

U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 1

U-MAX[™] 100 Front Double Glazed - 34mm Pocket



FEATURES:

- 100mm Frame Depth
- 60mm Sight Line generally
- Optional Low profile 44mm Outer Frame
- Glass Plane-Front
- Compatible with 100mm Centre Glazed allowing glass in different planes
- Designed for Thermal Break Applications
- · Can be offered Non-broken to maintain visual unity
- Compliant with all Australian standards
- · Accepts 24mm to 28mm IGU's
- Single Glazed Spandrel adaptor option
- Flush Glazed with 12mm Glass Bite in all configurations
- Eliminates ugly visible drain slots in the face of horizontal frame members
- Can be Internal or External glazed
- Awning & Casement sash options
- Tilt & Turn Sash
- Multi Locking Awning & Casement options
- U-Max Sliding door compatible
- U-Max Bifold Door compatible
- Hinged, Pivot, Sliding & Multi sliding door tracks
- Dry Glazed with High performance Santoprene Gaskets o Anti Stretch Gaskets
- o Anti-Dropout Gasket Design
- Suited to wet glazed if preferred
- Watershed -Concealed Transom drainage system
- · Screw fixing in front of glazing pocket to support transom

FABRICATION:

- Easy Screw Flute Joinery Fabrication
- Simple Panelized Assembly

PRODUCT APPLICATIONS:

- Shopfront, Ribbon Windows or Punched Openings
- Generally Single Span, limited to 6.5 metre high applications

This system may also be ordered without polyurethane filled cavities for non-thermal applications & is completely compatible with other Max framing systems







U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 2 **Extrusion ID** ្រុប ഹ സ VN 107/ ട് C9259U 100 FDG Deep Mullion 니느 جا C9250U C9256U 100 x 60 FDG Frame 100 x 60 FDG Internal Transom C9252 U C9258 FDG External Bead സ ß FDG Cover Bea いろ ស្រា ഹ C9260U 100 FDG Shallow Mullion ഹ あの പ C9257U VU സ 100 x 60 FDG Cover Transom C9251U C9568 100 x 60 FDG External Head/Sill S/M Blind Mullion C9254 ഹ lΩζ 100 FDG Internal Bead ন্দ S ß ഗ ഗ C9213U 100 x 60 Hinge Head C8143U حا 100 x 60 FDG Drained Transom C9253U 100 x 60 FDG Internal Head/Sill സ സ 2.0 സ്പ C9266U โก๊บไ <u>b</u> Build In Filler C9255U



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100 x 44 FDG External Head/Sill

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C9261U

C9262U

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C9263U

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C9215U

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100 x 44 Hinge Head

100 FDG Internal Head

100 x 44 FDG Frame









C9229U 100 Threshold Open OUT



C9230U 100 Threshold Open IN



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Hinge Backing Plate



100 FDG Pocketed filler C9527U Build In Bracket <u>___</u>



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C9204U









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SCH0161615 Channel as Spandrel Adaptor





v $\sim \sim$ C9211U 120 x 64 S/Mating Midrail പ്ര







CH9573

CH1317

100 Nailing Fin Subsill end cap

Cornerstake C9241U Sash

CH9524

CH9526

SANT

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CH9507

SANT

Green backing

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60mm Jamb

Standard Mullion









A 3 way configiration typically occurs where an internal partition wall adjoins. In this situation the front glazed adaptor cannot be used on the internal side.



90' corner 3mm folded sheet with 3mm packer bedded into silicone can form an effective corner.



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Splayed corner

6mm folded aluminium plate sleeved inside mullion, siliconed into place. Angles less than 160' would require mullions to be spread further apart.





U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 6 90 Deg Silicone Butt Corner



Silicone butt corners can be done several ways & may not always be aesthetically pleasing as it shows a wide black line in the corner from the line of silicone or IGU spacer



Inset Awning Sash

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Maximum Sash weights generally are 30kg for a single chain winder & 70kg for a dual chain winder & 70kg with stays.

- Max Sash Height: 1600mm •
- Min Sash Width: 450mm
- Max Sash Width: 1200mm
- Glass: 6mm 28mm •

Please refer the Sashes segment in the catalogue for further information on sash limits & hardware selection.







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60mm Hinge Head & Winder Sill

60mm Jamb





U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 7 60mm Hinge Head & Winder Transom Alternative 44mm Hinge Head & Winder Sill with Motorised winder & concealed winder box (50kg sash weight)

Inset Casement Sash







Left Hand sash depicted Maximum sash weights generally are 30kg which is limited by the hardware.

 Maximum sash width is 900mm.
 Glass: 6mm - 28mm
 Please refer the Sashes segment in the catalogue for further information on sash limits & hardware selection.







44mm Head & Sill

44mm Jamb - "Closing Side"





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Inset Casement Sash with 60mm Head, Sill & Drained Transom

46mm Overlap Awning Sash

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The Overlap Sash depicted requires awning stays but also elegantly suits the hinge head & winder sill for a lower profile appearance.

Maximum Sash weights generally are 30kg for a single chain winder & 70kg for a dual chain winder & 70kg with stays.

- Max Sash Height: 1600mm
- Min Sash Width: 450mm
- Max Sash Width: 1200mmGlass: 6mm 35mm

Please refer the Sashes segment in the catalogue for further information on sash limits & hardware selection. 60mm Head & Sill







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46mm Overlap Awning Sash with drained Transom

60mm Hinge Head & Winder Sill

46mm Overlap Casement Sash



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DO+14

Sash





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Left Hand sash depicted Maximum sash weights generally are 30kg, limited by the hardware. Maximum sash width is 900mm. Glass 6mm - 35mm Please refer the Sashes segment in the catalogue for further information on sash limits & hardware selection.









Closing Side







Glazed

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U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 10 Tilt & Turn Sash (Tilt First) 44mm Head & Sill 44mm Frame shown for clarity, C9250U 60mm frame can also be used M _____ ഹ C9233U 5 -20-TF C9261l -CH9520 Outside ไปไ CH9565 Inside 3 -CH9816 Chevron (Sash) -CH9815 Chevron (Adaptor) -C8100 Transmission Bar Maximum Sash weights generally & Keep top & bottom as are 150kg with concealed hardware. necessary. Refer Hardware chart Refer Hardware specification for quantity Heavier hardware options are available Handle Operated key locking -CH9816 Chevron (Sash)

- Initial tilt in, then key override to hinge . as standard function
- Sash height must exceed Sash width - a tilt only solution may allow this. Min Sash Height: 555 (590 daylight opening) Co-ex backing seal-
- Min Sash Width: 500 (590 daylight opening)
- Max Sash Width: 1300 (1335 daylight opening)
- Glass: 6mm 35mm
- 150kg sash weight
- Limited adaption of a flyscreen, • will fix on face of window. Consider 100 centre glaze
- Please refer the Sashes segment in the catalogue for further information on sash limits & hardware selection.









Tilt & Turn Sash with drained Transom 44mm Frame shown for clarity, C9250U 60mm frame can also be used

-CH9815 Chevron (Sash) -CH9816 Chevron (Adaptor) -C8100 Transmission Bar & Keep top & bottom as necessary. Refer Hardware chart

-CH810159 C/Stake (5.9mm)

Co-ex TNT Inner Seal

-CH8101155 C/Stake (15.5mm)

CH9875 Deep watersheds





44mm Head & Sill

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Multi Locking Awning Sash

44mm Frame shown for clarity, C9250U 60mm frame can also be used





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-109.5-

Multi Locking Casement Sash 44mm Frame shown for clarity, C9250U 60mm frame can also be used Left Hand Sash as v viewed from Outside.



-109.5

44mm Head & Sill



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Hinged Door Open OUT

Left Hand Open OUT







Pair of Open OUT Doors with Plain & Pivot Stiles Best suited to commercial applications where doors are not exposed



Pair of Open OUT Doors with Rebated Weathered Stiles









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Hinged Door Open IN







U-Max Framing Systems: U100FDG - 14

Pivot Doors

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Left Hand Pivot Door



Pair of Pivot Doors with Plain & Pivot Stiles

Best suited to commercial public access applications where doors are not exposed & weathering is not a priority as these doors cannot use a weathered threshold











U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 15 Sliding Bottom Track - 300kg panel weight

Overhead Sliding Track - 250kg Panel Weight









U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 16 Sliding Door with Closing Jamb in 100 Fixed framing

Door Midrail Options



Sliding Door closing to mullion. 70 x 25 x 1.5 angle laid across back for aesthetics.

Note that C9381U is shown (thermally broken), technically it does not require it in this situation as the channel is already inside the thermal break line of the frame.





120mm Door Midrail



C9448U





U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 17 Nailing Fin Subsill with timber reveals Nailing Fin Subsill & Filler with rebated reveals -Flashing over by others if no eave or in timber / metal clad application শ্ খ্যী C9205U C9205U 4 C9261U C9261U സ സ VA υĩa -CH9529 Subsill end cap ിറ്റി ഹ sealed over V ഹ 9252 C9262L

CH9526

C9238

-Saw cut through back

Jamb detail showing rebated reveal

of rebated reveal

LCH952

C9252 C9252 C9252 C9252 C9252 C9238

Jamb detail showing conventional architrave



C9608U In-Line reveal adaptor

Replacing existing timber windows, or in new construction, fitting into a daylight opening (like cavity brick or precast, when revealling an in-linreveal adaptor eliminates the need to angle trim the opening externally, creating a neater overall appearance. This can also be used with all 100 framing systems. 44mm jambs can be used to reduce the sight line.



C9527U Build In Bracket

Can be used full length or in nom 100mm segments @ 450 centres & adjacent to transoms. This bracket enables fixings at the back of the frame where an internal finish (plaster / lining) conceals the bracket after installation.



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One Piece Sub Head (50 deep) 20mm clearance insufficient to install from inside.

S C9233U Ő 20 Clearance 20 CH9565 Inside 48 C9250L CH9520 R Outside Subframe O/A п ame Height ഹ C9251U -CH9501 4mm Wedge സപ്പ C9236U CH9520

Subsill Captive Seal

2 Part Sub Jamb



The use of Sub frames & subsills

Commercial window systems are designed for drainage through the system. Horizontal members act as "gutters", collecting water & allowing it to flow to Vertical members which act as "downpipes".

It then becomes mandatory to adequately flash frames at the sill - this can be done via a folded flashing, impervious rebate, but usually by the use of a subsill.

The subsill allows easy preparation of an opening& ready access to subsill fixings so they can be appropriately sealed prior to frame installation.

A subsill is fitted with a stop end, which contains water within the subsill& is fitted & sealed around during the fitting of a subsill. Without this, water would run to the ends of the subsill & leak back into the building.

Sub heads are used to allow for either vertical movement or as a more efficient means of installation, especially in above ground installations where it might be desirable to install frames from inside.

Sub frames likewise can be used in this situation, but are especially needed in ventilated cavities (like cavity brick) where there is airflow that may allow water to be driven over subsill stop ends, or it is difficult to contain water within a window opening.

It must be remembered that all window installations require a continuous internal seal especially & the use of subsills & sub frames are especially useful in achieving this.

Principles adopted in General Arrangement Drawings







① Dotted lines represent typically 100mm long pieces to brace outer frame members or as backings for fixings

Solid lines represent continuous extrusions. Jambs are recommended for use with continuous fillers to maintain frame tolerances& to allow continuous caulk lines.

Pocketed fillers preferred for support behind jambs, especially on door frames, on heads within a subhead, to stop potential water tracking& at 1/4 points on sill profiles to support the sill from weight of glass& fixings.

Lower profile sills & heads however require a flat filler & are depicted this way on drawings.

Hinge backing plates should be used in 200mm segments to support hinges & door tracks where applicable

Rebate details are typical only & indicate internal seals against the back of subsills to exclude air & water entry beyond the back of frames, subsill. Fixing methods vary considerably & are not detailed.







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Mullion Structural Tables

U-Max 100 STD FDG C9250, C9255 **Mullion Combination:**



These tables use theoretical section properties. The resulting Serviceability and Ultimate should be read in conjunction with the requirements of AS1170.

- Note the following:
- Maximum Stress = 110Mpa
- Serviceability based on Span/250

- Italics indicate where Serviceability is limited by Ulltimate.

This chart is to be used as a guide only. Where Serviceability exceeds 3kPa or for more information, contact Capral.

Frame Height (mm)		Design Wind Pressure (Pa)								
2200	S	2995	2471	2140	1921	1775	1682	1630	1613	
	U	4171	3426	2951	2634	2420	2281	2201	2175	
2400	S	2287	1877	1615	1439	1317	1234	1180	1149	
	U	3465	2833	2426	2150	1958	1825	1736	1685	
2600	S	1787	1461	1251	1107	1007	935	885	852	
	U	2924	2383	2032	1791	1620	1498	1411	1352	
2800	S	1423	1160	989	872	788	727	683	652	
	U	2500	2032	1727	1516	1364	1254	1172	1113	
3000	S	1152	937	797	699	629				
	U	2162	1753	1486	1300	1166				
3200	S	946	768	651						
	U	1888	1528	1293						
3400	S	786	637							
	U	1662	1344							
3600	S	661								
	U	1474								
Mullion Centres (mm)		800	1000	1200	1400	1600	1800	2000	2200	

Mullion Structural Tables

Mullion Combination:	U-Max 100 Split FDG C925
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	These tables use theoretical se

Note the following:



- Maximum Stress = 110Mpa - Serviceability based on Span/250 - Italics indicate where Serviceability is limited by Ulltimate.

This chart is to be used as a guide only. Where Serviceability exceeds 3kPa or for more information, contact Capral.

Frame Height (mm)		Design Wind Pressure (Pa)								
2200	S	3913	3229	2796	2510	2319	2198	2129	2108	
	U	5565	4570	3937	3514	3229	3043	2937	2902	
2400	S	2988	2453	2110	1880	1721	1612	1541	1501	
	U	4616	3775	3233	2865	2609	2432	2314	2245	
2600	S	2335	1909	1634	1447	1315	1222	1156	1113	
	U	3891	3171	2704	2383	2156	1993	1878	1800	
2800	S	1859	1516	1293	1139	1030	950	893	852	
	U	3323	2701	2295	2015	1814	1666	1558	1480	
2000	S	1505	1224	1041	914	822	755	705	668	
3000	U	2870	2328	1973	1726	1548	1415	1316	1241	
3200	S	1236	1003	851	745	668	611			
	U	2503	2027	1714	1496	1337	1218			
3400	S	1028	832	705	615					
3400	U	2201	1780	1503	1309					
3600	S	864	699							
	U	1951	1575							
3800	S	733								
	U	1740								
4000	S	627								
	U	1561								
Mullion Centres (mm)		800	1000	1200	1400	1600	1800	2000	2200	

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ection properties. The resulting Serviceability and Ultimate should be read in conjunction with the requirements of AS1170.





U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 20

Mullion Structural Tables

Mullion Combination: Max 100FDG SM Blind Mullion



These tables use theoretical section properties. The resulting Serviceability and Ultimate should be read in conjunction with the requirements of AS1170.

- Note the following:
- Maximum Stress = 110Mpa
- Serviceability based on Span/250

- Italics indicate where Serviceability is limited by Ulltimate.

This chart is to be used as a guide only. Where Serviceability exceeds 3kPa or for more information, contact Capral.

2200 2400	S	1486	1246	1101	1014	967	952	952	952
	U	3594	2994	2627	2403	2279	2238	2238	2238
	S	1066	886	774	702	657	632	625	625
	U	2856	2359	2048	1846	1718	1646	1622	1622
2600	S	792	653						
	U	2324	1909						
2800	S	605							
	U	1928							
Mullion Centres (mm)		800	1000	1200	1400	1600	1800	2000	2200

Glazing Methodology

This system has been designed to self drain within the system via a patented watershed component in transom, which is traditionally the area most prone to leakage in commercial systems.

Most other commercial systems attempt to deal with drainage through ugly external drain slots or rely on silicone to stop water entry.

Using "top loaded" high performance co-extruded wedges which are shrink resistant, the system allows easy in-factory fitting of backing wedges& easy fitting of wedges on the side from which the system is being glazed.

Wedges are colour coded according to thickness for ease of identification, refer the chart below.

This page describes one method of glazing. Wet Glazing or combinations of wet and dry glazing can be done. For further information on Glazing methodology & frame sealing please refer the Information pages in the U-Max Manual.





Preparing the Glazing Rebate:

- a. Ends of horizontal frame joints are end buttered prior to assembly.
- b. Fit the watershed device while assembling transoms
- c. Seal into the captive groove on the transom's vertical rebate. This is done on top & below the transom.
- d. Seal the back end end of watershed within the pocket.
- DO not seal in front of Watershed as infiltrated water is drained through here.

Backing Wedge (rebate size) Fitting method:

Backing wedges can be fitted either side dependant on which side it is being glazed: outside for internal glaze or inside for external glaze. The diagram depicted is externally glazed, so backing wedges would be factory fitted to the inside.

Wedges size appropriate to glass thickness should be cut approx 18mm/metre oversize from DO (Daylight opening). Vertical wedges butt between horizontal wedges & are bunched

towards corners. Pull corners back 50mm & bed into sealant& apply sealant to the butted ends.

Site Preparation of the glazing rebate:

Clean the glazing rebate & wipe glazing grooves Check the watershed devices are in place& overseal where appropriate.

Place setting blocks at 1/4 points. Setting blocks should be no closer than 150mm from the edge of glass in normal conditions.

Wedge Fitting method on the glazing side

Wedges size appropriate to glass thickness should be cut approx 18mm/metre oversize from DO (Daylight opening). If glazing internally, repeat the method of sealing corners as per backing wedges.





U-MAXTM 100 Front Double Glazed

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U-Max[™] THERMAL BREAK 100 x 60mm FRONT DOUBLE GLAZED - 34mm Pocket U-Max Framing Systems: U100FDG - 21 Wedge glazing charts for Max Framing when different wedges are used, the smaller

wedge must go on the rebate side to allow room to fit the glazing bead





CH9505 CH9506 1mm wedge SANT 3mm wedge SANT Black backing Yellow backing



C9219 Spandrel adaptor achieves a 18mm pocket C9810 Spandrel adaptor achieves a 12mm pocket



CH9507 5mm wedge SANT Green backing

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CH9508 6mn wedge SANT Red backing

CH9509 7mm wedge SANT Blue backing

CH9510 9mm wedge SANT Purple backing

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Glass Rebate Glazing thickness Example wedge Gap wedge Gap 22mm 5/12/5 CH9507 5mm CH9509 7mm 6/12/5 CH9507 5mm CH9509 7mm 23mm 6/12/6 CH9507 5mm CH9507 24mm 5mm U-Max Framing CH9507 25mm 6.38/12/6 4mm CH9507 5mm 26mm 8/12/6 CH9506 3mm CH9507 5mm 5mm 27mm 8.38/12/6 CH9506 3mm CH9507 28mm 8/12/8 CH9505 1mm CH9507 5mm 29mm 8/12/8 CH9505 CH9506 1mm 3mm Spandrel Rebate Glazing Glass thickness Adaptor wedge Gap wedge Gap Glazing 3mm C9810 CH9507 7mm CH9507 5mm C9219 CH9506 5mm CH9509 7mm U-Max Spandrel (6mm C9219 CH9506 CH9507 8mm 5mm 5mm C9219 CH9503 CH9507 10mm 3mm 5mm



University of Tasmania, Newnham student apartments U-MAX[™] 100mm Front Double Glazed thermally broken frames with awning sash, a fully revealed window, fully factory-glazed with a captive wedge system