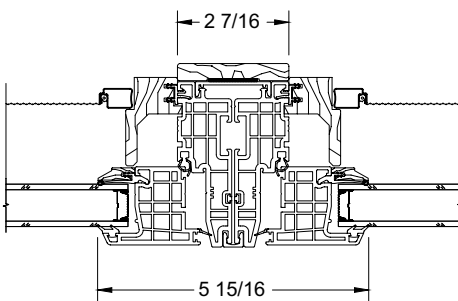


1-1/2" Mullion Reinforced
Commercial & Impact Performance

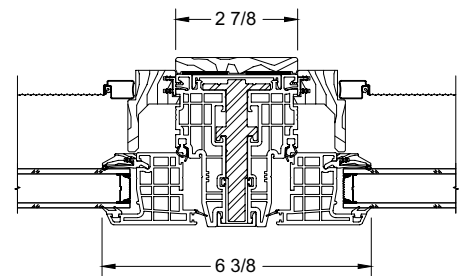


CASEMENTS & AWNINGS – GLASTRA/WOOD

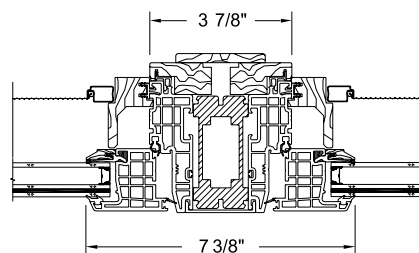
1/16" Standard Mullion
Standard Performance
(Flush)



1/2" Mullion Reinforced
Commercial & Impact Performance
(No T-Mulls)



1-1/2" Mullion Reinforced
Commercial & Impact Performance



These mullion types are available on all Forgent Series windows. Depth dimensions may change. Please refer to kolbewindows.com for the most current drawings and technical details.

NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63.



DOUBLE HUNG

OPERATING | STUDIO



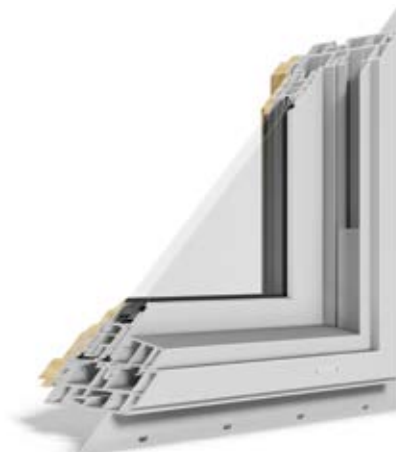
DOUBLE HUNG STANDARD FEATURES

- ▶ All Glastra units with Cloud or Sahara integral color* (see pg. 58)
- ▶ Flush frame groove filler for drywall return (New Construction - no extension jamb)
- ▶ Energy efficient, insulating Solar Low-E glass (see pg. 60)
- ▶ Equal glass sizing provides matching sight lines from sash to sash
- ▶ Dry glazed to the interior with beveled glazing bead
- ▶ Accessory grooves are integral to the extruded frames for the easy addition of accessories
- ▶ Full frame inset screen with BetterVue® fiberglass mesh and Water Shed Technology™ (see screen finishes, pg. 62)
- ▶ Stainless steel, constant force balance system provides durability and ease of operation
- ▶ Sash lock and tilt latches are color matched to the interior (pg. 17)
- ▶ Lift handle on bottom sash is color matched to the interior (only on All Glastra units; pg. 17)
- ▶ Integral 1-1/4" nailing fin provides easier installation and helps seal the window opening (New Construction)

NOTE: All measurements are nominal.



**GLASTRA/WOOD
NEW CONSTRUCTION DOUBLE HUNG**
(interior)



**GLASTRA/WOOD
NEW CONSTRUCTION DOUBLE HUNG**
(exterior)

BetterVue® and Water Shed Technology™ are registered trademarks of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details.



DOUBLE HUNG OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-air-space

NOTE: All measurements are nominal.

Other Options:

- ▶ Replacement double hungs
(3-1/4" overall frame depth for All Glastra units, 4-1/8" for Glastra/Wood units)
- ▶ Glastra/Wood: Unfinished pine interior with no visible fasteners or wood exposed to the exterior
- ▶ Latex primed interior**(Glastra/Wood units, see pg. 59)*
- ▶ Interior prefinishing *(Glastra/Wood units, see pg. 59)*
- ▶ Exterior acrylic film in Midnight or Bronze
(available on All Glastra or Glastra/Wood units; see pg. 58)
- ▶ Interior acrylic film in Midnight or Bronze
(only on All Glastra units with Midnight or Bronze exterior; see pg. 58)
- ▶ Fixed top sash
- ▶ Multiple trim accessories *(shipped loose; see pg. 63)*
- ▶ Insect screen available with aluminum or UltraVue® mesh *(see screen finishes, pg. 62)*
- ▶ Extension jambs available in depths up to 9" overall
- ▶ Offset extension jambs
- ▶ Stepped frame groove filler for drywall return
(no extension jamb)
- ▶ Glastra/Wood: Wood glazing bead receptor
- ▶ Galvanized steel installation clips
- ▶ Window Opening Control Device (WOCD) *(see pg. 62)*
- ▶ Sash limiters for safety *(non by-passable and does not meet WOCD requirements)*
- ▶ Cottage and reverse cottage style
- ▶ Impact performance modifications *(see pg. 65)*

*Latex primer is not a final finish.

HARDWARE (see hardware finishes, pg. 62):

A sash lock and tilt latches are applied to all double hung windows as standard.



SASH LOCK
(shown in Clay)



TILT LATCHES
(shown in Clay)



LIFT HANDLE – ALL GLASTRA UNITS
(shown in White)

























































Also available: Satin Nickel | White | Matte Black | Rustic Umber

Also available: Clay | Matte Black | Rustic Umber

UltraVue® is a registered trademark of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details. Finish colors will vary from printed images. Please make selections using actual color samples available from your local Kolbe dealer. Not all hardware color options are available on all products.

DOUBLE HUNG | Elevation Charts

NEW CONSTRUCTION DOUBLE HUNG

F.S.	1'-5 1/2"	1'-11 1/2"	2'-5 1/2"	2'-7 1/2"	2'-11 1/2"	3'-1 1/2"	3'-5 1/2"	3'-11 1/2"
R.O.	1'-6"	2'-0"	2'-6"	2'-8"	3'-0"	3'-2"	3'-6"	4'-0"
G.S.	12-1/4"	18-1/4"	24-1/4"	26-1/4"	30-1/4"	32-1/4"	36-1/4"	42-1/4"
2'-11 1/2" 3'-0" 14'-5/16"	 MNC DH 1630	 MNC DH 2030	 MNC DH 2630	 MNC DH 2830	 MNC DH 3030	 MNC DH 3230	 MNC DH 3630	 MNC DH 4030
3'-5 1/2" 3'-6" 17'-5/16"	 MNC DH 1636	 MNC DH 2036	 MNC DH 2636	 MNC DH 2836	 MNC DH 3036	 MNC DH 3236	 MNC DH 3636	 MNC DH 4036
3'-11 1/2" 4'-0" 20'-5/16"	 MNC DH 1640	 MNC DH 2040	 MNC DH 2640	 MNC DH 2840	 MNC DH 3040	 MNC DH 3240	 MNC DH 3640	 MNC DH 4040
4'-5 1/2" 4'-6" 23'-5/16"	 MNC DH 1646	 MNC DH 2046	 MNC DH 2646	 MNC DH 2846	 MNC DH 3046	 MNC DH 3246	 MNC DH 3646	 MNC DH 4046
4'-11 1/2" 5'-0" 26'-5/16"	 MNC DH 1650	 MNC DH 2050	 MNC DH 2650	 MNC DH 2850	 MNC DH 3050	 MNC DH 3250*	 MNC DH 3650*	 MNC DH 4050*
5'-5 1/2" 5'-6" 29'-5/16"	 MNC DH 1656	 MNC DH 2056	 MNC DH 2656	 MNC DH 2856	 MNC DH 3056*	 MNC DH 3256*	 MNC DH 3656*	 MNC DH 4056*
5'-11 1/2" 6'-0" 32'-5/16"	 MNC DH 1660	 MNC DH 2060	 MNC DH 2660	 MNC DH 2860	 MNC DH 3060*	 MNC DH 3260*	 MNC DH 3660*	 MNC DH 4060*

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size
 * Units meet most national emergency escape and rescue requirements

NOTE: All measurements are nominal. Elevation charts are not to scale.
 Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

NEW CONSTRUCTION DOUBLE HUNGS | STUDIO UNITS

F.S.	1'-5 1/2"	1'-11 1/2"	2'-5 1/2"	2'-7 1/2"	2'-11 1/2"	3'-5 1/2"	3'-11 1/2"	4'-11 1/2"	5'-11 1/2"
R.O.	1'-6"	2'-0"	2'-6"	2'-8"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"
G.S.	12 7/32"	18 7/32"	24 7/32"	26 7/32"	30 7/32"	36 7/32"	42 7/32"	54 7/32"	66 7/32"
1'-11 1/2" 2'-0" 18 7/32"	MNCSW 1620	MNCSW 2020	MNCSW 2620	MNCSW 2820	MNCSW 3020	MNCSW 3620	MNCSW 4020	MNCSW 5020	MNCSW 6020
2'-5 1/2" 2'-6" 24 7/32"	MNCSW 1626	MNCSW 2026	MNCSW 2626	MNCSW 2826	MNCSW 3026	MNCSW 3626	MNCSW 4026	MNCSW 5026	MNCSW 6026
2'-11 1/2" 3'-0" 30 7/32"	MNCSW 1630	MNCSW 2030	MNCSW 2630	MNCSW 2830	MNCSW 3030	MNCSW 3630	MNCSW 4030	MNCSW 5030	MNCSW 6030
3'-5 1/2" 3'-6" 36 7/32"	MNCSW 1636	MNCSW 2036	MNCSW 2636	MNCSW 2836	MNCSW 3036	MNCSW 3636	MNCSW 4036	MNCSW 5036	MNCSW 6036
3'-11 1/2" 4'-0" 42 7/32"	MNCSW 1640	MNCSW 2040	MNCSW 2640	MNCSW 2840	MNCSW 3040	MNCSW 3640	MNCSW 4040	MNCSW 5040	MNCSW 6040
4'-5 1/2" 4'-6" 48 7/32"	MNCSW 1646	MNCSW 2046	MNCSW 2646	MNCSW 2846	MNCSW 3046	MNCSW 3646	MNCSW 4046	MNCSW 5046	MNCSW 6046
4'-11 1/2" 5'-0" 54 7/32"	MNCSW 1650	MNCSW 2050	MNCSW 2650	MNCSW 2850	MNCSW 3050	MNCSW 3650	MNCSW 4050	MNCSW 5050	MNCSW 6050
5'-5 1/2" 5'-6" 60 7/32"	MNCSW 1656	MNCSW 2056	MNCSW 2656	MNCSW 2856	MNCSW 3056	MNCSW 3656	MNCSW 4056	MNCSW 5056	MNCSW 6056
5'-11 1/2" 6'-0" 66 7/32"	MNCSW 1660	MNCSW 2060	MNCSW 2660	MNCSW 2860	MNCSW 3060	MNCSW 3660	MNCSW 4060	MNCSW 5060	MNCSW 6060

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

NOTE: All measurements are nominal. Elevation charts are not to scale.

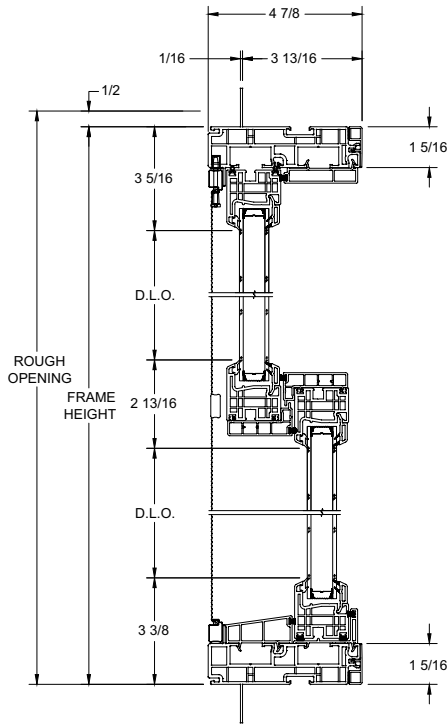
Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

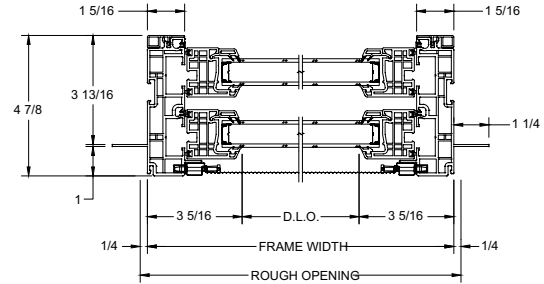
DOUBLE HUNGS | Cross Section Drawings

NEW CONSTRUCTION DOUBLE HUNGS – ALL GLASTRA

Vertical Section

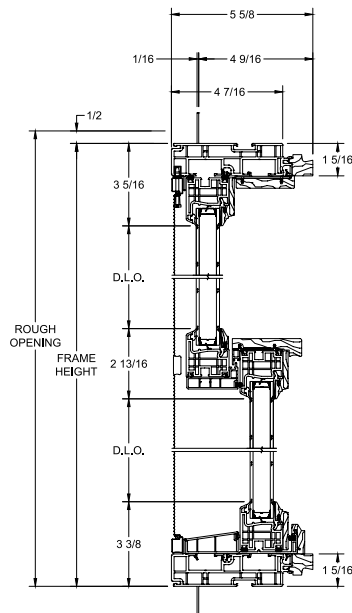


Horizontal Section

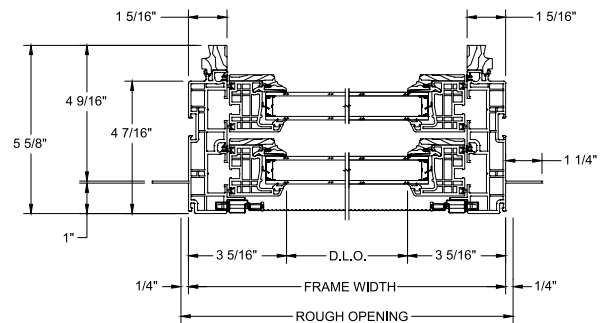


NEW CONSTRUCTION DOUBLE HUNGS – GLASTRA/WOOD

Vertical Section



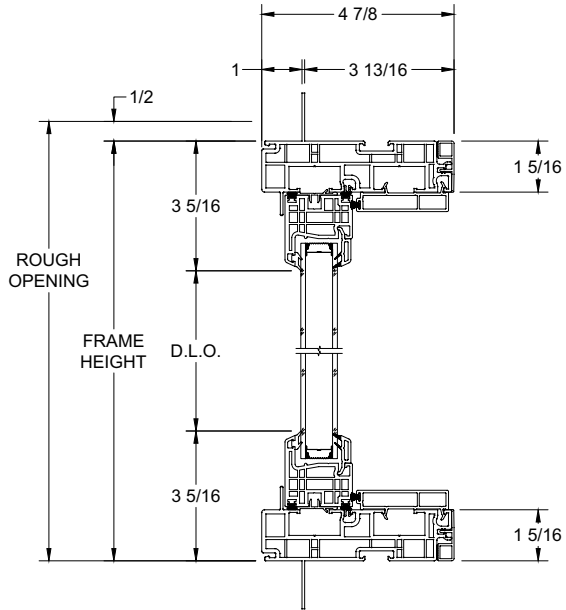
Horizontal Section



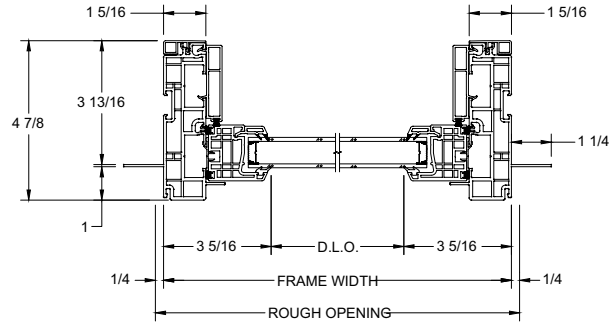
NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

NEW CONSTRUCTION STUDIO WINDOWS – ALL GLASTRA

Vertical Section



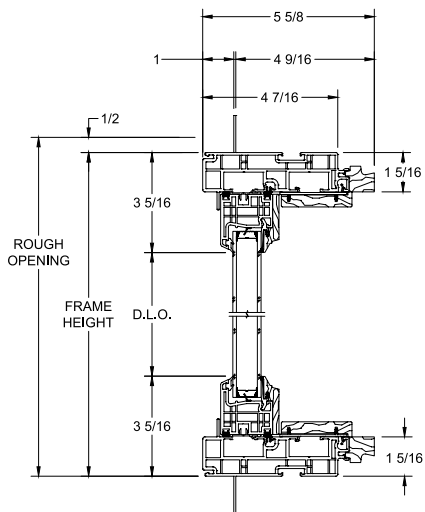
Horizontal Section



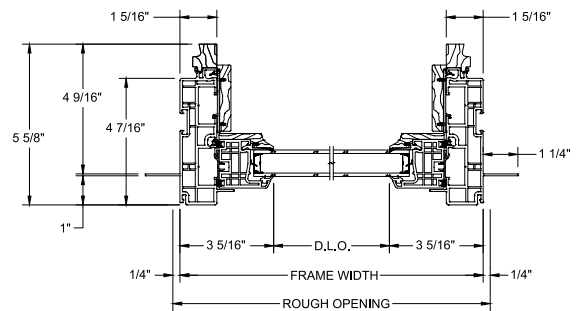
(Shown with optional flush frame filler)

NEW CONSTRUCTION STUDIO WINDOWS – GLASTRA/WOOD

Vertical Section



Horizontal Section

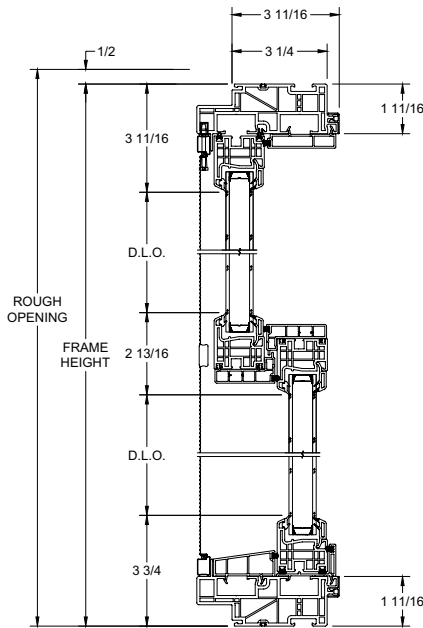


NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

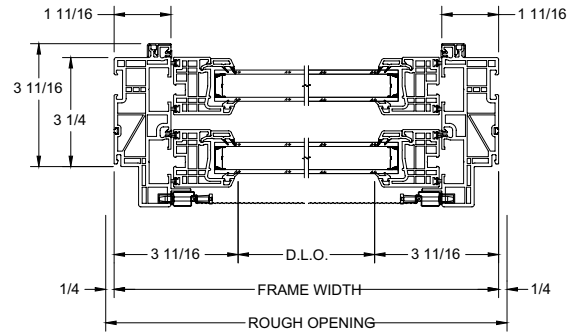
DOUBLE HUNGS | Cross Section Drawings

REPLACEMENT DOUBLE HUNGS – ALL GLASTRA

Vertical Section

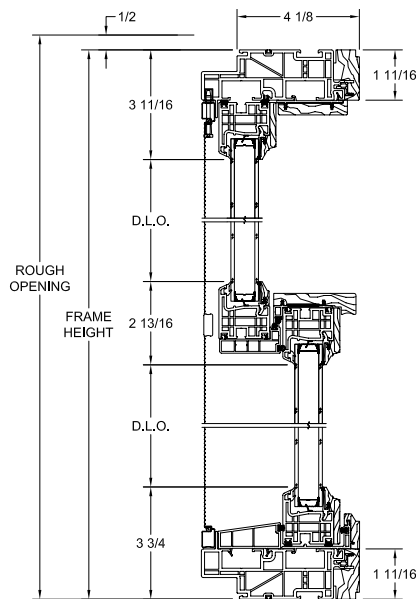


Horizontal Section

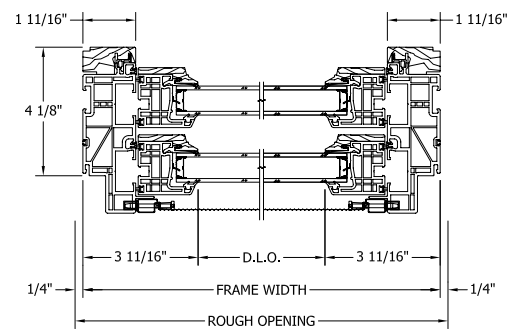


REPLACEMENT DOUBLE HUNGS – GLASTRA/WOOD

Vertical Section



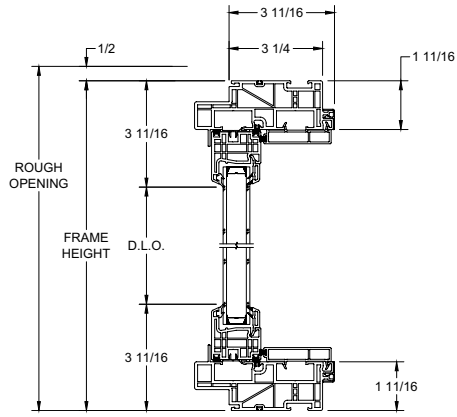
Horizontal Section



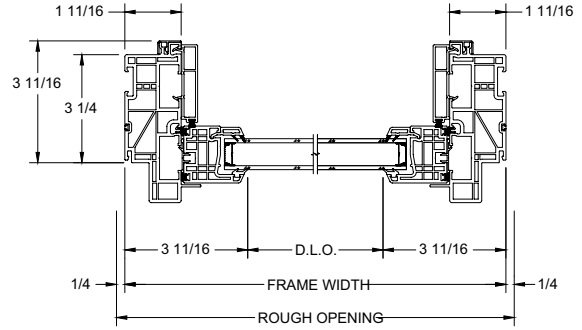
NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

REPLACEMENT STUDIO WINDOWS – ALL GLASTRA

Vertical Section

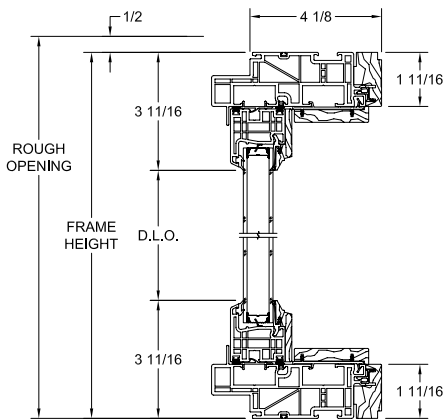


Horizontal Section

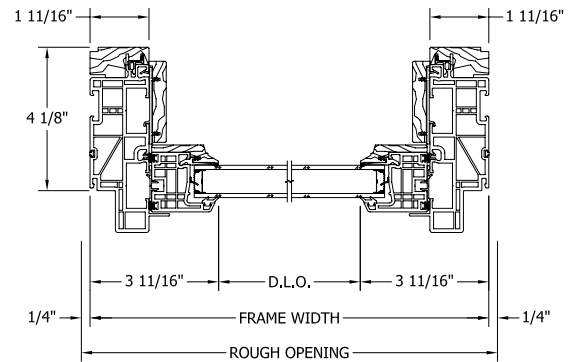


REPLACEMENT STUDIO WINDOWS – GLASTRA/WOOD

Vertical Section



Horizontal Section



NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

SLIDING WINDOWS



SLIDING WINDOW STANDARD FEATURES

- ▶ All Glastra units with Cloud or Sahara integral color (see pg. 58)
- ▶ Flush frame groove filler for drywall return (New Construction - no extension jamb)
- ▶ Available as active-fixed or fixed-active
- ▶ Energy efficient, insulating Solar Low-E glass (see pg. 60)
- ▶ Equal glass sizing provides matching sight lines from sash to sash
- ▶ Dry glazed to the interior with beveled glazing bead
- ▶ Accessory grooves are integral to the extruded frames for the easy addition of accessories
- ▶ Integral 1-1/4" nailing fin provides easier installation and helps seal the window opening (New Construction)
- ▶ Full frame insect screen with BetterVue® fiberglass mesh and Water Shed Technology™ (see screen finishes, pg. 62)
- ▶ Stainless steel rollers for ease-of-operation
- ▶ Sash lock and tilt latches are color matched to the interior (pg. 25)
- ▶ Tilt latches placed at the top of the operable sash for ergonomic removal
- ▶ Pull handle on active sash is color matched to the interior (only on All Glastra units; pg. 25)

NOTE: All measurements are nominal.



**ALL GLASTRA
NEW CONSTRUCTION SLIDING WINDOW**
(interior)



**ALL GLASTRA
NEW CONSTRUCTION SLIDING WINDOW**
(exterior)

BetterVue® and Water Shed Technology™ are registered trademarks of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details.



SLIDING WINDOW OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-airspace

NOTE: All measurements are nominal.

Other Options:

- ▶ Replacement sliding windows
(3-1/4" overall frame depth for All Glastra units, 4-1/8" for Glastra/Wood units)
- ▶ Glastra/Wood: Unfinished pine interior with no visible fasteners or wood exposed to the exterior
- ▶ Latex primed interior* *(Glastra/Wood units, see pg. 59)*
- ▶ Interior prefinishing *(Glastra/Wood units, see pg. 59)*
- ▶ Exterior acrylic film in Midnight or Bronze *(available on All Glastra or Glastra/Wood units; see pg. 58)*
- ▶ Interior acrylic film in Midnight or Bronze *(only on All Glastra units with Midnight or Bronze exterior; see pg. 58)*
- ▶ Multiple trim accessories *(shipped loose; see pg. 63)*
- ▶ Insect screen available with aluminum or UltraVue® mesh *(see screen finishes, pg. 62)*
- ▶ Half screen
- ▶ Extension jambs available in depths up to 9" overall
- ▶ Offset extension jambs
- ▶ Stepped frame groove filler for drywall return *(no extension jamb)*
- ▶ Glastra/Wood: Wood glazing bead receptor
- ▶ Galvanized steel installation clips
- ▶ Window Opening Control Device (WOCD) *(see pg. 62)*
- ▶ Sash limiters for safety *(non by-passable and does not meet WOCD requirements)*
- ▶ Impact performance modifications *(see pg. 65)*

*Latex primer is not a final finish.

HARDWARE (see hardware finishes, pg. 62):

A sash lock and tilt latches are applied to all sliding windows as standard.



SASH LOCK
(shown in Clay)



TILT LATCHES
(shown in Clay)



PULL HANDLE – ALL GLASTRA UNITS
(shown in White)























































Also available: Satin Nickel | White | Matte Black | Rustic Umber

Also available: Clay | Matte Black | Rustic Umber

UltraVue® is a registered trademark of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details. Finish colors will vary from printed images. Please make selections using actual color samples available from your local Kolbe dealer. Not all hardware color options are available on all products.

SLIDING WINDOWS | Elevation Chart

NEW CONSTRUCTION SLIDING WINDOWS

F.S.	2'-11 1/2"	3'-5 1/2"	3'-11 1/2"	4'-5 1/2"	4'-11 1/2"	5'-11 1/2"
R.O.	3'-0"	3'-6"	4'-0"	4'-6"	5'-0"	6'-0"
A-G.S.	14 1/4"	17 1/4"	20 1/4"	23 1/4"	26 1/4"	32 1/4"
F-G.S.	14 1/4"	17 1/4"	20 1/4"	23 1/4"	26 1/4"	32 1/4"
1'-11 1/2" 2'-0" 18 3/32" 18 3/32"	 MNCSL 3020	 MNCSL 3620	 MNCSL 4020	 MNCSL 4620	 MNCSL 5020	 MNCSL 6020
2'-5 1/2" 2'-6" 24 3/32" 24 3/32"	 MNCSL 3026	 MNCSL 3626	 MNCSL 4026	 MNCSL 4626	 MNCSL 5026	 MNCSL 6026
2'-11 1/2" 3'-0" 30 3/32" 30 3/32"	 MNCSL 3030	 MNCSL 3630	 MNCSL 4030	 MNCSL 4630	 MNCSL 5030	 MNCSL 6030*
3'-5 1/2" 3'-6" 36 3/32" 36 3/32"	 MNCSL 3036	 MNCSL 3636	 MNCSL 4036	 MNCSL 4636	 MNCSL 5036*	 MNCSL 6036*
3'-11 1/2" 4'-0" 42 3/32" 42 3/32"	 MNCSL 3040	 MNCSL 3640	 MNCSL 4040	 MNCSL 4640*	 MNCSL 5040*	 MNCSL 6040*
4'-5 1/2" 4'-6" 48 3/32" 48 3/32"	 MNCSL 3046	 MNCSL 3646	 MNCSL 4046	 MNCSL 4646*	 MNCSL 5046*	 MNCSL 6046*
4'-11 1/2" 5'-0" 54 3/32" 54 3/32"	 MNCSL 3050	 MNCSL 3650	 MNCSL 4050	 MNCSL 4650*	 MNCSL 5050*	 MNCSL 6050*
5'-5 1/2" 5'-6" 60 3/32" 60 3/32"	 MNCSL 3056	 MNCSL 3656	 MNCSL 4056	 MNCSL 4656*	 MNCSL 5056*	 MNCSL 6056*
5'-11 1/2" 6'-0" 66 3/32" 66 3/32"	 MNCSL 3060	 MNCSL 3660	 MNCSL 4060	 MNCSL 4660*	 MNCSL 5060*	 MNCSL 6060*

F.S. = Frame Size • R.O. = Rough Opening • A-G.S. = Active Glass Size • F-G.S. = Fixed Glass Size

*Units meet most national emergency escape and rescue requirements

NOTE: All measurements are nominal. Elevation charts are not to scale.

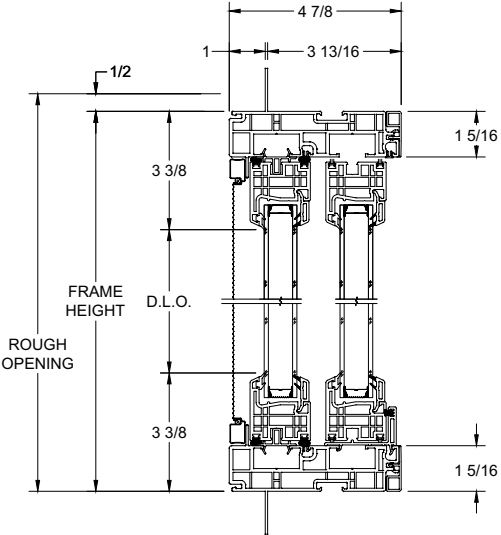
Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. The side jambs of slider units extend above the head jamb; additional space for the rough opening height may be necessary. For rough opening recommendations, see pg. 68.

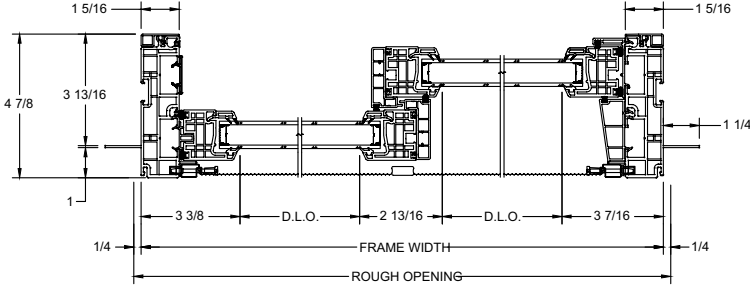
Cross Section Drawings

NEW CONSTRUCTION SLIDING WINDOWS – ALL GLASTRA

Vertical Section



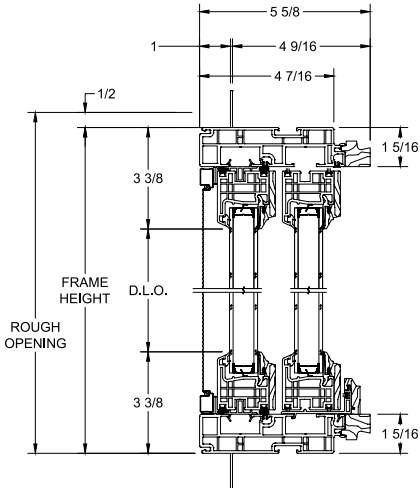
Horizontal Section



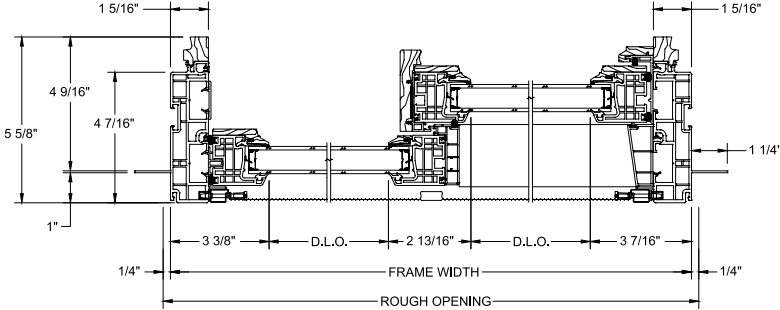
(Shown with optional flush frame filler)

NEW CONSTRUCTION SLIDING WINDOWS – GLASTRA/WOOD

Vertical Section



Horizontal Section

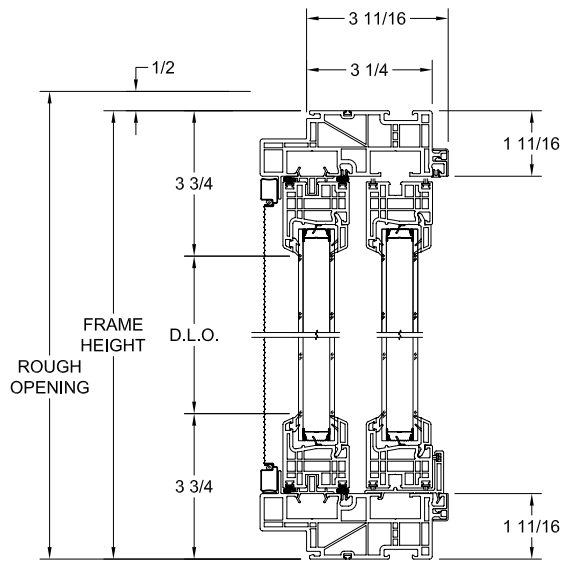


NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

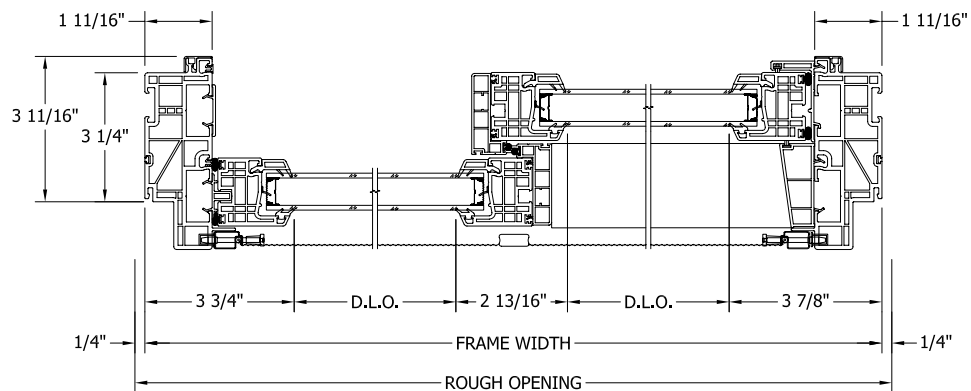
SLIDING WINDOWS | Cross Section Drawings

REPLACEMENT SLIDING WINDOWS – ALL GLASTRA

Vertical Section



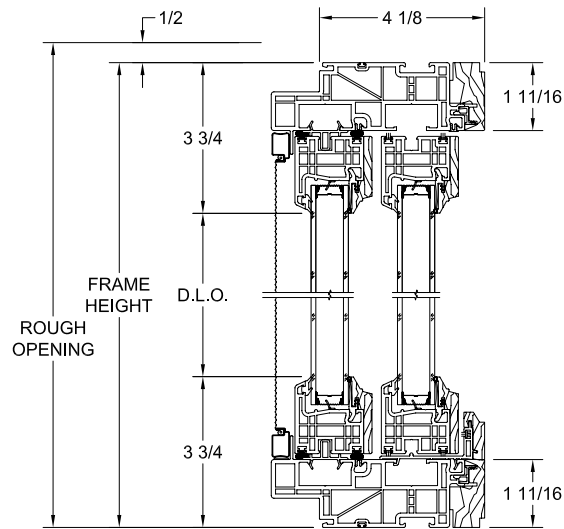
Horizontal Section



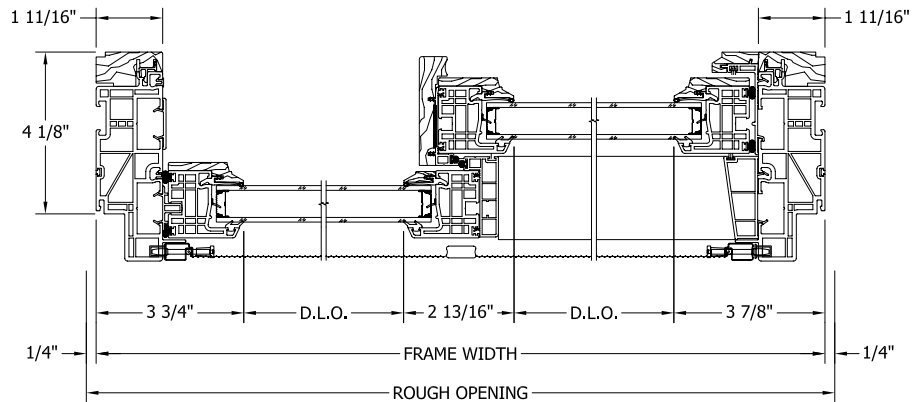
NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

REPLACEMENT SLIDING WINDOWS - GLASTRA/WOOD

Vertical Section



Horizontal Section



NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

DIRECT SETS



DIRECT SET STANDARD FEATURES

- ▶ All Glastra units with Cloud or Sahara integral color (see pg. 58)
- ▶ Casement and double hung direct set profiles available for a pleasing match
- ▶ Flush frame groove filler for drywall return (New Construction - no extension jamb)

- ▶ Units designed to be mulled directly to other Forgent Series products, either in the factory or in the field
- ▶ Energy efficient, insulating Solar Low-E glass (see pg. 60)
- ▶ Dry glazed to the interior with a beveled bead
- ▶ Integral 1-1/4" nailing fin provides easier installation and helps seal the window opening

NOTE: All measurements are nominal.



**ALL GLAstra
CASEMENT DIRECT SET**
(interior)



**ALL GLAstra
CASEMENT DIRECT SET**
(exterior)



DIRECT SET OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-airspace

NOTE: All measurements are nominal.

Other Options:

- ▶ Replacement direct sets in casement and new construction double hung profiles
- ▶ Glastra/Wood: Unfinished pine interior
- ▶ Latex primed interior* (*Glastra/Wood units, see pg. 59*)
- ▶ Interior prefinishing (*Glastra/Wood units, see pg. 59*)
- ▶ Exterior acrylic film in Midnight or Bronze (*available on All Glastra or Glastra/Wood units; see pg. 58*)
- ▶ Interior acrylic film in Midnight or Bronze (*only on All Glastra units with Midnight or Bronze exterior; see pg. 58*)
- ▶ Extension jambs available in depths up to 9" overall
- ▶ Offset extension jambs
- ▶ Stepped frame groove filler for drywall return (*no extension jamb*)
- ▶ Glastra/Wood interior features square wood stops
- ▶ Multiple trim accessories (*shipped loose; see pg. 63*)
- ▶ Galvanized steel installation clips
- ▶ Impact performance modifications (*see pg. 65*)

*Latex primer is not a final finish.

GEOMETRIC & RADIUS DIRECT SETS



GEOMETRIC & RADIUS DIRECT SET STANDARD FEATURES

- ▶ All Glastra units with Cloud or Sahara integral color (see pg. 58)
- ▶ Flush frame groove filler for drywall return (New Construction - no extension jamb)
- ▶ Units designed to be mulled directly to other Forgent Series products, either in the factory or in the field
- ▶ Energy efficient, insulating Solar Low-E glass (see pg. 60)
- ▶ Dry glazed to the interior with a beveled bead

NOTE: All measurements are nominal.

- ▶ Integral 1-1/4" nailing fin provides easier installation and helps seal the window opening
- ▶ Standard radius shapes include: quarter circle, half circle, full circle, segment, quarter segment, with or without legs (see specialty shapes, pg. 38)
- ▶ Standard geometric shapes include: pentoid, trapezoid, right triangle, isosceles triangle, clipped corner, double clipped corner, octagon (see specialty shapes, pg. 38)



**GLAstra/WOOD
CASEMENT DIRECT SET**
(interior)



**GLAstra/WOOD
CASEMENT DIRECT SET**
(exterior)



GEOMETRIC & RADIUS DIRECT SET OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-airspace

NOTE: All measurements are nominal.

Other Options:

- ▶ Replacement direct sets in casement and new construction double hung profiles
- ▶ Casement and double hung direct set profiles available for a pleasing match
- ▶ Glastra/Wood: Unfinished pine interior
- ▶ Latex primed interior* (Glastra/Wood units, see pg. 59)
- ▶ Interior prefinishing (Glastra/Wood units, see pg. 59)
- ▶ Exterior acrylic film in Midnight or Bronze (available on All Glastra or Glastra/Wood units; see pg. 58)
- ▶ Interior acrylic film in Midnight or Bronze (only on All Glastra units with Midnight or Bronze exterior; see pg. 58)
- ▶ Extension jambs available in depths up to 9" overall
- ▶ Offset extension jambs
- ▶ Stepped frame groove filler for drywall return (no extension jamb)
- ▶ Glastra/Wood interior features square wood stops
- ▶ Multiple trim accessories (shipped loose; see pg. 63)
- ▶ Galvanized steel installation clips
- ▶ Impact performance modifications (see pg. 65)

*Latex primer is not a final finish.

DIRECT SETS | Elevation Chart

CASEMENT PROFILE DIRECT SETS

U.D.	1' 5-1/2"	1' 11-1/2"	2' 5-1/2"	2' 11-1/2"	3' 5-1/2"	3' 11-1/2"	4' 11-1/2"	5' 11-1/2"
R.O.	1' 6"	2' 0"	2' 6"	3' 0"	3' 6"	4' 0"	5' 0"	6' 0"
G.S.	14 13/16"	20 13/16"	26 13/16"	32 13/16"	38 13/16"	44 13/16"	56 13/16"	68 13/16"
1' 1/2"	MCST 1610	MCST 2010	MCST 2610	MCST 3010	MCST 3610	MCST 4010	MCST 5010	MCST 6010
1' 5-1/2"	MCST 1616	MCST 2016	MCST 2616	MCST 3016	MCST 3616	MCST 4016	MCST 5016	MCST 6016
1' 11-1/2"	MCST 1620	MCST 2020	MCST 2620	MCST 3020	MCST 3620	MCST 4020	MCST 5020	MCST 6020
2' 5-1/2"	MCST 1626	MCST 2026	MCST 2626	MCST 3026	MCST 3626	MCST 4026	MCST 5026	MCST 6026
2' 11-1/2"	MCST 1630	MCST 2030	MCST 2630	MCST 3030	MCST 3630	MCST 4030	MCST 5030	MCST 6030
3' 5-1/2"	MCST 1636	MCST 2036	MCST 2636	MCST 3036	MCST 3636	MCST 4036	MCST 5036	MCST 6036
3' 11-1/2"	MCST 1640	MCST 2040	MCST 2640	MCST 3040	MCST 3640	MCST 4040	MCST 5040	MCST 6040
4' 5-1/2"	MCST 1646	MCST 2046	MCST 2646	MCST 3046	MCST 3646	MCST 4046	MCST 5046	MCST 6046
4' 11-1/2"	MCST 1650	MCST 2050	MCST 2650	MCST 3050	MCST 3650	MCST 4050	MCST 5050	MCST 6050
5' 5-1/2"	MCST 1656	MCST 2056	MCST 2656	MCST 3056	MCST 3656	MCST 4056	MCST 5056	MCST 6056
5' 11-1/2"	MCST 1660	MCST 2060	MCST 2660	MCST 3060	MCST 3660	MCST 4060	MCST 5060	MCST 6060

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

NOTE: All measurements are nominal. Elevation charts are not to scale.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

NEW CONSTRUCTION DOUBLE HUNG PROFILE DIRECT SETS

F.S.	1'-5 1/2"	1'-11 1/2"	2'-5 1/2"	2'-7 1/2"	2'-11 1/2"	3'-5 1/2"	3'-11 1/2"	4'-11 1/2"	5'-11 1/2"
R.O.	1'-6"	2'-0"	2'-6"	2'-8"	3'-0"	3'-6"	4'-0"	5'-0"	6'-0"
G.S.	14 19/32"	20 19/32"	26 19/32"	28 19/32"	32 19/32"	38 19/32"	44 19/32"	55 19/32"	68 19/32"
1'-5 1/2"	MNCDST 1616	MNCDST 2016	MNCDST 2616	MNCDST 2816	MNCDST 3016	MNCDST 3616	MNCDST 4016	MNCDST 5016	MNCDST 6016
1'-11 1/2"	MNCDST 1620	MNCDST 2020	MNCDST 2620	MNCDST 2820	MNCDST 3020	MNCDST 3620	MNCDST 4020	MNCDST 5020	MNCDST 6020
2'-5 1/2"	MNCDST 1626	MNCDST 2026	MNCDST 2626	MNCDST 2826	MNCDST 3026	MNCDST 3626	MNCDST 4026	MNCDST 5026	MNCDST 6026
2'-11 1/2"	MNCDST 1630	MNCDST 2030	MNCDST 2630	MNCDST 2830	MNCDST 3030	MNCDST 3630	MNCDST 4030	MNCDST 5030	MNCDST 6030
3'-5 1/2"	MNCDST 1636	MNCDST 2036	MNCDST 2636	MNCDST 2836	MNCDST 3036	MNCDST 3636	MNCDST 4036	MNCDST 5036	MNCDST 6036
3'-11 1/2"	MNCDST 1640	MNCDST 2040	MNCDST 2640	MNCDST 2840	MNCDST 3040	MNCDST 3640	MNCDST 4040	MNCDST 5040	MNCDST 6040
4'-5 1/2"	MNCDST 1646	MNCDST 2046	MNCDST 2646	MNCDST 2846	MNCDST 3046	MNCDST 3646	MNCDST 4046	MNCDST 5046	MNCDST 6046
4'-11 1/2"	MNCDST 1650	MNCDST 2050	MNCDST 2650	MNCDST 2850	MNCDST 3050	MNCDST 3650	MNCDST 4050	MNCDST 5050	MNCDST 6050
5'-5 1/2"	MNCDST 1656	MNCDST 2056	MNCDST 2656	MNCDST 2856	MNCDST 3056	MNCDST 3656	MNCDST 4056	MNCDST 5056	MNCDST 6056
5'-11 1/2"	MNCDST 1660	MNCDST 2060	MNCDST 2660	MNCDST 2860	MNCDST 3060	MNCDST 3660	MNCDST 4060	MNCDST 5060	MNCDST 6060

F.S. = Frame Size • R.O. = Rough Opening • G.S. = Glass Size

NOTE: All measurements are nominal. Elevation charts are not to scale.

The units shown are stand-alone units. Adjustments may be required when stacking over other units; adjustments will be made in the factory.

Divided lites are optional.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

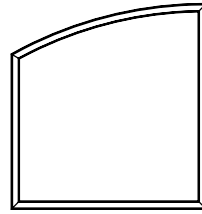
DIRECT SETS | Specialty Shapes



Segment



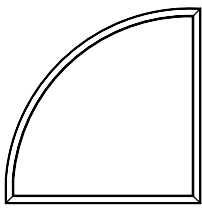
Segment
w/o legs



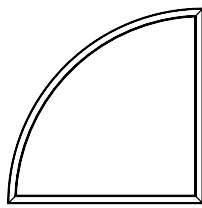
Quarter
Segment



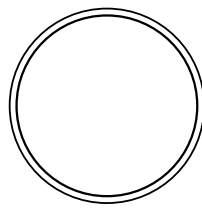
Quarter Segment
w/o legs



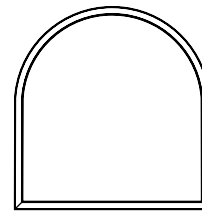
Quarter
Circle



Quarter Circle
w/o legs



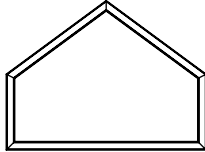
Full Circle*



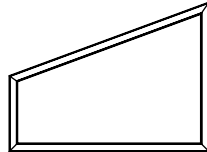
Half Circle



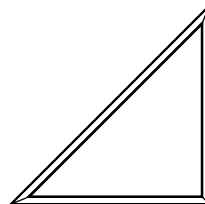
Half Circle
w/o legs



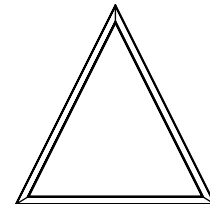
Pentoid



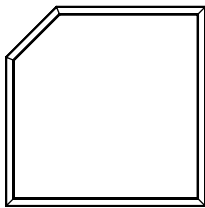
Trapezoid



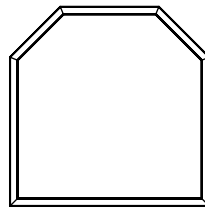
Right Triangle



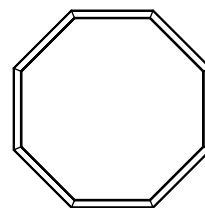
Isosceles Triangle



Clipped Corner



Double Clipped
Corner



Octagon

*Full Circle is only available in All Glastra.







© Bryan Walters

FORGENT COMPLEMENTARY DOORS

In addition to various window styles, the Forgent Series also includes complementary swinging and sliding doors. These doors complement other Forgent Series products, and offer the same aesthetic options and lead times, so builders can get all of the windows and doors needed for their project.



COMPLEMENTARY SLIDING DOORS

ALL GLASTRA | GLASTRA/WOOD



SLIDING DOOR STANDARD FEATURES – COMPLEMENT ALL GLASTRA UNITS

- ▶ Cloud or Sahara interior and exterior color (see pg. 58)
- ▶ Standard jamb width is 5-15/16" (4-9/16" behind the nailing fin)
- ▶ Energy efficient, tempered Solar Low-E glass (see pg. 60)
- ▶ Dry glazed to the interior
- ▶ Accessory grooves are integral to the extruded frames for easy addition of accessories
- ▶ Frame setup for 2-wide doors
- ▶ Equal glass sizing provides matching sight lines from panel to panel
- ▶ Steel panel reinforcement for rigidity
- ▶ Stainless steel panel rollers
- ▶ Insect screen with BetterVue® fiberglass mesh and Water Shed Technology™ in extruded aluminum frame
- ▶ Allure dual-point handle set in White
- ▶ Low-profile, aluminum-capped self-draining sill in Bronze anodized

SLIDING DOOR OPTIONS – COMPLEMENT ALL GLASTRA UNITS

Glass (see full list, pg. 60)

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-air-space

NOTE: All measurements are nominal.

Other Options:

- ▶ Exterior acrylic film in Midnight or Bronze (see pg. 58)
- ▶ Interior acrylic film in Midnight or Bronze (only on All Glastra units with Midnight or Bronze exterior; see pg. 58)
- ▶ Signature handle set
- ▶ Square handle set
- ▶ Secondary security lock (foot bolt)
- ▶ Galvanized steel installation clips
- ▶ Impact performance modifications (see pg. 65)
- ▶ Three-point lock mechanism

HARDWARE – COMPLEMENT ALL GLASTRA UNITS (see hardware finishes, pg. 62):

Allure, Signature, and Square handle sets are available for sliding doors in the finishes below.



ALLURE HANDLE SET

(shown in White)
Standard on All Glastra

Also available: Clay



SIGNATURE HANDLE SET

(shown in Satin Nickel PVD¹)

Also available: Matte Black | Rustic Umber



SQUARE HANDLE SET

(shown in Satin Nickel PVD¹)

Also available: White | Matte Black | Rustic Umber

*PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling and cracking. Finish colors will vary from printed images. Please make selections using actual color samples available from your local Kolbe dealer. Not all hardware color options are available on all products.

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SLIDING DOOR STANDARD FEATURES – COMPLEMENT GLASTRA/WOOD UNITS

- ▶ Extruded aluminum alloy clad frame and panel
- ▶ Frame corners are mitered or profile cut, with internal corner and end keys
- ▶ Unfinished pine interior, with pine interior stops and wood mull casings on mull units
- ▶ Exterior wood parts are treated
- ▶ Standard jamb width is 4-9/16"
- ▶ 3" wide stiles and rails
- ▶ Frame set up
- ▶ Energy efficient, tempered Solar Low-E glass (see pg. 60)
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ Accessory grooves are integral to the extruded frames for easy addition of accessories
- ▶ Tandem rollers with adjustable, ball-bearing wheels carry the sliding panel
- ▶ Insect screen BetterVue® fiberglass mesh and Water Shed Technology™ in extruded aluminum frame
- ▶ Multi-point handle set with bell escutcheon in Bright Brass PVD*
- ▶ One-piece, pultruded fiberglass sill with continuous aluminum sill nosing and fiberglass sill filler
- ▶ Thick oak interior threshold
- ▶ Heavy vinyl nailing fins with head drip caps

Limited sizes are available.

SLIDING DOOR OPTIONS – COMPLEMENT GLASTRA/WOOD UNITS

Glass (see full list, pg. 60):

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-air-space

Other Options:

- ▶ Latex primed interior** (see pg. 59)
- ▶ Interior prefinishing (see pg. 59)
- ▶ Midnight or Bronze exterior color (see pg. 58)
- ▶ Extruded aluminum accessories applied to accessory grooves on the exterior frame (see pg. 63)

NOTE: All measurements are nominal.

**Latex primer is not a final finish.

Other Options (continued)

- ▶ Multi-point handle set with arch escutcheon
- ▶ Single-point Allure handle set
- ▶ Keyed lock
- ▶ Secondary security lock
- ▶ Corrosion-resistant hardware
- ▶ Insect screen with UltraVue® fiberglass mesh or aluminum mesh (see pg. 62)
- ▶ Extension jambs in a wide variety of sizes (shipped loose for field application)
- ▶ Galvanized steel installation clips
- ▶ Impact performance modifications (see pg. 65)

HARDWARE – COMPLEMENT GLASTRA/WOOD UNITS (see hardware finishes, pg. 62):

Multi-point handle sets with bell and arch escutcheons, and single-point Allure handle sets are available for sliding doors in the finishes below.



**BELL ESCUTCHEON
HANDLE SET**

(shown in Bright Brass PVD¹)
Standard on Glastra/Wood



**ARCH ESCUTCHEON
HANDLE SET**

(shown in Bright Brass PVD¹)



**ALLURE
HANDLE SET**

(shown in Satin Nickel)



**SINGLE-POINT
HANDLE**

(shown in Satin Nickel)

Also available:
Satin Nickel PVD¹ | Smoky Gray PVD¹
Matte Black | Rustic Umber

Also available:
White | Matte Black | Rustic Umber
















Also available:
Bright Brass | Matte Black
Rustic Umber

*PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling and cracking. Finish colors will vary from printed images. Please make selections using actual color samples available from your local Kolbe dealer. Not all hardware color options are available on all products.

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SLIDING DOORS | Elevation Charts

SLIDING DOORS – COMPLEMENT ALL GLASTRA UNITS

U.D.	4' 11-1/2"	5' 11-1/2"	7' 11-1/2"	8' 11-1/2"	11' 11-1/2"
R.O.	5' 0"	6' 0"	8' 0"	9' 0"	12' 0"
G.S.	24 5/8"	30 5/8"	42 5/8"	30 5/16"	31 1/8"
6' 7-1/2" 6' 8" 70"					
	V4PD 5068	V4PD 6068	V4PD 8068	V4PD 9068	V4PD 12068
6' 9-1/2" 6' 10" 72"					
	V4PD 50610	V4PD 60610	V4PD 80610	V4PD 90610	V4PD 120610
7' 11-1/2" 8' 0" 92"					
	V4PD 5080	V4PD 6080	V4PD 8080	V4PD 9080	V4PD 12080

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per panel.)













NOTE: All measurements are nominal. Elevation charts are not to scale.

Divided lites are optional. The configuration shown for a single panel is typical for each panel.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

SLIDING DOORS – COMPLEMENT GLASTRA/WOOD UNITS

U.D.	4' 11"	5' 11"	7' 11"	7' 7"	9' 1"	12' 1"
R.O.	4' 11-1/2"	5' 11-1/2"	7' 11-1/2"	7' 7-1/2"	9' 1-1/2"	12' 1-1/2"
G.S.	24 3/4"	30 3/4"	42 3/4"	24 3/4"	30 3/4"	42 3/4"

6' 7-1/2"	6' 8"	72 1/16"						
			GAU41166M	GAU51166M	GAU71166M	GAU7766M	GAU9166M	GAU12166M
7' 11-1/2"	8' 0"	88 1/16"						
			GAU41180M	GAU51180M	GAU71180M	GAU7780M	GAU9180M	GAU12180M

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size (Glass sizes are shown per panel.)

NOTE: All measurements are nominal. Elevation charts are not to scale.

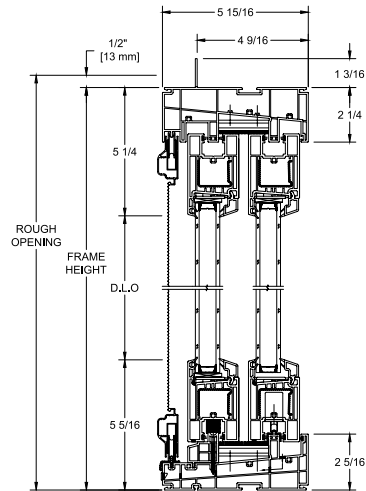
Divided lites are optional. The configuration shown for a single panel is typical for each panel.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

SLIDING DOORS | Cross Section Drawings

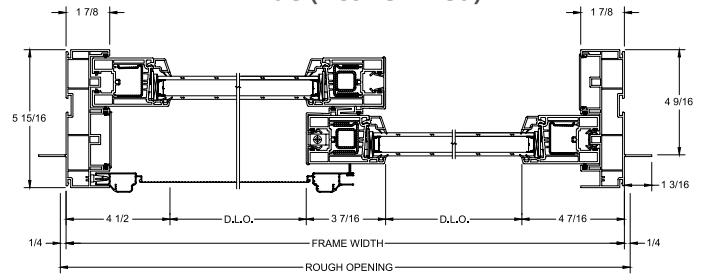
SLIDING DOORS – COMPLEMENT ALL GLASTRA UNITS

Vertical Section

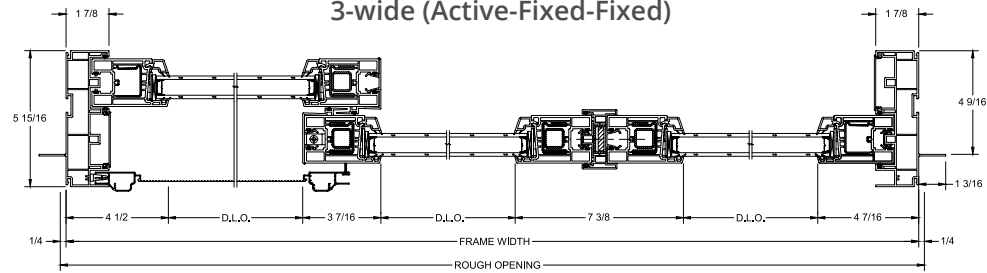


Horizontal Section

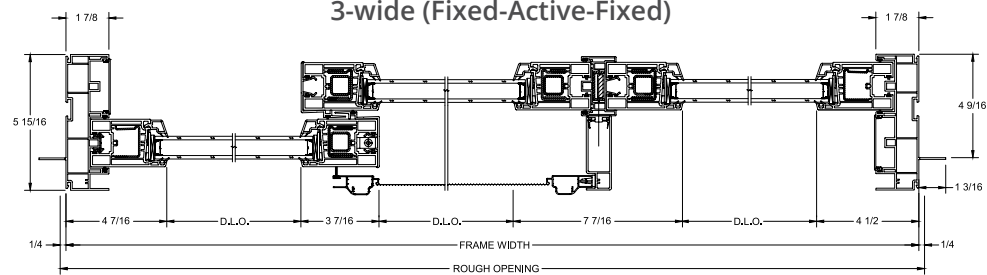
2-wide (Active-Fixed)



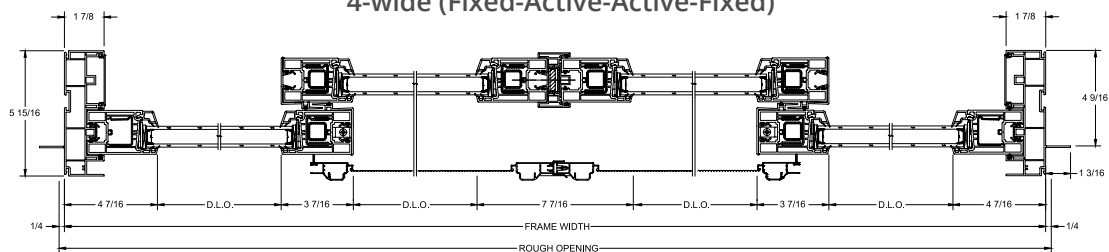
3-wide (Active-Fixed-Fixed)



3-wide (Fixed-Active-Fixed)



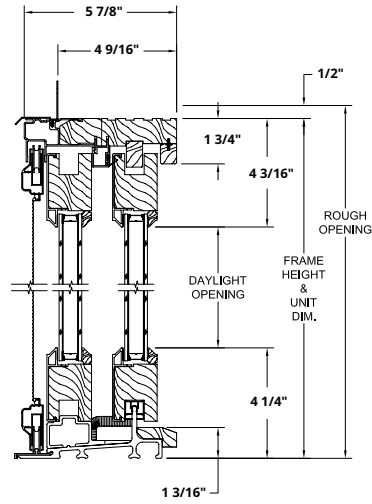
4-wide (Fixed-Active-Active-Fixed)



NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

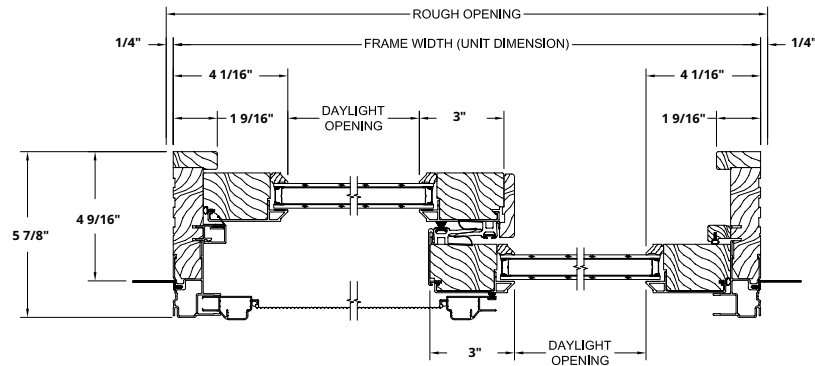
SLIDING DOORS – COMPLEMENT GLASTRA/WOOD UNITS

Vertical Section

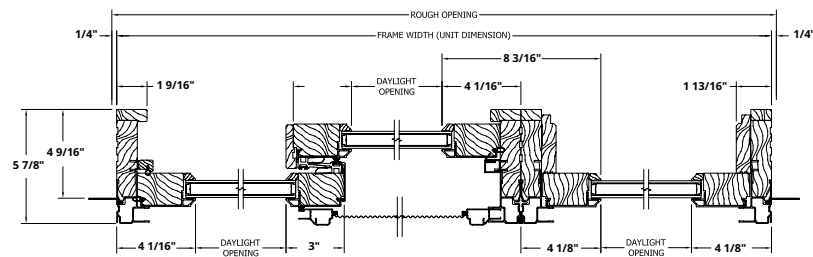


Horizontal Section

2-wide



3-wide



NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

COMPLEMENTARY INSWING DOORS



COMPLEMENTARY INSWING DOOR STANDARD FEATURES

- ▶ Extruded aluminum alloy clad frame and panel
- ▶ Frame corners are mitered or profile cut, with internal corner and end keys
- ▶ Cloud or Sahara exterior color (*see pg. 58*)
- ▶ Unfinished pine interior with pine interior stops and wood mull casings on mull units
- ▶ Exterior wood parts are treated
- ▶ Standard jamb width is 4-9/16"
- ▶ Stiles and top rails are a nominal 4-5/8" wide; bottom rail is a nominal 7-9/16" high
- ▶ Energy efficient, tempered Solar Low-E glass (*see pg. 60*)
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ Accessory grooves are integral to the extruded frames for easy addition of accessories
- ▶ Sliding screen* with BetterVue® fiberglass mesh and Water Shed Technology™ in extruded aluminum frame to match the exterior
- ▶ Stainless steel multi-point locking hardware on single door panels; French doors have a multi-point lock on the active panel and a dual-point lock on the less active panel
- ▶ Toronto handle set in Bright Brass PVD** (*pg. 49*)
- ▶ Adjustable hinges in Gold Painted (*pg. 49*)
- ▶ Bronze anodized aluminum self-draining sill with an oak interior threshold
- ▶ Heavy vinyl nailing fins with head drip caps
- ▶ Full lite only

NOTE: All measurements are nominal.

*A sliding screen is available only on two-panel doors with one stationary and one active panel.

**PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling and cracking. BetterVue® and Water Shed Technology™ are registered trademarks of PHIFER INCORPORATED. Limitations may apply. Please consult your local Kolbe dealer for more details.



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COMPLEMENTARY INSWING DOOR OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-airspace

NOTE: All measurements are nominal.

HARDWARE (see hardware finishes, pg. 62):

Toronto and München lever style handle sets with adjustable hinges and multi-point locks are available for inswing doors. Single point locks and keyed handle sets are optional.



TORONTO HANDLE SET
(shown in Bright Brass PVD¹)
Standard



MÜNCHEN HANDLE SET
(shown in Bright Brass PVD¹)



ADJUSTABLE HINGES
(shown in Gold Painted)
Standard

Also available: Satin Nickel PVD¹ | Smoky Gray PVD¹ | Matte Black | Rustic Umber

¹PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling and cracking. Finish colors will vary from printed images. Please make selections using actual color samples available from your local Kolbe dealer. Not all hardware color options are available on all products.

INSWING DOORS | Elevation Chart

COMPLEMENTARY INSWING DOORS

U.D.	2' 6-1/4"	3' 1/4"	4' 11-7/16"	4' 11-7/16"	4' 11-7/16"	5' 11-7/16"	5' 11-7/16"	5' 11-7/16"
R.O.	2' 6-3/4"	3' 3/4"	4' 11-15/16"	4' 11-15/16"	4' 11-15/16"	5' 11-15/16"	5' 11-15/16"	5' 11-15/16"
G.S.	20 5/16"	26 5/16"	20 5/16"	20 5/16"	20 5/16"	26 5/16"	26 5/16"	26 5/16"
6' 7-1/2" 6' 8" 65 11/16"								
7' 11-1/32" 8' 0" 81 11/16"								

Operation is viewed from the interior.

U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

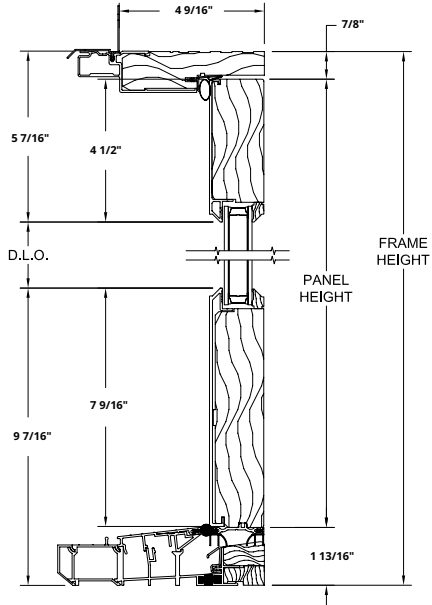
NOTE: All measurements are nominal. Elevation charts are not to scale. Operation is viewed from the interior. When ordering, specify inswing. If you are ordering a single unit, specify stationary, hinged left or hinged right. Double-wide doors are also available as French units, with no fixed astragal between the door panels. Specify French when ordering.

Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

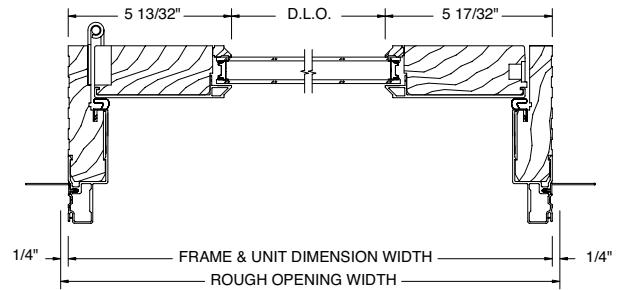
Cross Section Drawings

COMPLEMENTARY INSWING DOORS

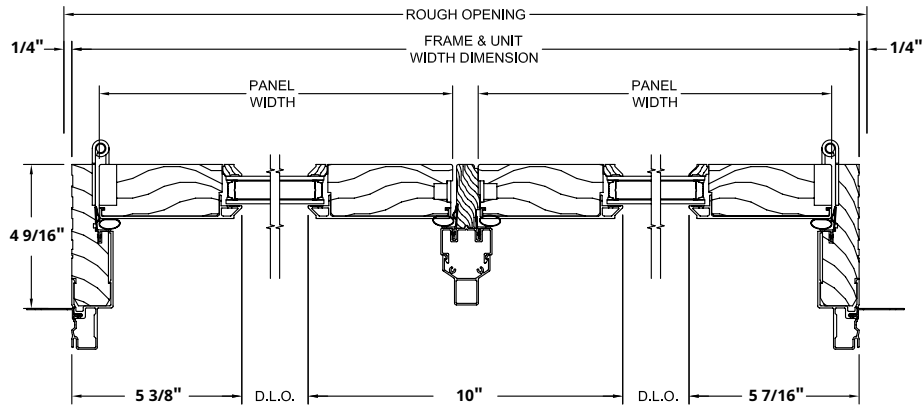
Vertical Section



Horizontal Section



COMPLEMENTARY INSWING FRENCH DOORS



NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com

COMPLEMENTARY OUTSWING DOORS



COMPLEMENTARY OUTSWING DOOR STANDARD FEATURES

- ▶ Extruded aluminum alloy clad frame and panel
- ▶ Frame corners are mitered or profile cut, with internal corner and end keys
- ▶ Cloud or Sahara exterior color (*see pg. 58*)
- ▶ Unfinished pine interior, with pine interior stops and wood mull casings on mull units
- ▶ Exterior wood parts are treated
- ▶ Standard jamb width is 4-9/16"
- ▶ Stiles and top rails are 4-5/8" wide; bottom rail is 7-9/16" high
- ▶ Energy efficient, tempered Solar Low-E glass (*see pg. 60*)
- ▶ Glazed to the interior with beveled wood glazing beads
- ▶ Accessory grooves are integral to the extruded frames for easy addition of accessories
- ▶ Stainless steel multi-point locking hardware on single door panels; French doors have a multi-point lock on the active panel and a dual-point lock on the less active panel
- ▶ Toronto handle set in Bright Brass PVD* (*pg. 53*)
- ▶ Adjustable hinges in Gold Painted (*pg. 53*)
- ▶ Bronze anodized aluminum bumper sill with an oak interior threshold
- ▶ Heavy vinyl nailing fins with head drip caps
- ▶ Full lite only

NOTE: All measurements are nominal.
Limited sizes are available.

*PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling and cracking.



COMPLEMENTARY OUTSWING DOOR OPTIONS

Glass (see pg. 60):

- ▶ Solar Gain Low-E
- ▶ Solar Control Low-E
- ▶ Solar Advanced Control Low-E
- ▶ Turtle Glass
- ▶ ThermaPlus™ Low-E
- ▶ Neat+™
- ▶ Triple pane
- ▶ Tinted, colored or patterned
- ▶ Tempered
- ▶ Laminated
- ▶ Preserve® Film
- ▶ Other options standard to the industry

Divided Lites (see pg. 61):

- ▶ Performance divided lites with 7/8", 1-1/8" or 2-1/4" bars
- ▶ Grilles-in-the-air-space

NOTE: All measurements are nominal.

HARDWARE (see hardware finishes, pg. 62):

Toronto and München lever style handle sets with adjustable hinges and multi-point locks are available for outswing doors. Single point locks and keyed handle sets are optional.



TORONTO HANDLE SET
(shown in Bright Brass PVD[†])
Standard



MÜNCHEN HANDLE SET
(shown in Bright Brass PVD[†])



ADJUSTABLE HINGES
(shown in Gold Painted)
Standard

Also available: Satin Nickel PVD[†] | Smoky Gray PVD[†] | Matte Black | Rustic Umber

[†]PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the finish from tarnishing, peeling and cracking. Printed images of hardware finishes will vary from actual colors. Not all hardware color options are available on all products. Selections should be made based on color samples available from your Kolbe dealer.

OUTSWING DOORS | Elevation Chart

COMPLEMENTARY OUTSWING DOORS

U.D.	2' 6-9/32"	3' 9/32"	4' 11"	4' 11"	4' 11"	5' 11"	5' 11"	5' 11"
R.O.	2' 6-25/32"	3' 25/32"	4' 11-1/2"	4' 11-1/2"	4' 11-1/2"	5' 11-1/2"	5' 11-1/2"	5' 11-1/2"
G.S.	19 3/4"	25 3/4"	19 3/4"	19 3/4"	19 3/4"	25 3/4"	25 3/4"	25 3/4"
6' 7 1/2" 6' 8" 65 11/16"								
	UXD2666M	UXD3066M	UXD41166M	UXD41166M	UXD41166M	UXD51166M	UXD51166M	UXD51166M
7' 11-1/2" 8' 0" 81 13/16"								
	UXD2680M	UXD3080M	UXD41180M	UXD41180M	UXD41180M	UXD51180M	UXD51180M	UXD51180M

Operation is viewed from the exterior.

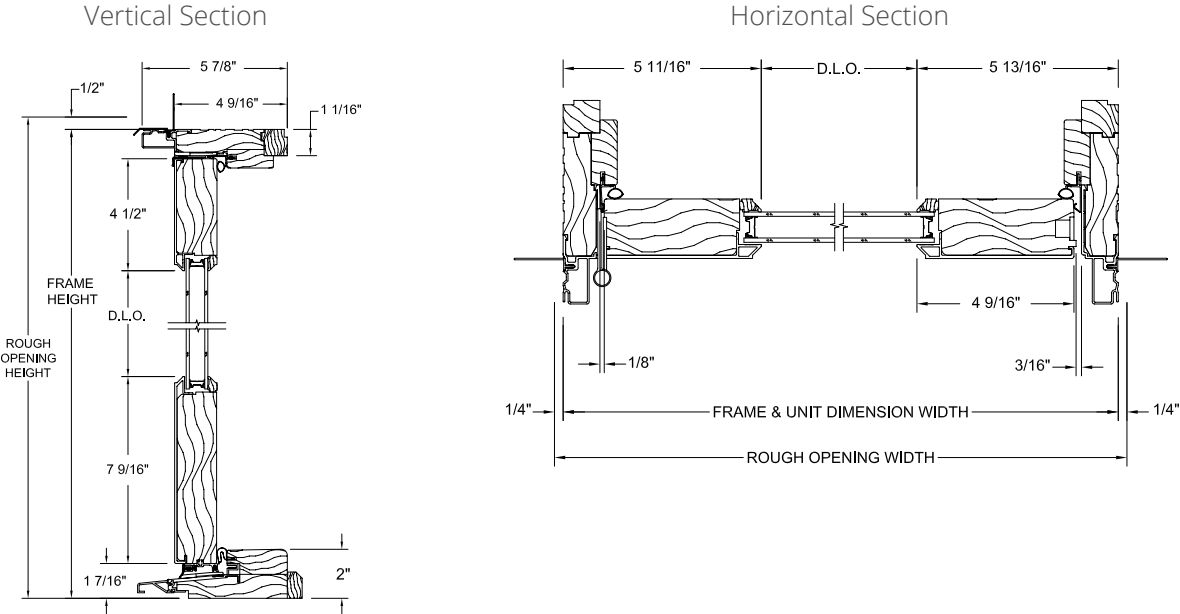
U.D. = Unit Dimension • R.O. = Rough Opening • G.S. = Glass Size

NOTE: All measurements are nominal. Elevation charts are not to scale.

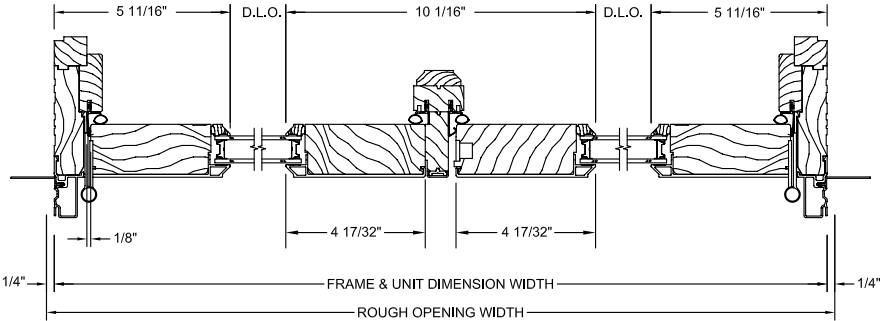
Some installation procedures will require a larger rough opening than noted (i.e. installations utilizing our installation clips), therefore, you may need to increase the rough opening size accordingly. Rough opening gaps may be increased up to a maximum of 1/2" on all sides and still be within good practice guidelines. For rough opening recommendations, see pg. 68.

Cross Section Drawings

COMPLEMENTARY OUTSWING DOORS



COMPLEMENTARY OUTSWING FRENCH DOORS



NOTE: Drawings are not to scale. For Forgent Series accessory drawings, see pg. 63. Additional and the most current drawings are available at kolbewindows.com





OPTIONS & ACCESSORIES

Our windows and doors are built to order, so you can choose the options that best suit the design and vision of your project. We offer glass, divided lite, hardware and trim options, as well as popular interior and exterior finishes. Forgent Series windows and doors not only provide superior performance and flexibility, they also meet and exceed the highest standards for energy efficiency.



FINISH OPTIONS

EXTERIOR FINISHES - ALL GLASTRA & GLASTRA/WOOD UNITS

Forgent Series windows and doors have a durable and resilient Glastra exterior. Cloud and Sahara are integral to the Glastra material, while Midnight and Bronze are applied as an acrylic film.*

Forgent Series exterior films (Midnight and Bronze) are compliant with and have achieved 307-16 certification from the American Architectural Manufacturers Association (AAMA). The AAMA 307-16 designation specifically refers to Voluntary Specifications for Laminates Intended for Use on AAMA Certified Profiles.

*See more film details on pg. 7





© Spacecrafting Photography,
Denali Custom Homes, Redstone Interiors

© Photo courtesy Adamo Homes

INTERIOR FINISHES - ALL GLASTRA UNITS

Coordinating finishes are available for Glastra interiors; however, the Midnight or Bronze interior finish is only available on units with a Midnight or Bronze exterior, respectively. Ask your Kolbe dealer for details.

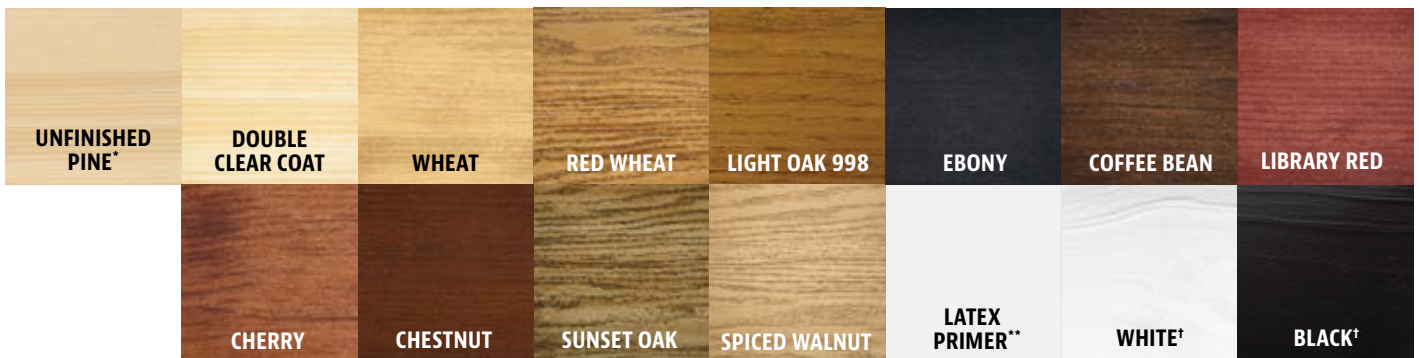
Forgent Series exterior films (Midnight and Bronze) are compliant with and have achieved 307-16 certification from the American Architectural Manufacturers Association (AAMA). The AAMA 307-16 designation specifically refers to Voluntary Specifications for Laminates Intended for Use on AAMA Certified Profiles.

*See more film details on pg. 7



INTERIOR FINISHES – GLASTRA/WOOD UNITS

Forgent Series Glastra/Wood windows and doors are offered with a Pine interior. For units that are ready to install upon delivery, Forgent Series windows and doors can be prefinished on the interior with one of the water-based stains or paints shown. Stained units are given two coats of satin finish clear sealer. Because our interior finishes are water-based, low-VOC stains and paints, you can rest assured you've made an environmentally conscious decision.



Printed images of wood species and stain options will vary from actual product colors. Selections should be made based on color samples available from your Kolbe dealer. Stain colors are shown on Pine. Since no two trees are identical, wood can be expected to differ both in color and graining. These factors will influence the stain's final color. Color-matched interior paint is available through any Sherwin-Williams retail store in the United States and Canada.

*All units supplied with unfinished pine interiors must be finished in the field.

**Latex primer is not a final finish.

†White and Black are single coat interior paint finishes with some visible wood grain. Back priming of casement operator and jamb covers is available.

GLASS OPTIONS

Kolbe offers glazing options to provide optimum energy efficiency for the geographic region in which you live. Low-E is a “smart” coating that reduces energy transfer through the insulating glass unit. The result is reduced heating and cooling costs throughout the year. Low-E coatings also reduce the potential for condensation, as well as provide protection against fading of furniture, fabrics and carpeting.

Kolbe also offers the following Low-E glass options, as well as many specialized options:

Solar Gain Low-E

When the weather turns frigid, Solar Gain Low-E glass is the perfect cold remedy. It keeps homes warmer and more comfortable by blocking heat loss to the outside and letting the sun’s heat stream in to increase solar heat gain.

Solar Low-E (Kolbe's Standard)

Suitable for most climates and meets most energy zone requirements. Solar Low-E glass is designed to reflect room-side heat back into the room during winter months. In summer, visible sunlight is allowed in while blocking most of the sun’s infrared heat energy.

Solar Control Low-E

Offers an ideal balance of solar control and high visibility by blocking 95% of UV rays while maintaining the interior temperature.

Solar Advanced Control Low-E

A tinted glass recommended for warm climates that achieves greater solar control over a wide range of the spectrum, while also helping to reduce glare.

Turtle Glass

Achieves the Turtle Code of less than 45% Visible Transmittance utilizing laminated glass with Solar Control Low-E and gray tint.

ThermaPlus™ Low-E

An additional Low-E coating which helps to meet the strictest energy requirements by providing protection against heat loss and UV damage. Available with dual pane versions of Solar Gain Low-E, Solar Low-E, Solar Control Low-E, Solar Advanced Control Low-E, and Solar Increased Control Low-E glass.

Triple Pane

Provides a greater energy performing window that keeps indoor air warm and comfortable, prevents heat loss, and lowers your heating bills. It is constructed with three panes of glass, thermal spacer bars and is available in Solar Gain Low-E, Solar Low-E, Solar Control Low-E, Solar Advanced Control Low-E, and Solar Increased Control Low-E glass.

Preserve® Film

A protective film that protects the glass surfaces from scratches during transit and construction, as well as reducing the time involved in job site clean-up.

Tinted, Colored or Patterned

Provides shading, privacy or visual interest.

Tempered

Standard in Kolbe doors to address safety concerns. Also available in window units to meet specific building codes.

Laminated

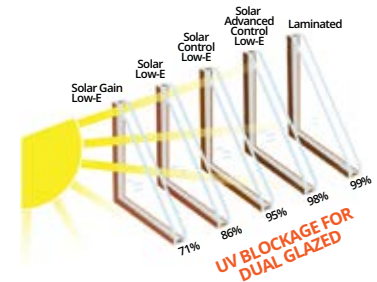
Benefits include safety, security, sound control and provides the ultimate in UV blockage.

Impact

Glazing utilized to withstand harsh environmental conditions, especially in coastal regions. Combined with an impact rated product, this glazing offers the highest level of security.

Neat+™

Harnesses the sun’s UV rays to loosen dirt so water can rinse it away, leaving windows cleaner, longer. A special sputter-coating process makes the glass ultra smooth, so the water “sheets off” more readily than it would on uncoated glass, allowing you to spend less time cleaning.



NOTE: Tested units include argon. The laminate has 1/4" inner pane. Based on Lawrence Berkeley Lab (LBL) Window 5.2 © 2003 analysis for classical UV transmission data.



NOTES: Not all glass is available on all products. Please contact your Kolbe dealer for product specifics. Neat+ and Preserve are trademarks of Cardinal Glass Industries, Inc. Low-E insulating glass with a stainless steel spacer bar carries a 20-year warranty. Not all glass options listed have the same glass warranty. Please contact your dealer for details.

DIVIDED LITE OPTIONS

Forgent Series windows and doors are available with two types of divided lites: performance divided lites and grilles-in-the-airspace.

PERFORMANCE DIVIDED LITES

Kolbe's performance divided lite (PDL) glazing system gives the appearance of true divided lites without sacrificing energy efficiency. Extruded aluminum bars are adhered to the exterior of Forgent Series windows and doors. Unfinished pine bars are adhered to the interior of the single lite of insulating glass on Glastra/Wood units, while aluminum bars are adhered to the interior of All Glastra units. Aesthetically pleasing spacer bars are installed within the insulating glass unit. Together, these bars create the illusion of true divided lites. Beveled profile PDL bars are available in 7/8", 1-1/8" or 2-1/4" bar widths, and can be finished to match the exterior and/or interior, as requested. Some designs may have a composite material for the exterior PDL bar. Limited lite patterns are available.



GRILLES-IN-THE-AIRSPACE

Grilles-in-the-airspace are constructed with 3/4" wide, contoured profile aluminum bars sealed between two panes of insulating glass, offering the look of divided panes while reducing cleaning time. Bars are available in solid, woodgrain, and bi-color, for a pleasing match to the exterior and interior finishes.

NOTES: Limitations may apply. Please consult your local Kolbe dealer for more information.



OPTIONS

WINDOW HARDWARE FINISHES

CLAY	SATIN NICKEL
MATTE BLACK	WHITE
RUSTIC UMBER	

DOOR HARDWARE FINISHES

CLAY	SATIN NICKEL PVD†	SMOKY GRAY PVD†
MATTE BLACK	WHITE	BRIGHT BRASS PVD†
RUSTIC UMBER	GOLD PAINTED	

WINDOW SCREEN FINISHES

SAND	BRONZE
BLACK	WHITE
RUSTIC	

†PVD (Physical Vapor Deposition) finish is an application over the color which helps protect the hardware against tarnishing, peeling and cracking. Printed images of hardware finishes will vary slightly from actual colors. Not all hardware color options are available on all products. Selections should be made based on color samples available from your Kolbe dealer.

WINDOW OPENING CONTROL DEVICES (WOCDs)

Kolbe offers Window Opening Control Devices (WOCDs) that restrict the size of the open window area to less than 4 inches, and feature a limit release mechanism to allow for emergency escape. These devices allow the window to latch into place at a predetermined position and automatically re-latch when closed. The WOCDs meet the ASTM F2090-13 requirements.

WOCD for Double Hungs & Sliding Windows

WOCDs can be factory applied to Forgest Series double hungs and sliding windows, or shipped loose as a kit for field installation.



WOCD APPLIED TO DOUBLE HUNG
(Glastra/Wood unit)

WOCD for Casements

This sleek, non-visible device for crank-out casements can be factory applied or shipped loose as a kit for field installation.



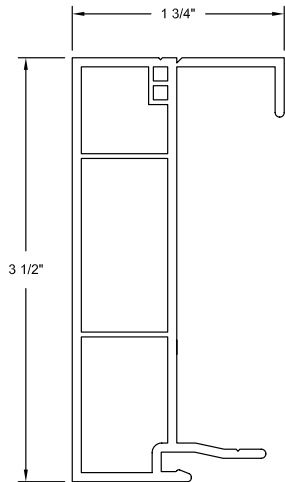
WOCD APPLIED TO CASEMENT
(All Glastra unit)

This device meets the stringent safety requirement of ASTM F2090-13 if applied per recommendations. Factory-applied WOCDs are available as kits for application on the job site. Not all windows are available with window opening control devices. Please ask your local Kolbe dealer about availability.

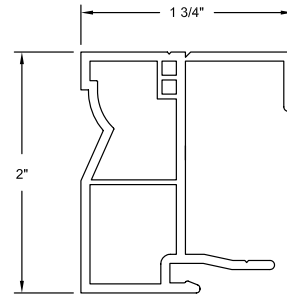
EXTERIOR ACCESSORIES

OPTIONAL EXTERIOR ACCESSORIES

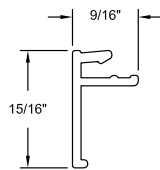
3-1/2" Flat Casing



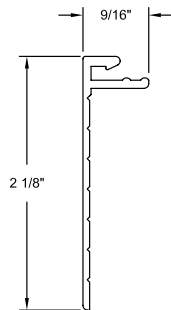
2" Brickmould



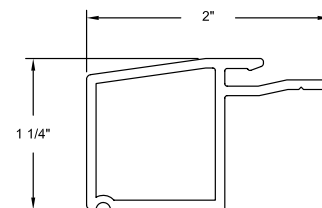
J-Channel



Frame Expander

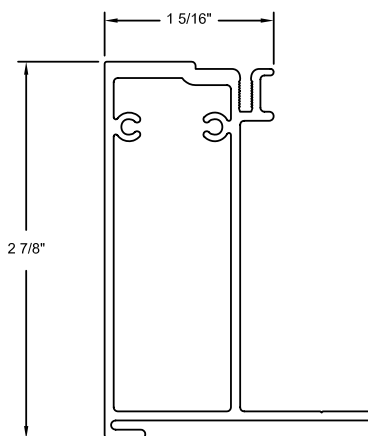


Sill Nosing

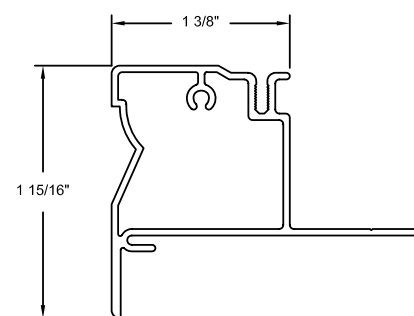


OPTIONAL EXTERIOR ACCESSORIES FOR DOORS THAT COMPLEMENT GLASTRA/WOOD UNITS

3-1/2" Flat Casing



2" Brickmould



NOTE: Drawings are not to scale. Additional and the most current drawings are available at kolbwindows.com

PERFORMANCE

SOUND TRANSMISSION CLASS/OUTDOOR-INDOOR TRANSMISSION CLASS (STC/OITC)

STC/OITC ratings are measurements used to gauge how well window and door products provide noise reduction. Windows and doors can be used as a sound barrier for outside or inside noise. The higher the rating, the better the sound control. Factors such as glass type, glass thickness, and airspace between the glass should be considered, as all affect STC/OITC ratings. A wide selection of Forgent Series products can be upgraded to meet specific needs.

Product	Glass		STC	OITC
Forgent Series STC/OITC Ratings				
Double Hung	Insulated Glass 3.1mm-3.1mm	Standard Double Pane	29	24
Double Hung	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	36	29
Double Hung	LAMI 80	Impact Laminated	36	30
Double Hung	LAMI 82	1/4" Laminated	36	29
Double Hung	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	35	29
Direct Set Double Hung	Insulated Glass 3.9mm-3.9mm	Standard Double Pane	29	24
Direct Set Double Hung	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	30	25
Direct Set Double Hung	LAMI 81	Impact Laminated	34	30
Direct Set Double Hung	LAMI 82	1/4" Laminated	35	29
Direct Set Double Hung	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	30	26
Studio Double Hung	Insulated Glass 3.1mm-3.1mm	Standard Double Pane	29	24
Studio Double Hung	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	33	28
Studio Double Hung	LAMI 85	Impact Laminated	35	31
Studio Double Hung	LAMI 82	1/4" Laminated	34	27
Studio Double Hung	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	33	28
Sliding Door	Insulated Glass 3.9mm-3.9mm	Standard Double Pane	29	23
Sliding Door	LAMI 84	Impact Laminated	32	28
Sliding Door	LAMI 82	1/4" Laminated	31	27
Sliding Door	Triple Insulated Glass 3.1mm-3.1mm-3.1mm	Offset Triple Pane	28	22
Sliding Window	Insulated Glass 3.1mm-3.1mm	Standard Double Pane	29	24
Sliding Window	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	36	30
Sliding Window	LAMI 80	Impact Laminated	35	30
Sliding Window	LAMI 82	1/4" Laminated	34	29
Sliding Window	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	35	30

Product	Glass		STC	OITC
Forgent Series STC/OITC Ratings (Continued)				
Crank-Out Awning	Insulated Glass 3.1mm-3.1mm	Standard Double Pane	28	22
Crank-Out Awning	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	33	26
Crank-Out Awning	LAMI 80	Impact Laminated	34	28
Crank-Out Awning	LAMI 82	1/4" Laminated	33	26
Crank-Out Awning	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	33	28
Crank-Out Casement	Insulated Glass 3.1mm-3.1mm	Standard Double Pane	27	22
Crank-Out Casement	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	31	26
Crank-Out Casement	LAMI 80	Impact Laminated	32	27
Crank-Out Casement	LAMI 82	1/4" Laminated	32	27
Crank-Out Casement	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	33	27
Picture Direct Set Crank-Out Casement	Insulated Glass 3.9mm-3.9mm	Standard Double Pane	29	24
Picture Direct Set Crank-Out Casement	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	31	25
Picture Direct Set Crank-Out Casement	LAMI 85	Impact Laminated	33	29
Picture Direct Set Crank-Out Casement	LAMI 83	1/4" Laminated	35	30
Picture Direct Set Crank-Out Casement	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	30	26
Picture Sash Set Crank-Out Casement	Insulated Glass 3.9mm-3.9mm	Standard Double Pane	30	24
Picture Sash Set Crank-Out Casement	Insulated Glass 5.7mm-3.1mm	Offset Double Pane	32	27
Picture Sash Set Crank-Out Casement	LAMI 85	Impact Laminated	34	28
Picture Sash Set Crank-Out Casement	LAMI 82	1/4" Laminated	34	29
Picture Sash Set Crank-Out Casement	Triple Insulated Glass 3.1mm-3.1mm-4.7mm	Offset Triple Pane	32	28

IMPACT PERFORMANCE OPTIONS

Many of the Forgent Series products are available with impact performance packages to meet even the strictest building code requirements. Kolbe offers impact performance products to improve air, water and structural ratings. These impact ratings provide enhanced window and door strength without any modifications to the product. All Forgent Series impact rated products are glazed with structural silicone. **All certifications apply to both All Glastra and Glastra/Wood products.**



Product	Kolbe Performance	Product Configuration	Air Tested to PSF	Water Tested to PA (PSF)	Performance Class and Grade	Design Pressure PA (PSF)		Max Width		Max Height		FL #	TDI #
						Positive	Negative	Inches	(MM)	Inches	(MM)		
Forgent Series Impact Ratings													
Forgent Complementary Sliding Door	Impact 4	Two Panel	1.57	360 Pa (7.52 psf)	LC-PG50 SD	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	96	2438	96	2438	22641	In Process
Forgent Complementary Sliding Door	Impact 4	Four Panel	1.57	290 Pa (6.06 psf)	LC-PG40 SD	+1920 Pa (40.10 psf)	-1920 Pa (40.10 psf)	168	4267	96	2438	22641	In Process
Crank-Out Awning	Impact 4	Single	1.57	440 Pa (9.19 psf)	LC-PG60 AP	+2880 Pa (60.15 psf)	-2880 Pa (60.15 psf)	47.5	1206	47.5	1206	22241	In Process
Crank-Out Casement	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	35.5	902	71.5	1816	22235	In Process
Casement Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG55 C	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	35.5	902	71.5	1816	22235	In Process
Casement Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	CW-PG55 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	59.5	1511	95.5	2426	22235	In Process
Casement Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	28.5	724	71.5	1816	22242	In Process
Casement Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	55.5	1410	85.5	2172	22242	In Process
Casement Picture	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	71.5	1816	71.5	1816	22242	In Process
Double Hung Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	59.5	1511	85.5	2172	22242	In Process
Double Hung Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	28.5	724	71.5	1816	22242	In Process
Double Hung Direct Set	Impact 4	Single	1.57	470 Pa (9.82 psf)	CW-PG55 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	59.5	1511	95.5	2426	22242	In Process
Double Hung	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG55 H	+2640 Pa (55.14 psf)	-2640 Pa (55.14 psf)	44	1118	75	1905	22655	In Process
Double Hung Studio	Impact 4	Single	1.57	470 Pa (9.82 psf)	LC-PG65 FW	+3120 Pa (65.16 psf)	-3120 Pa (65.16 psf)	60	1524	80	2032	22242	In Process
Sliding Window	Impact 4	Single	1.57	360 Pa (7.52 psf)	LC-PG50 HS	+2400 Pa (50.13 psf)	-2400 Pa (50.13 psf)	71.5	1816	59.5	1511	22656	Submitted
1-1/2" Mull Intersecting	HVHZ	-	1.57	70 Pa (10.65 psf)	LC-PG70	*	*	-	-	-	-	21044	-
Half-inch Reinforced Mullion (No T-Mullis)	HVHZ	-	1.57	70 Pa (10.65 psf)	LC-PG60	*	*	-	-	-	-	21044	-

* Allowable mullered assembly pressure shall be the lesser of the pressure based on mullion span & load width, and that specified for the individual window units.

NOTE: For specific product information, including configuration and maximum size tested, please visit kolbewindows.com/solutions/impact-resistance.

ENERGY PERFORMANCE DATA

ENERGY STAR® – UNITED STATES

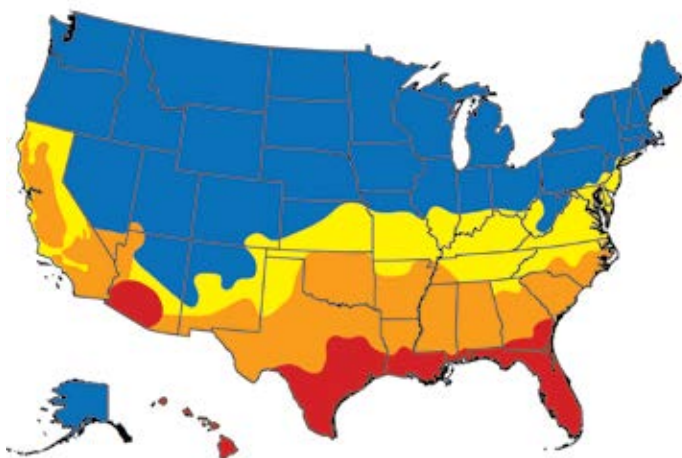


Energy Star is a government-regulated program that was created by the Environmental Protection Agency (EPA), and the U.S. Department of Energy (DOE), to help consumers quickly and easily identify energy saving products.

The Energy Star program uses energy values obtained by window and door manufacturers through the National Fenestration Rating Council (NFRC) program. NFRC ratings are based on the energy performance of the total window or door – both glass and frame.

The Energy Star program for the United States divides the nation into four separate climate zones – Northern, North-Central, South-Central, and Southern.

The performance criteria that needs to be met in order to be Energy Star compliant in specific climate zones are shown in the charts provided. Note that this information is per criteria that took effect in 2015 and 2016.



- Northern
Mostly Heating
- North-Central
Heating & Cooling
- South-Central
Heating & Cooling
- Southern
Mostly Cooling

2015 & 2016 ENERGY STAR – Qualification Criteria for Windows*

Climate Zones – U.S.	U-Factor	SHGC
Northern**	≤ 0.27	Any
Northern**	= 0.28	≥ 0.32
Northern**	= 0.29	≥ 0.37
Northern**	= 0.30	≥ 0.42
North-Central	≤ 0.30	≤ 0.40
South-Central	≤ 0.30	≤ 0.25
Southern	≤ 0.40	≤ 0.25

*The effective date for the Northern Zone prescriptive and equivalent energy performance criteria for windows was January 1, 2016. North-Central, South-Central, and Southern criteria will continue to follow 2015 guidelines.

**Northern zone windows can meet prescriptive (1st row) or alternative energy performance (2nd, 3rd, and 4th rows) criteria to qualify for ENERGY STAR.

2015 ENERGY STAR – Qualification Criteria for Doors

Glazing	U-Factor	SHGC	
Opaque	≤ 0.17	No rating	
≤ 1/2-Lite	≤ 0.25	≤ 0.25	
> 1/2-Lite	≤ 0.30	Northern North-Central	≤ 0.40
		Southern South-Central	≤ 0.25

CALIFORNIA'S TITLE 24

Kolbe's Forgent Series windows and doors can meet the strict California Title 24 Building Energy Efficiency Standards. Talk to your dealer about Forgent Series products with glass options that help meet these stringent energy efficiency requirements.

For energy performance data, visit:

▶ www.kolbewindows.com/energy

Kolbe demonstrates a commitment to providing accurate energy data by having products independently simulated, tested, inspected and listed in the NFRC certification program, and making that data available at kolbewindows.com and on window labels.

Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, contact your local Kolbe dealer.

ENERGY STAR® – CANADA

Fenestration products may comply for Canada's Energy Star program based on these compliance paths: their total U-factor, their Energy Rating (ER), or both. The Energy Rating is based on a product's overall performance based on three criteria: (1) solar heat gain, (2) U-factor, and (3) average air tightness. The higher the ER number, the better the product's thermal performance.

The U-factor and ER criteria for Canada is shown in the chart provided. For Kolbe products that qualify for Canada's Energy Star Program, search their website at www.oee.nrcan.gc.ca/energystar.



2020 ENERGY STAR – Qualification Criteria for Windows & Doors in Canada†

Minimum Energy Rating (ER)	or	Maximum U-Factor
34	or	≤ 0.21

U-Factor Equivalency – Qualification Criteria for Windows & Doors in Canada†

Imperial	Metric
0.35	2.00
0.32	1.80
0.28	1.60
0.25	1.40
0.21	1.20

†Criteria shown applies to windows, sliding doors, and swinging doors.

ENERGY PERFORMANCE TERMINOLOGY

- ▶ U-Factor refers to a measure of heat transfer through the window or door unit. A lower U-factor means less heat escapes during winter weather, thus reducing heating costs in cold climates.
- ▶ R-Value refers to resistance to heat flow. A high R-value indicates that a window or door has good heat insulating properties.
- ▶ Solar Heat Gain Coefficient (SHGC) is a measure of how much solar energy is passing through the unit's glass. The lower a window or door unit's SHGC, the less solar heat is transmitted into a room, thus allowing for lower cooling bills in hot climates.
- ▶ Visible Transmittance (VT) is a measure of the portion of visible light that passes through a window or door. The higher a window or door unit's VT Total, the more visible light is transmitted into a room. This value is influenced by both the glass selection and by the ratio of glazing and frame area.

Kolbe demonstrates a commitment to providing accurate energy data by having products independently simulated, tested, inspected and listed in the NFRC certification program, and making that data available at kolbewindows.com and on window labels.

Energy performance data and air, water, structural data is updated on a continuous basis. For the most current information, contact your local Kolbe dealer.

CLEAR OPENING DIMENSIONS

ROUGH OPENING RECOMMENDATIONS:

The Kolbe standard rough opening dimensions published in our product literature are provided as a guideline to maintain a minimum 1/4" space between the window or patio door and the building structure. There are certain situations where Kolbe recommends a gap larger than our published 1/4" standard:

- ▶ When installation clips are used, the gap should be increased to 1/2" on the sides, top and bottom of the unit.
- ▶ When mulls are installed in the opening, the gap all around should be increased to 1/2". For installation consistency, the same gap should be used on all units in the project.
- ▶ When a sill pan drainage system is used, the gap should be increased to 1/2" on the top and bottom of the unit.

Because every installation is different, Kolbe strongly recommends consultation with the local supplier or a qualified contractor, architect or structural engineer prior to the installation of any Kolbe product. Installation of Kolbe products, including sizing of rough opening, method of attachment, fastener selection, and code compliance is the sole responsibility of the architect, building owner, contractor and/or consumer.

Unless otherwise specified, if units are ordered by rough opening, Kolbe will size the units using our standard minimum 1/4" gap - regardless of the options or construction of the product ordered.

DEFINITIONS OF ACCEPTABLE EMERGENCY ESCAPE & RESCUE OPENINGS:

"Egress" has long been the term used to describe the clear opening dimensions of a window or door necessary to enter or exit a building in case of an emergency. With the release of the International Building Code (IBC) and International Residential Code (IRC), "egress" is no longer the appropriate term.

IBC and IRC have set the following as basic requirements for Emergency Escape & Rescue Openings.

- ▶ Minimum Opening Width: 20 inches (508 mm)
- ▶ Minimum Opening Height: 24 inches (610 mm)
- ▶ Minimum Opening Area: 5.7 sq. ft. (0.53 m²)

NOTE: Please check your local codes to confirm that these Emergency Escape & Rescue Opening requirements are applicable. Other requirements may also apply.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Casements with Standard Adjustable Hinges (All Glastra)						
MC1620	0.88	6-29/32"	18-9/32"	1.46	1.56	2.86
MC1626	1.16	6-29/32"	24-9/32"	1.96	2.07	3.59
MC1630	1.45	6-29/32"	30-9/32"	2.45	2.58	4.31
MC1636	1.74	6-29/32"	36-9/32"	2.94	3.09	5.04
MC1640	2.03	6-29/32"	42-9/32"	3.44	3.61	5.77
MC1646	2.32	6-29/32"	48-9/32"	3.93	4.12	6.50
MC1650	2.60	6-29/32"	54-9/32"	4.42	4.63	7.23
MC1656	2.89	6-29/32"	60-9/32"	4.91	5.14	7.96
MC1660	3.18	6-29/32"	66-9/32"	5.41	5.65	8.69
MC2020	1.64	12-29/32"	18-9/32"	2.21	2.32	3.84
MC2026	2.18	12-29/32"	24-9/32"	2.95	3.08	4.81
MC2030	2.71	12-29/32"	30-9/32"	3.69	3.84	5.79
MC2036	3.25	12-29/32"	36-9/32"	4.44	4.61	6.77
MC2040	3.79	12-29/32"	42-9/32"	5.18	5.37	7.75
MC2046	4.33	12-29/32"	48-9/32"	5.92	6.13	8.73
MC2050	4.87	12-29/32"	54-9/32"	6.66	6.89	9.71
MC2056	5.40	12-29/32"	60-9/32"	7.41	7.65	10.69
MC2060	5.94	12-29/32"	66-9/32"	8.15	8.41	11.67
MC2620	2.40	18-29/32"	18-9/32"	2.95	3.08	4.81
MC2626	3.19	18-29/32"	24-9/32"	3.94	4.09	6.04
MC2630	3.98	18-29/32"	30-9/32"	4.94	5.11	7.27
MC2636	4.76	18-29/32"	36-9/32"	5.93	6.12	8.50
MC2640	5.55	18-29/32"	42-9/32"	6.92	7.13	9.73
MC2646	6.34	18-29/32"	48-9/32"	7.91	8.14	10.96
MC2650	7.13	18-29/32"	54-9/32"	8.91	9.15	12.19
MC2656	7.91	18-29/32"	60-9/32"	9.90	10.16	13.42
MC2660	8.70	18-29/32"	66-9/32"	10.89	11.18	14.65
MC3020	3.16	24-29/32"	18-9/32"	3.69	3.84	5.79
MC3026	4.20	24-29/32"	24-9/32"	4.94	5.11	7.27
MC3030	5.24	24-29/32"	30-9/32"	6.18	6.37	8.75
MC3036	6.28	24-29/32"	36-9/32"	7.42	7.63	10.23
MC3040	7.31	24-29/32"	42-9/32"	8.66	8.89	11.71
MC3046	8.35	24-29/32"	48-9/32"	9.91	10.15	13.19
MC3050	9.39	24-29/32"	54-9/32"	11.15	11.41	14.67
MC3056	10.43	24-29/32"	60-9/32"	12.39	12.68	16.15
MC3060	11.46	24-29/32"	66-9/32"	13.64	13.94	17.63

NOTE: For the most up-to-date data, please visit kolbewindows.com
Shaded units meet most national building codes for emergency escape and rescue requirements.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Casements with Standard Adjustable Hinges (Glastra/Wood)						
MC1620	0.92	7-3/16"	18-17/32"	1.46	1.65	2.86
MC1626	1.22	7-3/16"	24-17/32"	1.96	2.19	3.59
MC1630	1.52	7-3/16"	30-17/32"	2.45	2.72	4.31
MC1636	1.82	7-3/16"	36-17/32"	2.94	3.26	5.04
MC1640	2.12	7-3/16"	42-17/32"	3.44	3.79	5.77
MC1646	2.42	7-3/16"	48-17/32"	3.93	4.33	6.50
MC1650	2.72	7-3/16"	54-17/32"	4.42	4.86	7.23
MC1656	3.02	7-3/16"	60-17/32"	4.91	5.40	7.96
MC1660	3.32	7-3/16"	66-17/32"	5.41	5.93	8.69
MC2020	1.70	13-3/16"	18-17/32"	2.21	2.42	3.84
MC2026	2.25	13-3/16"	24-17/32"	2.95	3.21	4.81
MC2030	2.80	13-3/16"	30-17/32"	3.69	4.00	5.79
MC2036	3.35	13-3/16"	36-17/32"	4.44	4.78	6.77
MC2040	3.90	13-3/16"	42-17/32"	5.18	5.57	7.75
MC2046	4.44	13-3/16"	48-17/32"	5.92	6.35	8.73
MC2050	4.99	13-3/16"	54-17/32"	6.66	7.14	9.71
MC2056	5.54	13-3/16"	60-17/32"	7.41	7.92	10.69
MC2060	6.09	13-3/16"	66-17/32"	8.15	8.71	11.67
MC2620	2.47	19-3/16"	18-17/32"	2.95	3.20	4.81
MC2626	3.27	19-3/16"	24-17/32"	3.94	4.23	6.04
MC2630	4.07	19-3/16"	30-17/32"	4.94	5.27	7.27
MC2636	4.87	19-3/16"	36-17/32"	5.93	6.30	8.50
MC2640	5.67	19-3/16"	42-17/32"	6.92	7.34	9.73
MC2646	6.47	19-3/16"	48-17/32"	7.91	8.37	10.96
MC2650	7.27	19-3/16"	54-17/32"	8.91	9.41	12.19
MC2656	8.07	19-3/16"	60-17/32"	9.90	10.44	13.42
MC2660	8.87	19-3/16"	66-17/32"	10.89	11.48	14.65
MC3020	3.24	25-3/16"	18-17/32"	3.69	3.97	5.79
MC3026	4.29	25-3/16"	24-17/32"	4.94	5.25	7.27
MC3030	5.34	25-3/16"	30-17/32"	6.18	6.54	8.75
MC3036	6.39	25-3/16"	36-17/32"	7.42	7.82	10.23
MC3040	7.44	25-3/16"	42-17/32"	8.66	9.11	11.71
MC3046	8.49	25-3/16"	48-17/32"	9.91	10.40	13.19
MC3050	9.54	25-3/16"	54-17/32"	11.15	11.68	14.67
MC3056	10.59	25-3/16"	60-17/32"	12.39	12.97	16.15
MC3060	11.64	25-3/16"	66-17/32"	13.64	14.25	17.63

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Casements with Egress Hinges (All Glastra)						
MC2620	2.96	23-9/32"	18-9/32"	2.95	3.08	4.81
MC2626	3.93	23-9/32"	24-9/32"	3.94	4.09	6.04
MC2630	4.90	23-9/32"	30-9/32"	4.94	5.11	7.27
MC2636	5.87	23-9/32"	36-9/32"	5.93	6.12	8.50
MC2640	6.84	23-9/32"	42-9/32"	6.92	7.13	9.73
MC2646	7.81	23-9/32"	48-9/32"	7.91	8.14	10.96
MC2650	8.78	23-9/32"	54-9/32"	8.91	9.15	12.19
MC2656	9.75	23-9/32"	60-9/32"	9.90	10.16	13.42
MC2660	10.72	23-9/32"	66-9/32"	10.89	11.18	14.65
MC3020	3.72	29-9/32"	18-9/32"	3.69	3.84	5.79
MC3026	4.94	29-9/32"	24-9/32"	4.94	5.11	7.27
MC3030	6.16	29-9/32"	30-9/32"	6.18	6.37	8.75
MC3036	7.38	29-9/32"	36-9/32"	7.42	7.63	10.23
MC3040	8.60	29-9/32"	42-9/32"	8.66	8.89	11.71
MC3046	9.82	29-9/32"	48-9/32"	9.91	10.15	13.19
MC3050	11.04	29-9/32"	54-9/32"	11.15	11.41	14.67
MC3056	12.26	29-9/32"	60-9/32"	12.39	12.68	16.15
MC3060	13.48	29-9/32"	66-9/32"	13.64	13.94	17.63

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Casements with Egress Hinges (Glastra/Wood)						
MC2620	3.03	23-9/16"	18-17/32"	2.95	3.20	4.81
MC2626	4.01	23-9/16"	24-17/32"	3.94	4.23	6.04
MC2630	5.00	23-9/16"	30-17/32"	4.94	5.27	7.27
MC2636	5.98	23-9/16"	36-17/32"	5.93	6.30	8.50
MC2640	6.96	23-9/16"	42-17/32"	6.92	7.34	9.73
MC2646	7.94	23-9/16"	48-17/32"	7.91	8.37	10.96
MC2650	8.92	23-9/16"	54-17/32"	8.91	9.41	12.19
MC2656	9.90	23-9/16"	60-17/32"	9.90	10.44	13.42
MC2660	10.89	23-9/16"	66-17/32"	10.89	11.48	14.65
MC3020	3.80	29-9/16"	18-17/32"	3.69	3.97	5.79
MC3026	5.04	29-9/16"	24-17/32"	4.94	5.25	7.27
MC3030	6.27	29-9/16"	30-17/32"	6.18	6.54	8.75
MC3036	7.50	29-9/16"	36-17/32"	7.42	7.82	10.23
MC3040	8.73	29-9/16"	42-17/32"	8.66	9.11	11.71
MC3046	9.96	29-9/16"	48-17/32"	9.91	10.40	13.19
MC3050	11.20	29-9/16"	54-17/32"	11.15	11.68	14.67
MC3056	12.43	29-9/16"	60-17/32"	12.39	12.97	16.15
MC3060	13.66	29-9/16"	66-17/32"	13.64	14.25	17.63

NOTE: For the most up-to-date data, please visit kolbewindows.com
 Shaded units meet most national building codes for emergency escape and rescue requirements.

CLEAR OPENING DIMENSIONS

Notes for Awning Windows:

- ▶ Awnings may not be considered emergency escape and rescue windows.
- ▶ Clear opening dimensions are determined after unhooking and retracting operator arms and pushing sash open to 90°.

Product #	Sq. Ft. Clear Opp.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Awnings (All Glastra)						
MA2020	1.20	18-9/32"	9-27/64"	2.21	2.33	3.84
MA2620	1.59	24-9/32"	9-27/64"	2.95	3.09	4.81
MA3020	1.98	30-9/32"	9-27/64"	3.69	3.86	5.79
MA3620	2.37	36-9/32"	9-27/64"	4.44	4.62	6.77
MA4020	2.77	42-9/32"	9-27/64"	5.18	5.38	7.75
MA2026	1.96	18-9/32"	15-27/64"	2.95	3.10	4.81
MA2626	2.60	24-9/32"	15-27/64"	3.94	4.11	6.04
MA3026	3.24	30-9/32"	15-27/64"	4.94	5.12	7.27
MA3626	3.89	36-9/32"	15-27/64"	5.93	6.13	8.50
MA4026	4.53	42-9/32"	15-27/64"	6.92	7.14	9.73
MA2030	2.30	18-9/32"	18-7/64"	3.69	3.86	5.79
MA2630	3.05	24-9/32"	18-7/64"	4.94	5.13	7.27
MA3030	3.81	30-9/32"	18-7/64"	6.18	6.39	8.75
MA3630	4.56	36-9/32"	18-7/64"	7.42	7.65	10.23
MA4030	5.32	42-9/32"	18-7/64"	8.66	8.91	11.71
MA2036	3.06	18-9/32"	24-7/64"	4.44	4.63	6.77
MA2636	4.07	24-9/32"	24-7/64"	5.93	6.14	8.50
MA3036	5.07	30-9/32"	24-7/64"	7.42	7.65	10.23
MA3636	6.07	36-9/32"	24-7/64"	8.91	9.16	11.96
MA4036	7.08	42-9/32"	24-7/64"	10.41	10.68	13.69
MA2040	3.82	18-9/32"	30-7/64"	5.18	5.39	7.75
MA2640	5.08	24-9/32"	30-7/64"	6.92	7.16	9.73
MA3040	6.33	30-9/32"	30-7/64"	8.66	8.92	11.71
MA3640	7.59	36-9/32"	30-7/64"	10.41	10.68	13.69
MA4040	8.84	42-9/32"	30-7/64"	12.15	12.44	15.67

Product #	Sq. Ft. Clear Opp.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Awnings (Glastra/Wood)						
MA2020	1.23	18-27/32"	9-25/64"	2.21	2.42	3.84
MA2620	1.62	24-27/32"	9-25/64"	2.95	3.20	4.81
MA3020	2.01	30-27/32"	9-25/64"	3.69	3.97	5.79
MA3620	2.40	36-27/32"	9-25/64"	4.44	4.74	6.77
MA4020	2.79	42-27/32"	9-25/64"	5.18	5.51	7.75
MA2026	2.01	18-27/32"	15-25/64"	2.95	3.21	4.81
MA2626	2.66	24-27/32"	15-25/64"	3.94	4.23	6.04
MA3026	3.30	30-27/32"	15-25/64"	4.94	5.25	7.27
MA3626	3.94	36-27/32"	15-25/64"	5.93	6.28	8.50
MA4026	4.58	42-27/32"	15-25/64"	6.92	7.30	9.73
MA2030	2.37	18-27/32"	18-5/64"	3.69	4.00	5.79
MA2630	3.12	24-27/32"	18-5/64"	4.94	5.27	7.27
MA3030	3.87	30-27/32"	18-5/64"	6.18	6.54	8.75
MA3630	4.63	36-27/32"	18-5/64"	7.42	7.81	10.23
MA4030	5.38	42-27/32"	18-5/64"	8.66	9.08	11.71
MA2036	3.15	18-27/32"	24-5/64"	4.44	4.78	6.77
MA2636	4.15	24-27/32"	24-5/64"	5.93	6.30	8.50
MA3036	5.16	30-27/32"	24-5/64"	7.42	7.82	10.23
MA3636	6.16	36-27/32"	24-5/64"	8.91	9.35	11.96
MA4036	7.16	42-27/32"	24-5/64"	10.41	10.87	13.69
MA2040	3.94	18-27/32"	30-5/64"	5.18	5.57	7.75
MA2640	5.19	24-27/32"	30-5/64"	6.92	7.34	9.73
MA3040	6.44	30-27/32"	30-5/64"	8.66	9.11	11.71
MA3640	7.70	36-27/32"	30-5/64"	10.41	10.88	13.69
MA4040	8.95	42-27/32"	30-5/64"	12.15	12.65	15.67

NOTE: For the most up-to-date data, please visit kolbewindows.com
 Shaded units meet most national building codes for emergency escape and rescue requirements.

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Double Hungs (All Glastra)						
MDH1630	1.18	13-23/32"	12-3/8"	2.04	1.18	4.31
MDH1636	1.46	13-23/32"	15-3/8"	2.51	1.46	5.04
MDH1640	1.75	13-23/32"	18-3/8"	2.97	1.75	5.77
MDH1646	2.04	13-23/32"	21-3/8"	3.44	2.04	6.50
MDH1650	2.32	13-23/32"	24-3/8"	3.90	2.32	7.23
MDH1656	2.61	13-23/32"	27-3/8"	4.36	2.61	7.96
MDH1660	2.67	13-23/32"	28"	4.83	2.67	8.69
MDH2030	1.69	19-23/32"	12-3/8"	3.14	1.69	5.79
MDH2036	2.11	19-23/32"	15-3/8"	3.86	2.11	6.77
MDH2040	2.52	19-23/32"	18-3/8"	4.57	2.52	7.75
MDH2046	2.93	19-23/32"	21-3/8"	5.29	2.93	8.73
MDH2050	3.34	19-23/32"	24-3/8"	6.00	3.34	9.71
MDH2056	3.75	19-23/32"	27-3/8"	6.71	3.75	10.69
MDH2060	3.83	19-23/32"	28"	7.43	3.83	11.67
MDH2630	2.21	25-23/32"	12-3/8"	4.24	2.21	7.27
MDH2636	2.75	25-23/32"	15-3/8"	5.21	2.75	8.50
MDH2640	3.28	25-23/32"	18-3/8"	6.17	3.28	9.73
MDH2646	3.82	25-23/32"	21-3/8"	7.14	3.82	10.96
MDH2650	4.35	25-23/32"	24-3/8"	8.10	4.35	12.19
MDH2656	4.89	25-23/32"	27-3/8"	9.06	4.89	13.42
MDH2660	5.00	25-23/32"	28"	10.03	5.00	14.65
MDH2830	2.38	27-23/32"	12-3/8"	4.61	2.38	7.77
MDH2836	2.96	27-23/32"	15-3/8"	5.66	2.96	9.08
MDH2840	3.54	27-23/32"	18-3/8"	6.71	3.54	10.39
MDH2846	4.11	27-23/32"	21-3/8"	7.75	4.11	11.70
MDH2850	4.69	27-23/32"	24-3/8"	8.80	4.69	13.02
MDH2856	5.27	27-23/32"	27-3/8"	9.85	5.27	14.33
MDH2860	5.39	27-23/32"	28"	10.90	5.39	15.64
MDH3030	2.73	31-23/32"	12-3/8"	5.34	2.73	8.75
MDH3036	3.39	31-23/32"	15-3/8"	6.56	3.39	10.23
MDH3040	4.05	31-23/32"	18-3/8"	7.77	4.05	11.71
MDH3046	4.71	31-23/32"	21-3/8"	8.99	4.71	13.19
MDH3050	5.37	31-23/32"	24-3/8"	10.20	5.37	14.67
MDH3056	6.03	31-23/32"	27-3/8"	11.42	6.03	16.15
MDH3060	6.17	31-23/32"	28"	12.63	6.17	17.63
MDH3230	2.90	33-23/32"	12-3/8"	5.71	2.90	9.24
MDH3236	3.60	33-23/32"	15-3/8"	7.01	3.60	10.81
MDH3240	4.30	33-23/32"	18-3/8"	8.31	4.30	12.37
MDH3246	5.01	33-23/32"	21-3/8"	9.60	5.01	13.93
MDH3250	5.71	33-23/32"	24-3/8"	10.90	5.71	15.49
MDH3256	6.41	33-23/32"	27-3/8"	12.20	6.41	17.06
MDH3260	7.11	33-23/32"	30-3/8"	13.50	7.11	18.62
MDH3630	3.24	37-23/32"	12-3/8"	6.44	3.24	10.23
MDH3636	4.03	37-23/32"	15-3/8"	7.91	4.03	11.96
MDH3640	4.81	37-23/32"	18-3/8"	9.37	4.81	13.69
MDH3646	5.60	37-23/32"	21-3/8"	10.84	5.60	15.42

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Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Double Hungs (All Glastra) Continued						
MDH3650	6.38	37-23/32"	24-3/8"	12.30	6.38	17.15
MDH3656	7.17	37-23/32"	27-3/8"	13.77	7.17	18.88
MDH3660	7.33	37-23/32"	28"	15.23	7.33	20.61
MDH4030	3.76	43-23/32"	12-3/8"	7.54	3.76	11.71
MDH4036	4.67	43-23/32"	15-3/8"	9.26	4.67	13.69
MDH4040	5.58	43-23/32"	18-3/8"	10.97	5.58	15.67
MDH4046	6.49	43-23/32"	21-3/8"	12.69	6.49	17.65
MDH4050	7.40	43-23/32"	24-3/8"	14.40	7.40	19.63
MDH4056	8.31	43-23/32"	27-3/8"	16.12	8.31	21.61
MDH4060	8.50	43-23/32"	28"	17.83	8.50	23.59

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Double Hungs (Glastra/Wood)						
MNCDH1630	1.18	13-23/32"	12-3/8"	2.04	1.18	4.31
MNCDH1636	1.46	13-23/32"	15-3/8"	2.51	1.46	5.04
MNCDH1640	1.75	13-23/32"	18-3/8"	2.97	1.75	5.77
MNCDH1646	2.04	13-23/32"	21-3/8"	3.44	2.04	6.50
MNCDH1650	2.32	13-23/32"	24-3/8"	3.90	2.32	7.23
MNCDH1656	2.61	13-23/32"	27-3/8"	4.36	2.61	7.96
MNCDH1660	2.67	13-23/32"	28"	4.83	2.67	8.69
MNCDH2030	1.69	19-23/32"	12-3/8"	3.14	1.69	5.79
MNCDH2036	2.11	19-23/32"	15-3/8"	3.86	2.11	6.77
MNCDH2040	2.52	19-23/32"	18-3/8"	4.57	2.52	7.75
MNCDH2046	2.93	19-23/32"	21-3/8"	5.29	2.93	8.73
MNCDH2050	3.34	19-23/32"	24-3/8"	6.00	3.34	9.71
MNCDH2056	3.75	19-23/32"	27-3/8"	6.71	3.75	10.69
MNCDH2060	3.83	19-23/32"	28"	7.43	3.83	11.67
MNCDH2630	2.21	25-23/32"	12-3/8"	4.24	2.21	7.27
MNCDH2636	2.75	25-23/32"	15-3/8"	5.21	2.75	8.50
MNCDH2640	3.28	25-23/32"	18-3/8"	6.17	3.28	9.73
MNCDH2646	3.82	25-23/32"	21-3/8"	7.14	3.82	10.96
MNCDH2650	4.35	25-23/32"	24-3/8"	8.10	4.35	12.19
MNCDH2656	4.89	25-23/32"	27-3/8"	9.06	4.89	13.42
MNCDH2660	5.00	25-23/32"	28"	10.03	5.00	14.65
MNCDH2830	2.38	27-23/32"	12-3/8"	4.61	2.38	7.77
MNCDH2836	2.96	27-23/32"	15-3/8"	5.66	2.96	9.08
MNCDH2840	3.54	27-23/32"	18-3/8"	6.71	3.54	10.39
MNCDH2846	4.11	27-23/32"	21-3/8"	7.75	4.11	11.70
MNCDH2850	4.69	27-23/32"	24-3/8"	8.80	4.69	13.02
MNCDH2856	5.27	27-23/32"	27-3/8"	9.85	5.27	14.33
MNCDH2860	5.39	27-23/32"	28"	10.90	5.39	15.64
MNCDH3030	2.73	31-23/32"	12-3/8"	5.34	2.73	8.75

CLEAR OPENING DIMENSIONS

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Double Hungs (Glastra/Wood) Continued						
MNCDH3036	3.39	31-23/32"	15-3/8"	6.56	3.39	10.23
MNCDH3040	4.05	31-23/32"	18-3/8"	7.77	4.05	11.71
MNCDH3046	4.71	31-23/32"	21-3/8"	8.99	4.71	13.19
MNCDH3050	5.37	31-23/32"	24-3/8"	10.20	5.37	14.67
MNCDH3056	6.03	31-23/32"	27-3/8"	11.42	6.03	16.15
MNCDH3060	6.17	31-23/32"	28"	12.63	6.17	17.63
MNCDH3430	3.07	35-23/32"	12-3/8"	6.08	3.07	9.74
MNCDH3436	3.81	35-23/32"	15-3/8"	7.46	3.81	11.38
MNCDH3440	4.56	35-23/32"	18-3/8"	8.84	4.56	13.03
MNCDH3446	5.30	35-23/32"	21-3/8"	10.22	5.30	14.68
MNCDH3450	6.05	35-23/32"	24-3/8"	11.60	6.05	16.32
MNCDH3456	6.79	35-23/32"	27-3/8"	12.98	6.79	17.97
MNCDH3460	8.02	35-23/32"	32-5/16"	14.36	8.02	19.61
MNCDH3630	3.24	37-23/32"	12-3/8"	6.44	3.24	10.23
MNCDH3636	4.03	37-23/32"	15-3/8"	7.91	4.03	11.96
MNCDH3640	4.81	37-23/32"	18-3/8"	9.37	4.81	13.69
MNCDH3646	5.60	37-23/32"	21-3/8"	10.84	5.60	15.42
MNCDH3650	6.38	37-23/32"	24-3/8"	12.30	6.38	17.15
MNCDH3656	7.17	37-23/32"	27-3/8"	13.77	7.17	18.88
MNCDH3660	7.33	37-23/32"	28"	15.23	7.33	20.61
MNCDH4030	3.76	43-23/32"	12-3/8"	7.54	3.76	11.71
MNCDH4036	4.67	43-23/32"	15-3/8"	9.26	4.67	13.69
MNCDH4040	5.58	43-23/32"	18-3/8"	10.97	5.58	15.67
MNCDH4046	6.49	43-23/32"	21-3/8"	12.69	6.49	17.65
MNCDH4050	7.40	43-23/32"	24-3/8"	14.40	7.40	19.63
MNCDH4056	8.31	43-23/32"	27-3/8"	16.12	8.31	21.61
MNCDH4060	8.50	43-23/32"	28"	17.83	8.50	23.59

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Sliding Windows (All Glastra)						
MNCSL2620	1.31	9-15/16"	18-15/16"	2.40	1.31	4.81
MNCSL2626	1.72	9-15/16"	24-15/16"	3.24	1.72	6.04
MNCSL2630	2.14	9-15/16"	30-15/16"	4.09	2.14	7.27
MNCSL2636	2.55	9-15/16"	36-15/16"	4.93	2.55	8.50
MNCSL2640	2.96	9-15/16"	42-15/16"	5.78	2.96	9.73
MNCSL2646	3.38	9-15/16"	48-15/16"	6.62	3.38	10.96
MNCSL2650	3.79	9-15/16"	54-15/16"	7.47	3.79	12.19
MNCSL2656	4.21	9-15/16"	60-15/16"	8.31	4.21	13.42
MNCSL2660	4.62	9-15/16"	66-15/16"	9.16	4.62	14.65
MNCSL3020	1.70	12-15/16"	18-15/16"	3.11	1.70	5.79
MNCSL3026	2.24	12-15/16"	24-15/16"	4.20	2.24	7.27
MNCSL3030	2.78	12-15/16"	30-15/16"	5.30	2.78	8.75
MNCSL3036	3.32	12-15/16"	36-15/16"	6.39	3.32	10.23
MNCSL3040	3.86	12-15/16"	42-15/16"	7.49	3.86	11.71
MNCSL3046	4.40	12-15/16"	48-15/16"	8.58	4.40	13.19

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Sliding Windows (All Glastra) Continued						
MNCSL3050	4.94	12-15/16"	54-15/16"	9.68	4.94	14.67
MNCSL3056	5.48	12-15/16"	60-15/16"	10.77	5.48	16.15
MNCSL3060	6.01	12-15/16"	66-15/16"	11.87	6.01	17.63
MNCSL3620	2.10	15-15/16"	18-15/16"	3.81	2.10	6.77
MNCSL3626	2.76	15-15/16"	24-15/16"	5.16	2.76	8.50
MNCSL3630	3.42	15-15/16"	30-15/16"	6.50	3.42	10.23
MNCSL3636	4.09	15-15/16"	36-15/16"	7.85	4.09	11.96
MNCSL3640	4.75	15-15/16"	42-15/16"	9.19	4.75	13.69
MNCSL3646	5.42	15-15/16"	48-15/16"	10.54	5.42	15.42
MNCSL3650	6.08	15-15/16"	54-15/16"	11.89	6.08	17.15
MNCSL3656	6.74	15-15/16"	60-15/16"	13.23	6.74	18.88
MNCSL3660	7.41	15-15/16"	66-15/16"	14.58	7.41	20.61
MNCSL4020	2.49	18-15/16"	18-15/16"	4.52	2.49	7.75
MNCSL4026	3.28	18-15/16"	24-15/16"	6.12	3.28	9.73
MNCSL4030	4.07	18-15/16"	30-15/16"	7.71	4.07	11.71
MNCSL4036	4.86	18-15/16"	36-15/16"	9.31	4.86	13.69
MNCSL4040	5.65	18-15/16"	42-15/16"	10.90	5.65	15.67
MNCSL4046	6.44	18-15/16"	48-15/16"	12.50	6.44	17.65
MNCSL4050	7.23	18-15/16"	54-15/16"	14.09	7.23	19.63
MNCSL4056	8.01	18-15/16"	60-15/16"	15.69	8.01	21.61
MNCSL4060	8.80	18-15/16"	66-15/16"	17.28	8.80	23.59
MNCSL4620	2.89	21-15/16"	18-15/16"	5.23	2.89	8.73
MNCSL4626	3.80	21-15/16"	24-15/16"	7.08	3.80	10.96
MNCSL4630	4.71	21-15/16"	30-15/16"	8.92	4.71	13.19
MNCSL4636	5.63	21-15/16"	36-15/16"	10.77	5.63	15.42
MNCSL4640	6.54	21-15/16"	42-15/16"	12.61	6.54	17.65
MNCSL4646	7.46	21-15/16"	48-15/16"	14.46	7.46	19.88
MNCSL4650	8.37	21-15/16"	54-15/16"	16.30	8.37	22.11
MNCSL4656	9.28	21-15/16"	60-15/16"	18.15	9.28	24.34
MNCSL4660	10.20	21-15/16"	66-15/16"	19.99	10.20	26.56
MNCSL5020	3.28	24-15/16"	18-15/16"	5.94	3.28	9.71
MNCSL5026	4.32	24-15/16"	24-15/16"	8.04	4.32	12.19
MNCSL5030	5.36	24-15/16"	30-15/16"	10.13	5.36	14.67
MNCSL5036	6.40	24-15/16"	36-15/16"	12.23	6.40	17.15
MNCSL5040	7.44	24-15/16"	42-15/16"	14.32	7.44	19.63
MNCSL5046	8.48	24-15/16"	48-15/16"	16.42	8.48	22.11
MNCSL5050	9.51	24-15/16"	54-15/16"	18.51	9.51	24.59
MNCSL5056	10.55	24-15/16"	60-15/16"	20.61	10.55	27.06
MNCSL5060	11.59	24-15/16"	66-15/16"	22.70	11.59	29.54
MNCSL6020	4.07	30-15/16"	18-15/16"	7.36	4.07	11.67
MNCSL6026	5.36	30-15/16"	24-15/16"	9.95	5.36	14.65
MNCSL6030	6.65	30-15/16"	30-15/16"	12.55	6.65	17.63
MNCSL6036	7.94	30-15/16"	36-15/16"	15.14	7.94	20.61
MNCSL6040	9.23	30-15/16"	42-15/16"	17.74	9.23	23.59
MNCSL6046	10.51	30-15/16"	48-15/16"	20.34	10.51	26.56
MNCSL6050	11.80	30-15/16"	54-15/16"	22.93	11.80	29.54
MNCSL6056	13.09	30-15/16"	60-15/16"	25.53	13.09	32.52
MNCSL6060	14.38	30-15/16"	66-15/16"	28.12	14.38	35.50

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Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Sliding Windows (Glastra/Wood)						
MNCSL2620	1.30	9-7/8"	18-15/16"	2.40	1.30	4.81
MNCSL2626	1.71	9-7/8"	24-15/16"	3.24	1.71	6.04
MNCSL2630	2.12	9-7/8"	30-15/16"	4.09	2.12	7.27
MNCSL2636	2.53	9-7/8"	36-15/16"	4.93	2.53	8.50
MNCSL2640	2.94	9-7/8"	42-15/16"	5.78	2.94	9.73
MNCSL2646	3.36	9-7/8"	48-15/16"	6.62	3.36	10.96
MNCSL2650	3.77	9-7/8"	54-15/16"	7.47	3.77	12.19
MNCSL2656	4.18	9-7/8"	60-15/16"	8.31	4.18	13.42
MNCSL2660	4.59	9-7/8"	66-15/16"	9.16	4.59	14.65
MNCSL3020	1.69	12-7/8"	18-15/16"	3.11	1.69	5.79
MNCSL3026	2.23	12-7/8"	24-15/16"	4.20	2.23	7.27
MNCSL3030	2.77	12-7/8"	30-15/16"	5.30	2.77	8.75
MNCSL3036	3.30	12-7/8"	36-15/16"	6.39	3.30	10.23
MNCSL3040	3.84	12-7/8"	42-15/16"	7.49	3.84	11.71
MNCSL3046	4.38	12-7/8"	48-15/16"	8.58	4.38	13.19
MNCSL3050	4.91	12-7/8"	54-15/16"	9.68	4.91	14.67
MNCSL3056	5.45	12-7/8"	60-15/16"	10.77	5.45	16.15
MNCSL3060	5.98	12-7/8"	66-15/16"	11.87	5.98	17.63
MNCSL3620	2.09	15-7/8"	18-15/16"	3.81	2.09	6.77
MNCSL3626	2.75	15-7/8"	24-15/16"	5.16	2.75	8.50
MNCSL3630	3.41	15-7/8"	30-15/16"	6.50	3.41	10.23
MNCSL3636	4.07	15-7/8"	36-15/16"	7.85	4.07	11.96
MNCSL3640	4.73	15-7/8"	42-15/16"	9.19	4.73	13.69
MNCSL3646	5.40	15-7/8"	48-15/16"	10.54	5.40	15.42
MNCSL3650	6.06	15-7/8"	54-15/16"	11.89	6.06	17.15
MNCSL3656	6.72	15-7/8"	60-15/16"	13.23	6.72	18.88
MNCSL3660	7.38	15-7/8"	66-15/16"	14.58	7.38	20.61
MNCSL4020	2.48	18-7/8"	18-15/16"	4.52	2.48	7.75
MNCSL4026	3.27	18-7/8"	24-15/16"	6.12	3.27	9.73
MNCSL4030	4.06	18-7/8"	30-15/16"	7.71	4.06	11.71
MNCSL4036	4.84	18-7/8"	36-15/16"	9.31	4.84	13.69
MNCSL4040	5.63	18-7/8"	42-15/16"	10.90	5.63	15.67
MNCSL4046	6.41	18-7/8"	48-15/16"	12.50	6.41	17.65
MNCSL4050	7.20	18-7/8"	54-15/16"	14.09	7.20	19.63
MNCSL4056	7.99	18-7/8"	60-15/16"	15.69	7.99	21.61
MNCSL4060	8.77	18-7/8"	66-15/16"	17.28	8.77	23.59
MNCSL4620	2.88	21-7/8"	18-15/16"	5.23	2.88	8.73
MNCSL4626	3.79	21-7/8"	24-15/16"	7.08	3.79	10.96
MNCSL4630	4.70	21-7/8"	30-15/16"	8.92	4.70	13.19
MNCSL4636	5.61	21-7/8"	36-15/16"	10.77	5.61	15.42
MNCSL4640	6.52	21-7/8"	42-15/16"	12.61	6.52	17.65
MNCSL4646	7.43	21-7/8"	48-15/16"	14.46	7.43	19.88
MNCSL4650	8.35	21-7/8"	54-15/16"	16.30	8.35	22.11
MNCSL4656	9.26	21-7/8"	60-15/16"	18.15	9.26	24.34
MNCSL4660	10.17	21-7/8"	66-15/16"	19.99	10.17	26.56
MNCSL5020	3.27	24-7/8"	18-15/16"	5.94	3.27	9.71
MNCSL5026	4.31	24-7/8"	24-15/16"	8.04	4.31	12.19

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
New Construction Sliding Windows (Glastra/Wood) Continued						
MNCSL5030	5.34	24-7/8"	30-15/16"	10.13	5.34	14.67
MNCSL5036	6.38	24-7/8"	36-15/16"	12.23	6.38	17.15
MNCSL5040	7.42	24-7/8"	42-15/16"	14.32	7.42	19.63
MNCSL5046	8.45	24-7/8"	48-15/16"	16.42	8.45	22.11
MNCSL5050	9.49	24-7/8"	54-15/16"	18.51	9.49	24.59
MNCSL5056	10.53	24-7/8"	60-15/16"	20.61	10.53	27.06
MNCSL5060	11.56	24-7/8"	66-15/16"	22.70	11.56	29.54
MNCSL6020	4.06	30-7/8"	18-15/16"	7.36	4.06	11.67
MNCSL6026	5.35	30-7/8"	24-15/16"	9.95	5.35	14.65
MNCSL6030	6.63	30-7/8"	30-15/16"	12.55	6.63	17.63
MNCSL6036	7.92	30-7/8"	36-15/16"	15.14	7.92	20.61
MNCSL6040	9.21	30-7/8"	42-15/16"	17.74	9.21	23.59
MNCSL6046	10.49	30-7/8"	48-15/16"	20.34	10.49	26.56
MNCSL6050	11.78	30-7/8"	54-15/16"	22.93	11.78	29.54
MNCSL6056	13.07	30-7/8"	60-15/16"	25.53	13.07	32.52
MNCSL6060	14.35	30-7/8"	66-15/16"	28.12	14.35	35.50

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Sliding Doors: Fixed-Active or Active-Fixed (Complement All Glastra Units)						
V4PD5068	11.36	21-13/16"	75"	22.50	11.36	32.85
V4PD50610	11.66	21-13/16"	77"	23.15	11.66	33.68
V4PD5080	13.78	21-13/16"	91"	27.73	13.78	39.46
V4PD6068	14.49	27-13/16"	75"	28.24	14.49	39.47
V4PD60610	14.87	27-13/16"	77"	29.06	14.87	40.47
V4PD6080	17.58	27-13/16"	91"	34.80	17.58	47.42
V4PD8068	20.74	39-13/16"	75"	39.72	20.74	52.72
V4PD80610	21.29	39-13/16"	77"	40.88	21.29	54.05
V4PD8080	25.16	39-13/16"	91"	48.95	25.16	63.34
Sliding Doors: Fixed-Fixed-Active or Active-Fixed-Fixed (Complement All Glastra Units)						
V4PD9068	15.46	29-11/16"	75"	27.93	15.46	59.35
V4PD90610	15.87	29-11/16"	77"	28.74	15.87	60.84
V4PD9080	18.76	29-11/16"	91"	34.42	18.76	71.29
Sliding Doors: Fixed-Active-Fixed (Complement All Glastra Units)						
V4PD9068	14.53	27-57/64"	75"	27.93	14.53	59.35
V4PD90610	14.91	27-57/64"	77"	28.74	14.91	60.84
V4PD9080	17.63	27-57/64"	91"	34.42	17.63	71.29
Sliding Doors: Fixed-Active-Active-Fixed (Complement All Glastra Units)						
V4PD12068	28.08	53-59/64"	75"	28.72	28.08	79.22
V4PD120610	28.83	53-59/64"	77"	29.55	28.83	81.22
V4PD12080	34.08	53-59/64"	91"	35.39	34.08	95.17

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CLEAR OPENING DIMENSIONS

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Sliding Doors: 2-wide (Complement Glastra/Wood Units)						
GAU41166M	11.30	21-1/2"	75-11/16"	23.44	11.30	32.57
GAU51166M	14.45	27-1/2"	75-11/16"	29.36	14.45	39.20
GAU71166M	20.76	39-1/2"	75-11/16"	41.21	20.76	52.45
GAU41180M	13.69	21-1/2"	91-11/16"	28.72	13.69	39.13
GAU51180M	17.51	27-1/2"	91-11/16"	35.97	17.51	47.09
GAU71180M	25.15	39-1/2"	91-11/16"	50.48	25.15	63.00
Sliding Doors: 3-wide (Complement Glastra/Wood Units)						
GAU7766M	11.30	21-1/2"	75-11/16"	35.16	11.30	50.24
GAU9166M	14.45	27-1/2"	75-11/16"	44.04	14.45	60.18
GAU12166M	20.76	39-1/2"	75-11/16"	61.81	20.76	80.05
GAU7780M	13.69	21-1/2"	91-11/16"	43.08	13.69	60.35
GAU9180M	17.51	27-1/2"	91-11/16"	53.96	17.51	72.29
GAU12180M	25.15	39-1/2"	91-11/16"	75.73	25.15	96.16

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Inswing Doors (Complement Glastra/Wood Units)						
UXD2680M	16.52	25-3/4"	92-3/8"	10.83	17.72	20.07
UXD3080M	20.37	31-3/4"	92-3/8"	14.19	21.57	24.05
UXD2666M	13.65	25-3/4"	76-11/32"	8.68	14.65	16.70
UXD3066M	16.83	31-3/4"	76-11/32"	11.37	17.83	20.01
Inswing Doors: 2-wide (Complement Glastra/Wood Units)						
UXD41166M	13.65	25-3/4"	76-11/32"	17.35	14.65	32.81
UXD51166M	16.83	31-3/4"	76-11/32"	22.74	17.83	39.44
UXD41180M	16.52	25-3/4"	92-3/8"	21.65	17.72	39.43
UXD51180M	20.37	31-3/4"	92-3/8"	28.38	21.57	47.39

Product #	Sq. Ft. Clear Opg.	Clear Opening		Sq. Ft. D.L.O.	Sq. Ft. Vent	Sq. Ft. of Unit Frame Dim.
		Width	Height			
Outswing Doors (Complement Glastra/Wood Units)						
UXD2666M	13.26	25-5/32"	75-29/32"	8.44	14.31	16.72
UXD3066M	16.42	31-5/32"	75-29/32"	11.14	17.48	20.03
UXD2680M	16.06	25-5/32"	91-29/32"	10.52	17.33	20.08
UXD3080M	19.89	31-5/32"	91-29/32"	13.89	21.16	24.06
Outswing Doors: 2-wide (Complement Glastra/Wood Units)						
UXD41166M	13.26	25-5/32"	75-29/32"	16.88	14.31	32.57
UXD51166M	16.42	31-5/32"	75-29/32"	22.28	17.48	39.20
UXD41180M	16.06	25-5/32"	91-29/32"	21.04	17.33	39.13
UXD51180M	19.89	31-5/32"	91-29/32"	27.78	21.16	47.09

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