

**U-Max™ THERMAL BREAK SG182 Structural Glazed**  
**U-Max Framing Systems: USG182 - 1**

**U-Max™ SG182 Structural Glazed - 40mm Rebate**



**FEATURES:**

- 182mm Frame Depth
- Narrow 54mm face as a framing system
- Several Mullion combinations for strength
- Structural Glazed
- Integrates with Max 200 Front Glazed - 40mm pocket
- Accepts 32 - 34mm IGU's with 6.4 Backing tape
- Can incorporate single glazed spandrels
- External glazed
- Structural Glazed multi Locking Sash Option

**FABRICATION:**

- Easy Screw Flute Joinery Fabrication
- Back Notch machining of Head, Sill, Transom

**PRODUCT APPLICATIONS:**

- Shopfront, Ribbon Windows or Punched Openings - see 200 Front Capped
- **The** use of 4 sided structural glazing requires great attention to detail in the glazing of frames. Ideally frames are factory glazed in a clean, controlled atmosphere & dust free environment
- Glazing methodology, class cover & silicone bite should be referred to tape & silicone suppliers for suitability to the application

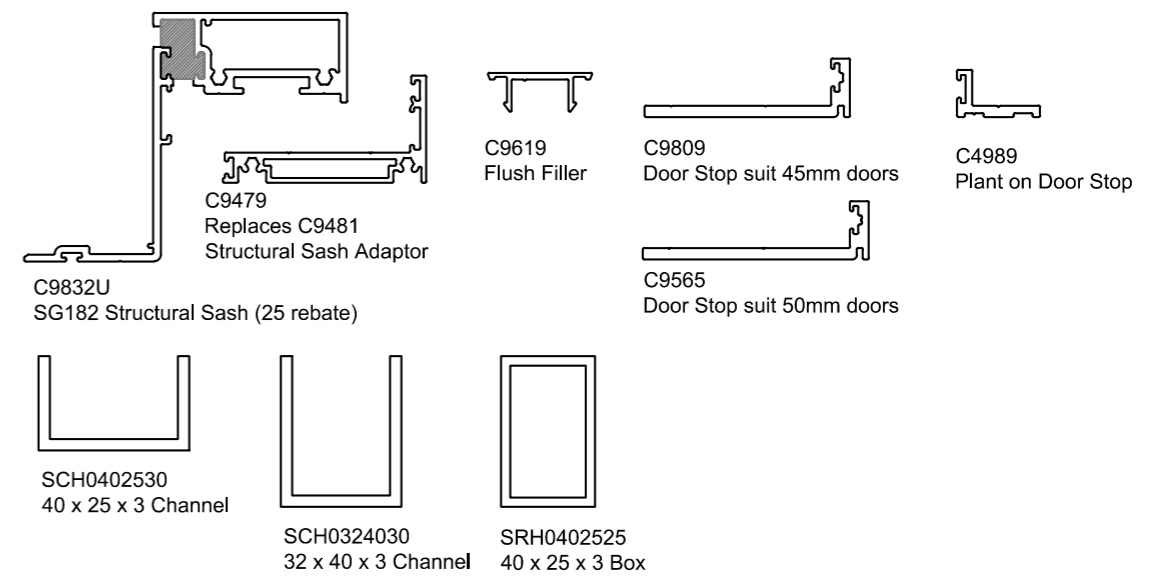
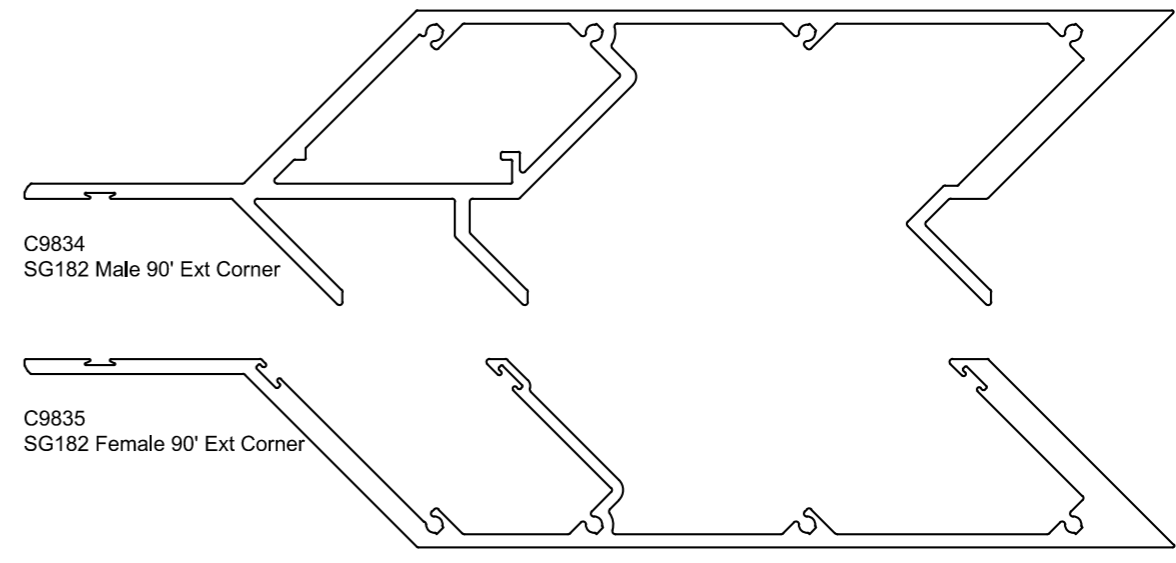
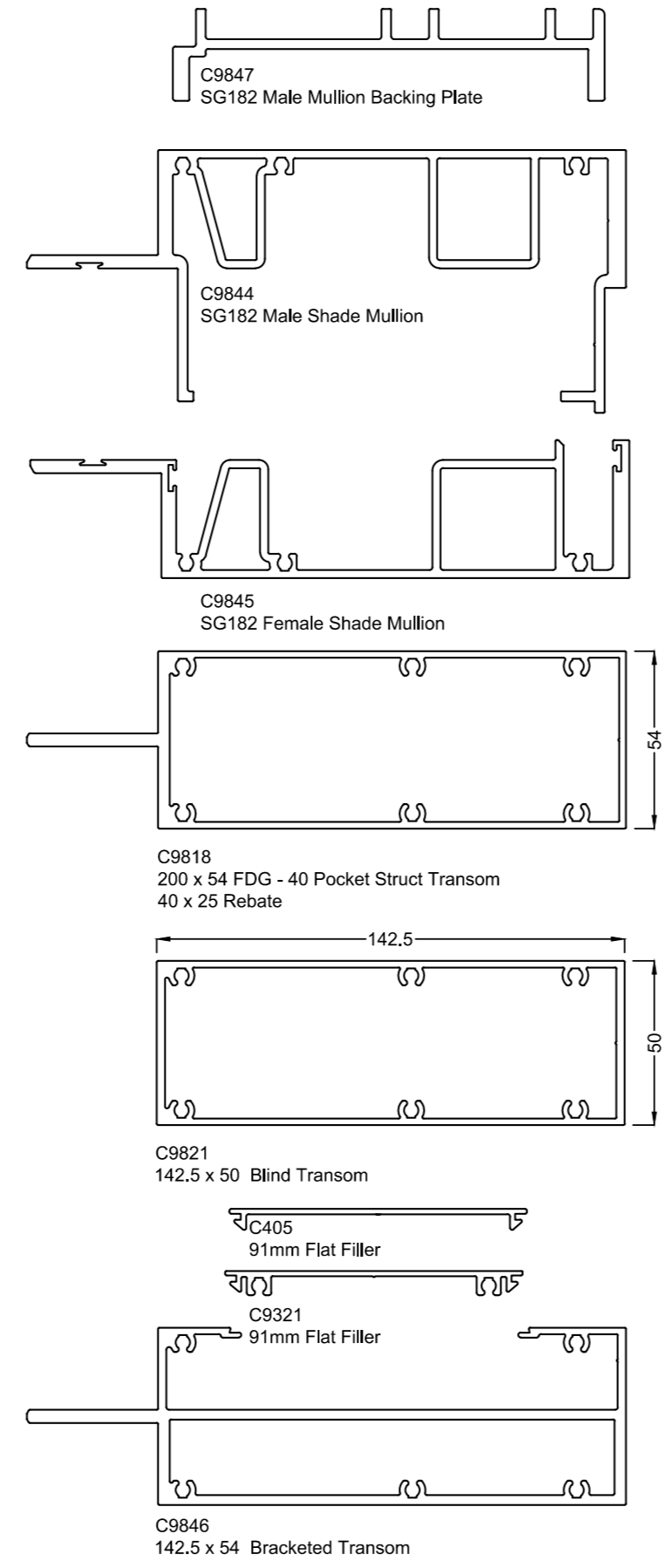
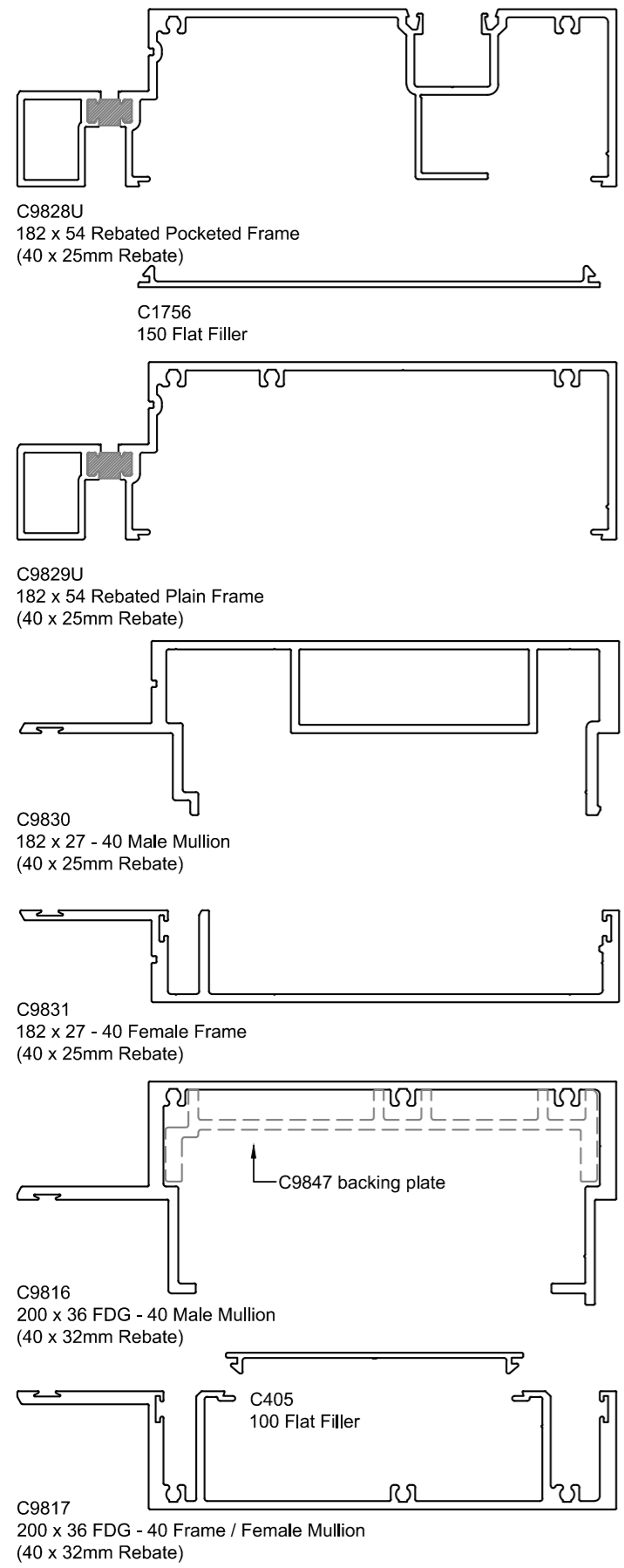
**LIMITATION:**

- External Glazed only
- Factory Glazed - not suited to site glazing
- Limited adaption to other suites

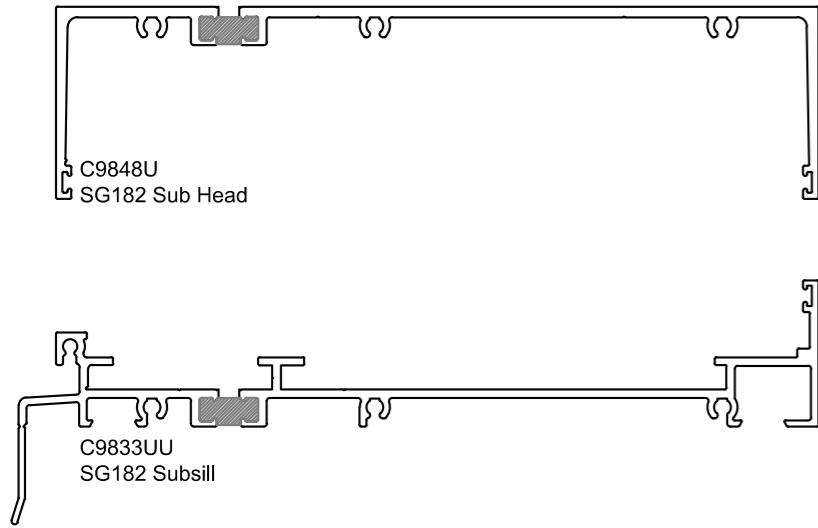
**ALTERNATIVES:**

- CW142 curtain wall (Thermally broken)

**U-Max™ THERMAL BREAK SG182 Structural Glazed**  
**U-Max Framing Systems: USG182 - 2**  
**Extrusion ID**

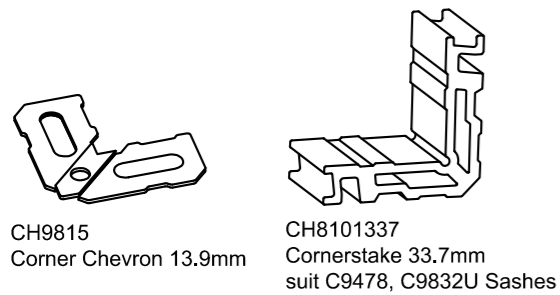


**U-Max™ THERMAL BREAK SG182 Structural Glazed**  
**U-Max Framing Systems: USG182 - 3**  
**Extrusion ID**



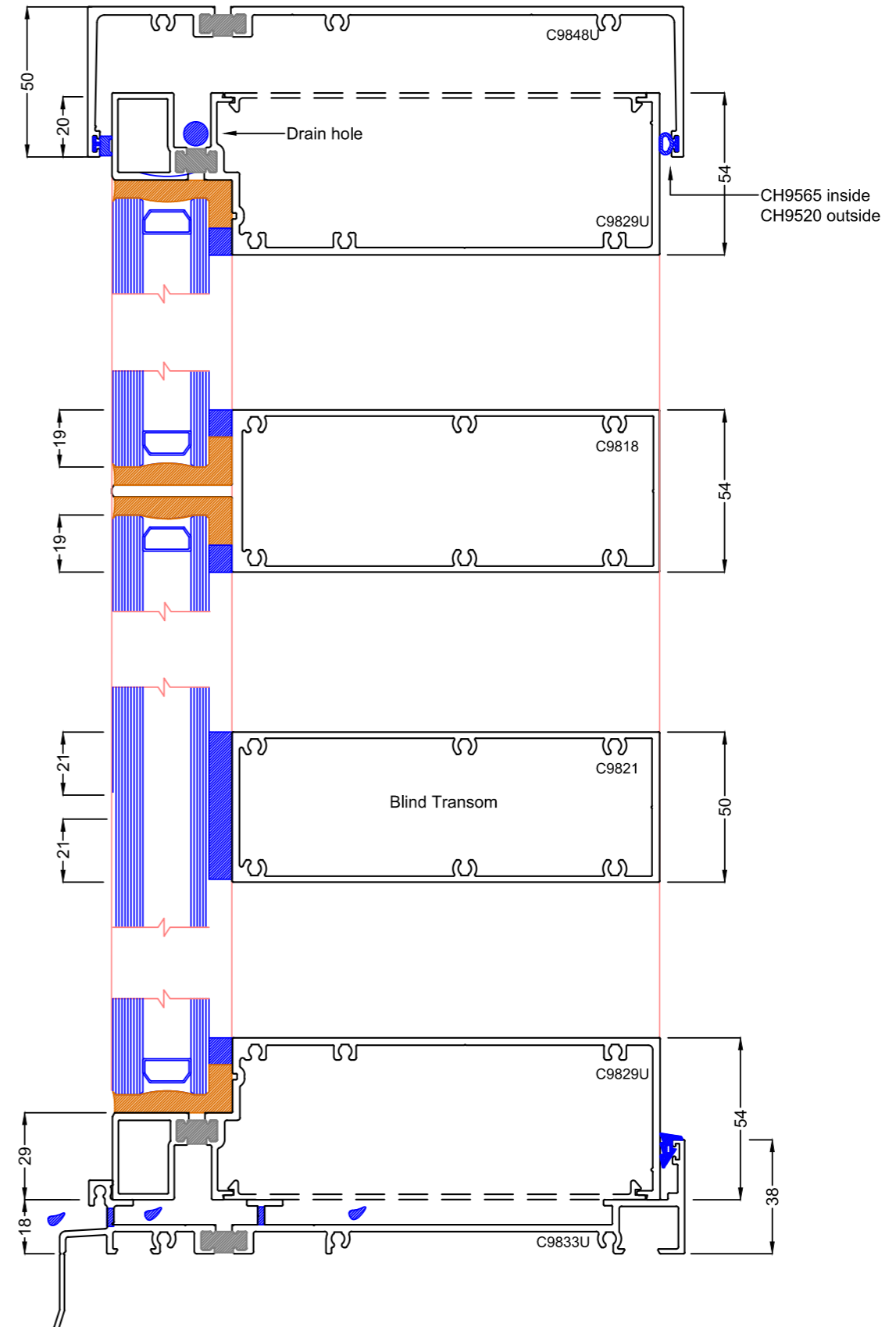
**Component ID**

- |                          |   |   |                                  |                           |                        |
|--------------------------|---|---|----------------------------------|---------------------------|------------------------|
|                          |   |   |                                  |                           |                        |
| CH9526<br>Expansion Seal | CH9627BLK (Black)<br>CH9627GRY (Grey)<br>Sushade Mullion Seal | CH9659BLK (Black)<br>CH9659GRY (Grey)<br>Dual Bulb Expansion Seal | CH9566<br>Stack Joint Drain Flap | CH9565<br>Co-ex Bulb Seal | CH13<br>Sash Bulb Seal |



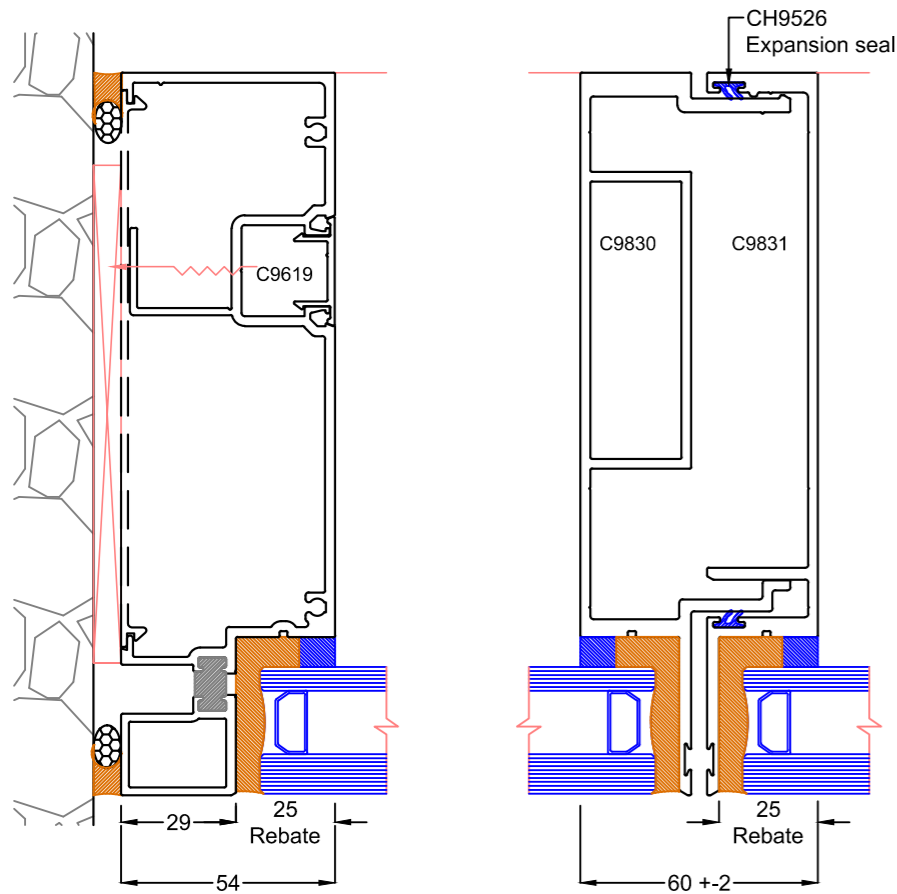
**Head & Sill detail**

The rebate depth of face of 25mm is common on all assemblies allowing it to be used in conjunction with C9832U structural glazed Sash.



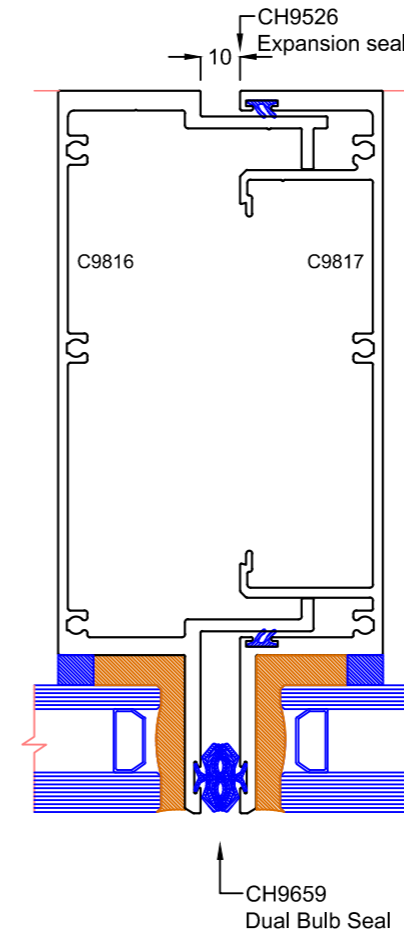
**U-Max™ THERMAL BREAK SG182 Structural Glazed  
U-Max Framing Systems: USG182 - 4  
Jamb & Mullion Detail as a Framing System**

The detail below & page prior details low profile structural frame members than what is typically used in the curtain wall detailing.  
The rebate depth of face of 25mm is common on all assemblies allowing it to be used in conjunction with C9832U structural glazed Sash.  
All profiles are compatible with the curtain wall assemblies deeper curtain wall assemblies if they need to be combined.



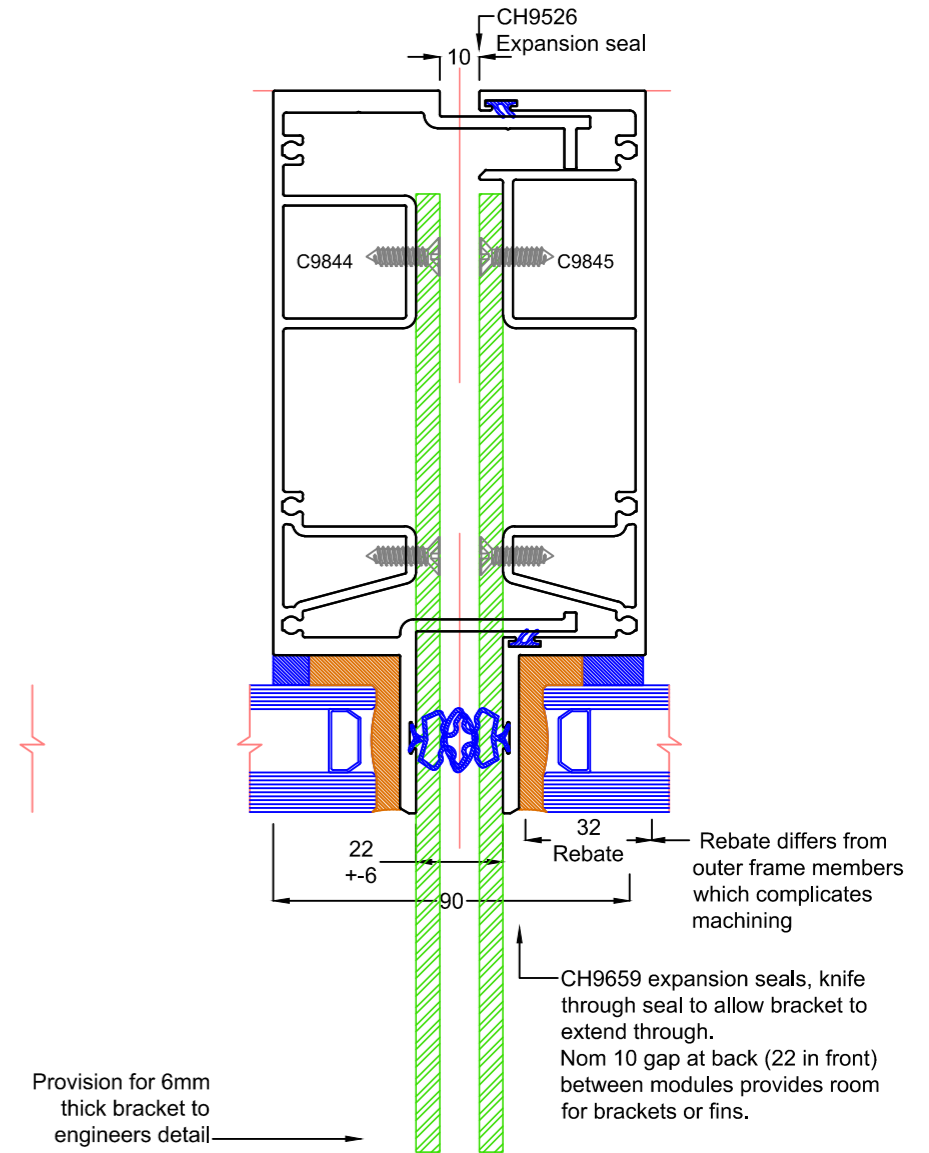
**Mullion Detail as a Curtain Wall**

The rebate depth of face of Mullions is 32mm & differs from the narrower faced mullions & horizontals which are 25mm. These profiles are not suited to the structural glazed sash.

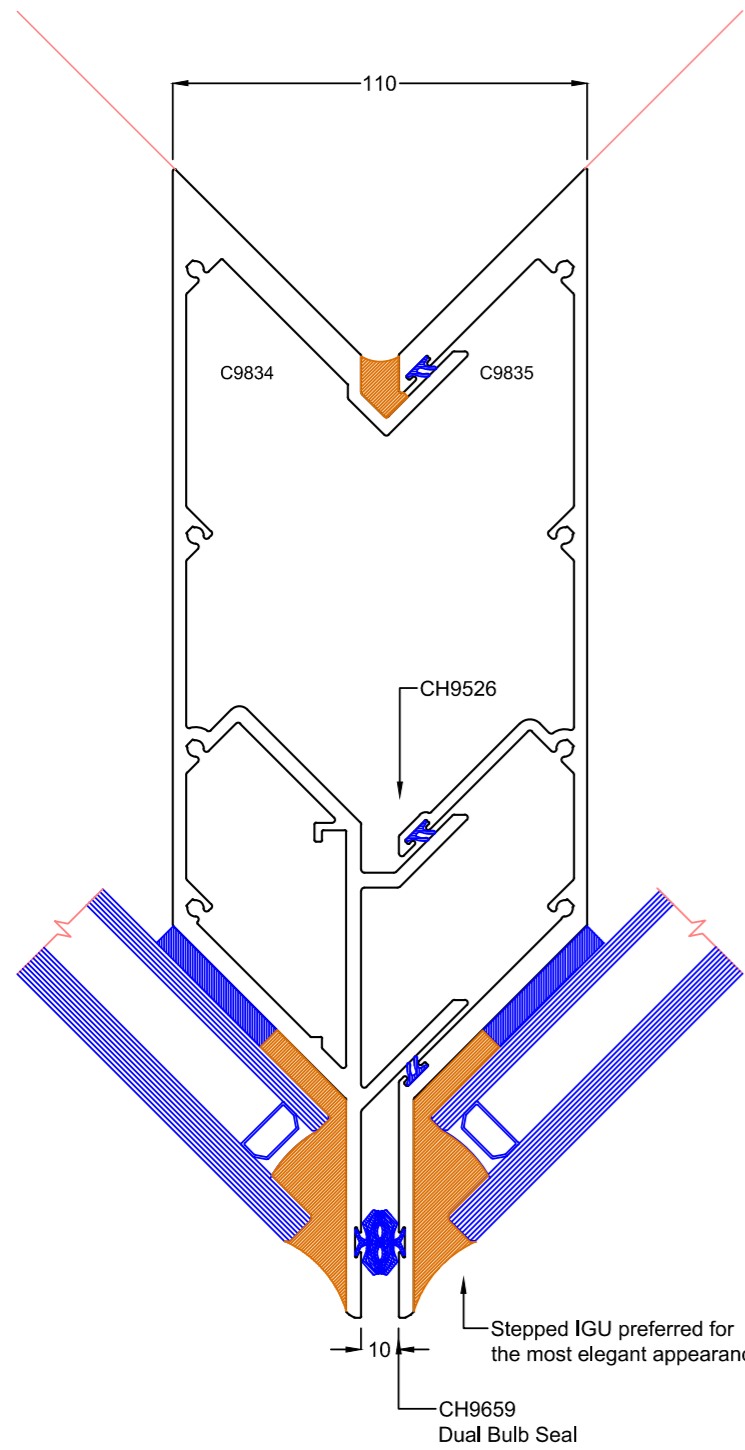


**C9844, C9845 Shadescreen Mullion**

The broader face & internal hollow allow brackets or fins to be side fixed into mullions. These profiles are not suited to the structural glazed sash.

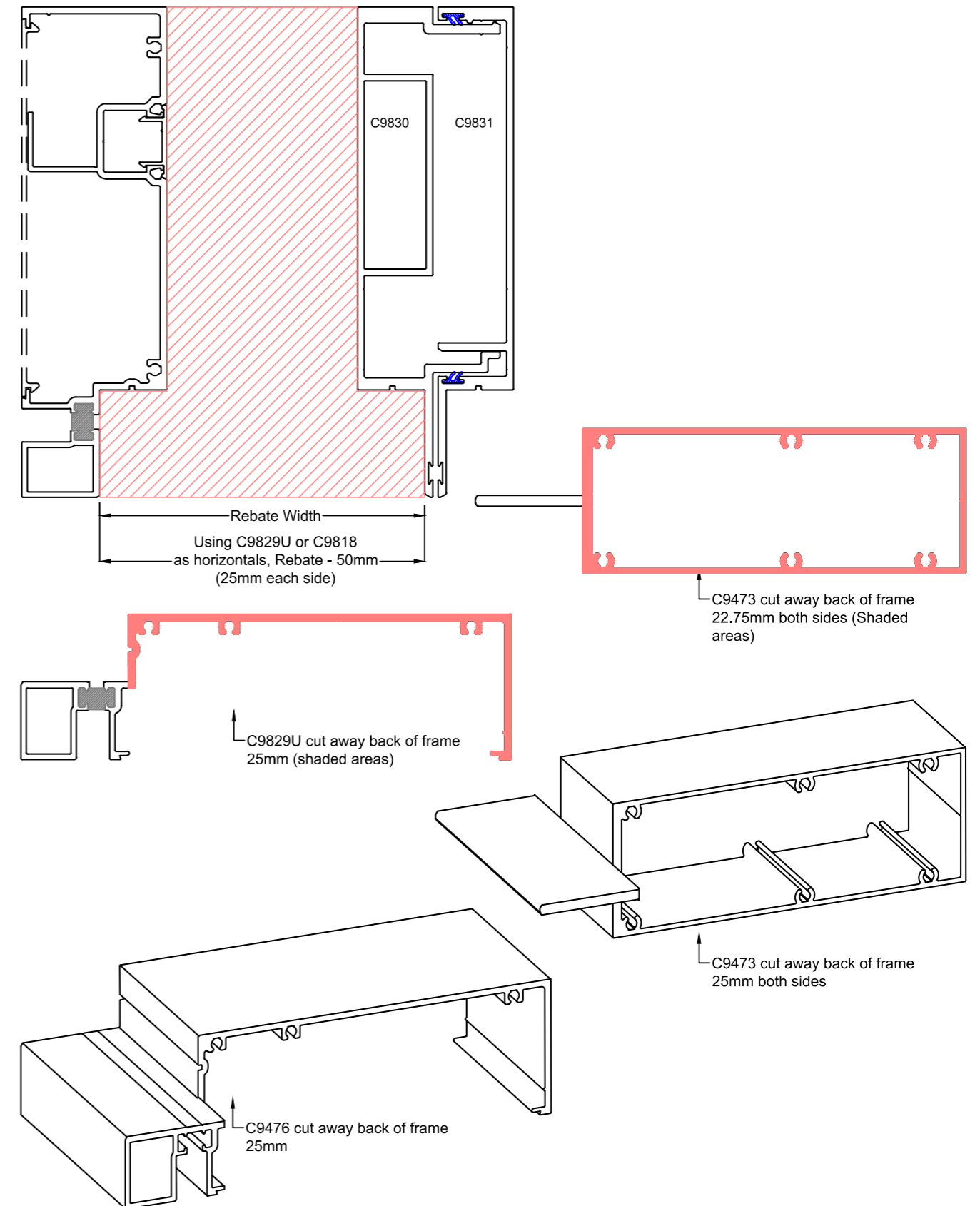


**U-Max™ THERMAL BREAK SG182 Structural Glazed**  
**U-Max Framing Systems: USG182 - 5**  
**90° External Corner**



**Machining Head, Sill & Transoms**

Horizontals are generally back notched 25mm from each end as detailed below. Note that Heavy Duty curtain wall mullions C9816, C9817, 9844, 9845 have 40 x 32mm rebates & machining changes accordingly.



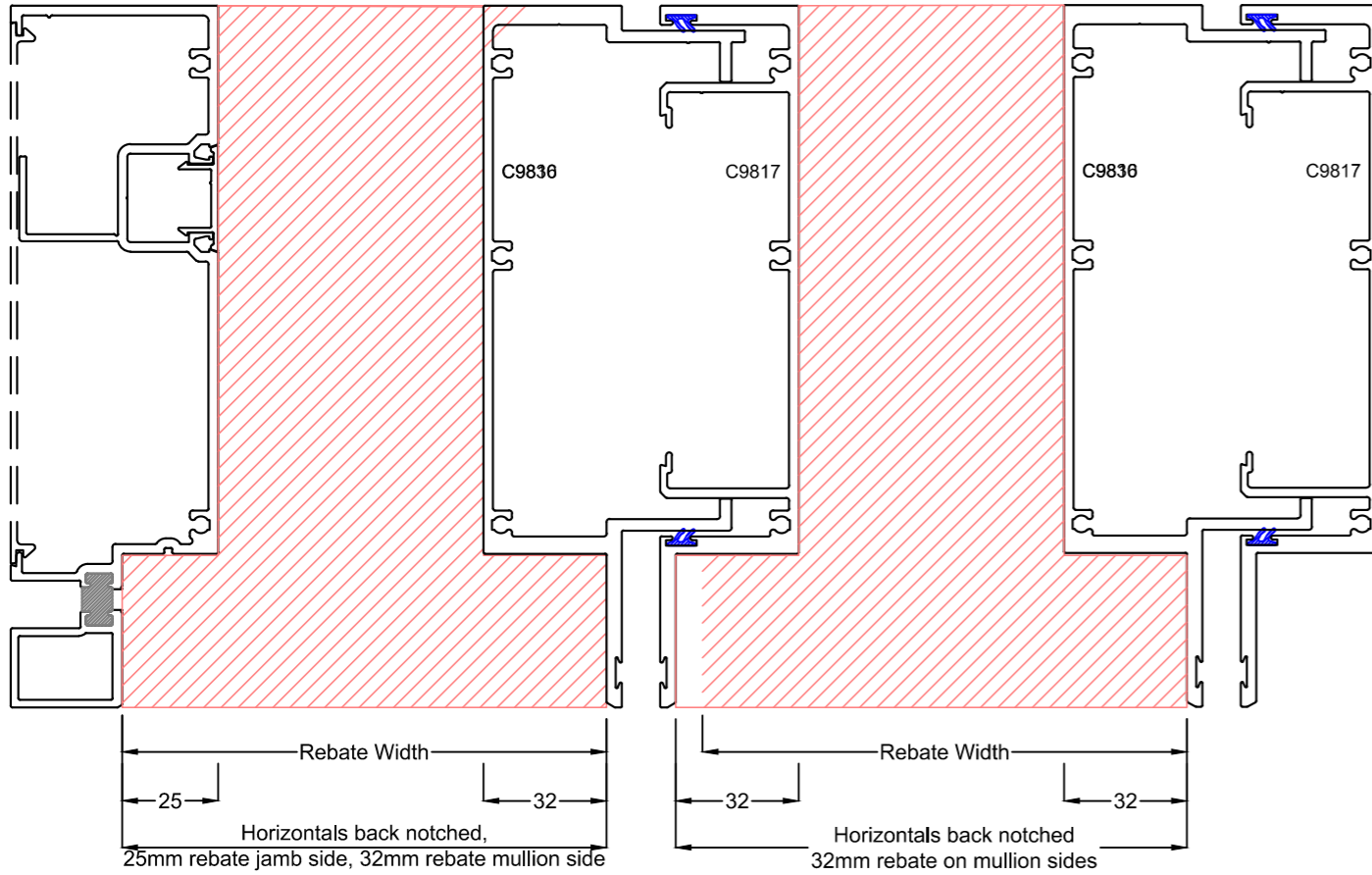
**U-Max™ THERMAL BREAK SG182 Structural Glazed**

**U-Max Framing Systems: USG182 - 6**

**Machining Head, Sill & Transoms**

Horizontals are generally back notched 25mm from each end as detailed below.

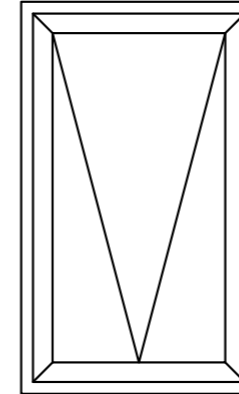
Note these Heavy Duty curtain wall mullions C9816 & C9817, 9844& 9845 have 40 x 32mm rebates & machining changes accordingly.



**Head & Sill with Structural Glazed Sash**

This sash is only suited to mullions & horizontals with a rebate depth of 25mm.

It does not suit heavy mullions or rebates on stack joints.



**Note:**

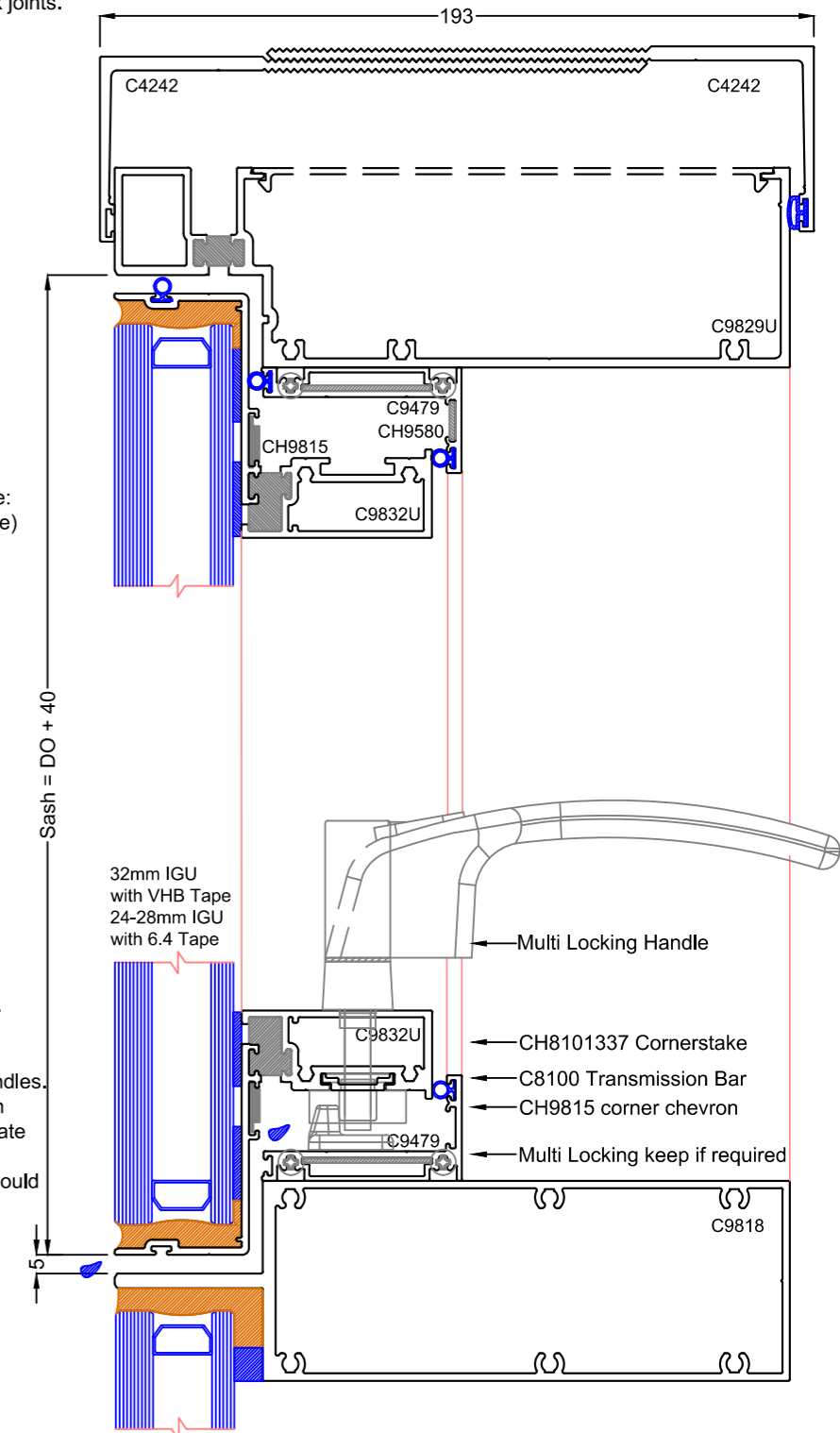
- Adapts into assemblies with 25mm rebates ie: Curtain wall mullion is unsuited (32mm rebate)
- Maximum Sash weights generally are 130kg on stays.
- Handle Operated key locking & multi locking, mounted on bottom rail
- Casement sashes have handle mounted on the sash stile with 72kg limit
- Not recommended for use with winders
- Max Height: 2100mm
- Max width: 1200mm
- Accepts Q-Ion Acoustic seals
- Generally suited to 24-32mm IGUs

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

**Multi locking Handle**

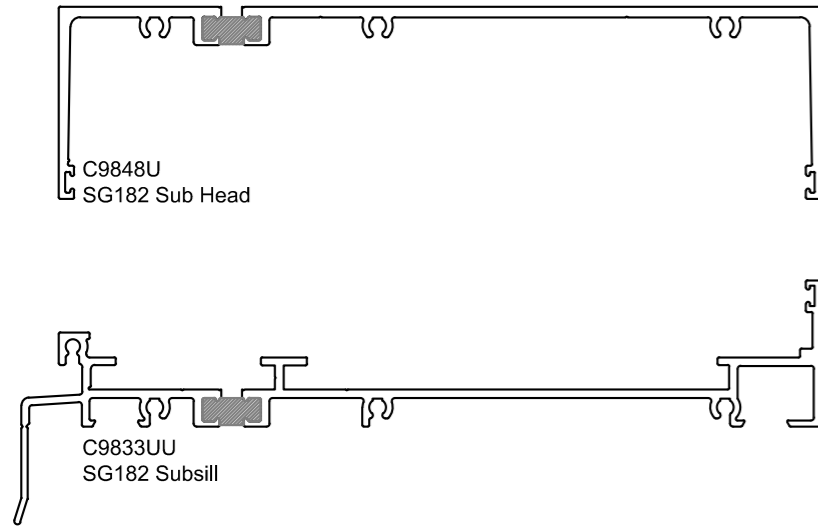
An alternative means of operating awning windows, a handle drives multi locking points around the sash which increases weathertightness & resistance to negative windloads.

Its function is far superior to conventional cam handles. One handle only is required per Sash & is fitted on the bottom rail of awning Sashes & at an appropriate height on a Sash stile on casements. Fitting of flyscreens become difficult however & would usually require a retractable screen.



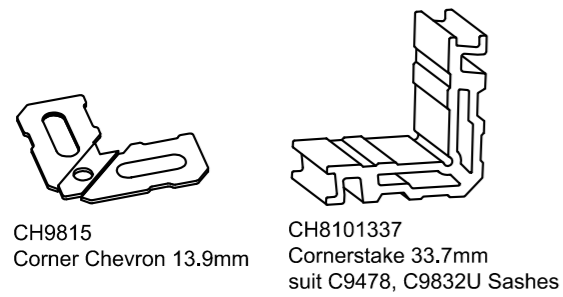


**U-Max™ THERMAL BREAK SG182 Structural Glazed**  
**U-Max Framing Systems: USG182 - 3**  
**Extrusion ID**



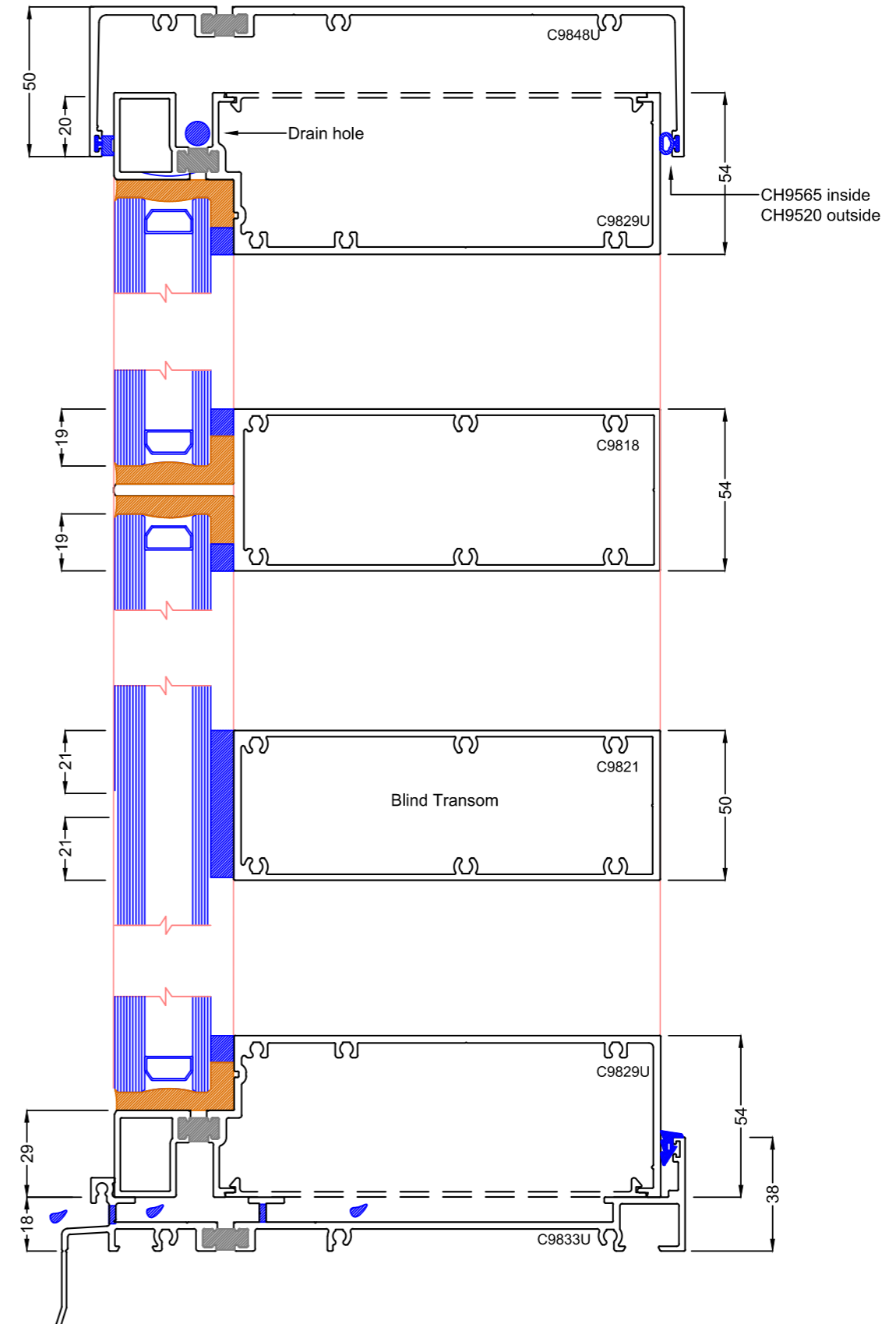
**Component ID**

- |                          |   |   |                                  |                           |                        |
|--------------------------|---|---|----------------------------------|---------------------------|------------------------|
|                          |   |   |                                  |                           |                        |
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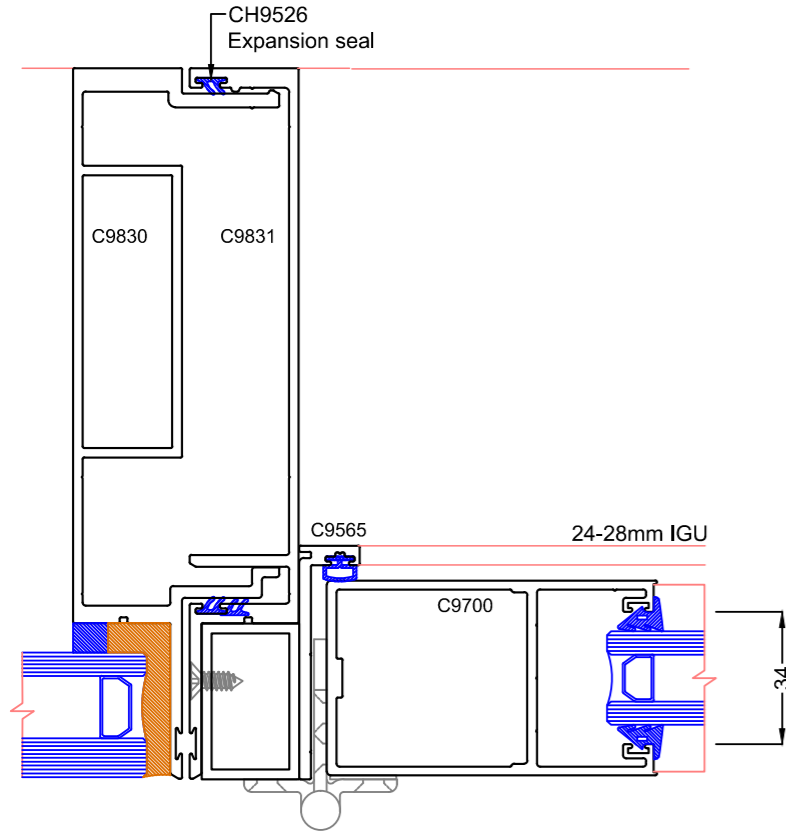


**Head & Sill detail**

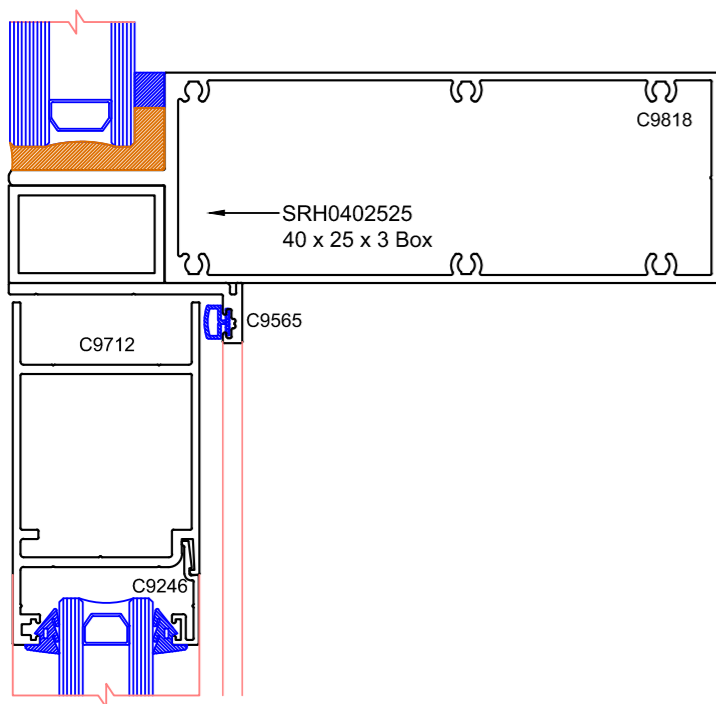
The rebate depth of face of 25mm is common on all assemblies allowing it to be used in conjunction with C9832U structural glazed Sash.



**U-Max™ THERMAL BREAK SG182 Structural Glazed  
U-Max Framing Systems: USG182 - 8  
Hinged Door Detail - Max 50mm Pocketed Door**

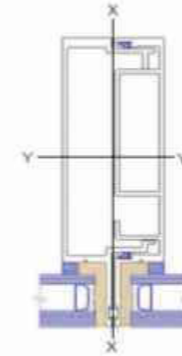


**Max 50mm Pocketed Door - Head or Transom Detail**



**Mullion Structural Tables**

**Mullion Combination: SG182 Structural Mullion C9830/C9831**



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 Ultimate.

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

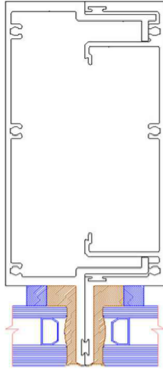
2200	<b>S</b>	12282	10088	8689	7756	7127	6717	6482	6404
	<b>U</b>	12282	10088	8689	7756	7127	6717	6482	6404
2400	<b>S</b>	10185	8328	7133	6321	5757	5365	5105	4954
	<b>U</b>	10185	8328	7133	6321	5757	5365	5105	4954
2600	<b>S</b>	8580	6992	5963	5256	4755	4395	4140	3969
	<b>U</b>	8580	6992	5963	5256	4755	4395	4140	3969
2800	<b>S</b>	7324	5953	5060	4442	3998	3673	3434	3262
	<b>U</b>	7324	5953	5060	4442	3998	3673	3434	3262
3000	<b>S</b>	6323	5129	4347	3804	3410	3118	2899	2735
	<b>U</b>	6323	5129	4347	3804	3410	3118	2899	2735
3200	<b>S</b>	5502	4463	3775	3295	2944	2682	2482	2330
	<b>U</b>	5512	4463	3775	3295	2944	2682	2482	2330
3400	<b>S</b>	4574	3706	3136	2739	2449	2231	2065	1937
	<b>U</b>	4847	3919	3309	2881	2568	2332	2151	2010
3600	<b>S</b>	3844	3110	2628	2.29	2042	1856	1712	1600
	<b>U</b>	4293	3467	2923	2541	2260	2047	1883	1754
3800	<b>S</b>	3262	2636	2224	1934	1722	1561	1436	1339
	<b>U</b>	3828	3088	2601	2257	2004	1812	1662	1544
4000	<b>S</b>	2792	2254	1899	1650	1466	1326	1218	1132
	<b>U</b>	3433	2768	2328	2018	1789	1614	1478	1370
4200	<b>S</b>	2408	1942	1635	1418	1258	1137	1042	966
	<b>U</b>	3096	2494	2096	1815	1607	1448	1323	1224
4400	<b>S</b>	2091	1686	1418	1229	1089	982	898	832
	<b>U</b>	2805	2258	1896	1640	1451	1306	1192	1100
4600	<b>S</b>	1828	1473	1238	1071	948	854	780	721
	<b>U</b>	2552	2054	1723	1490	1316	1183	1079	995
4800	<b>S</b>	1608	1294	1087	940	831	748	682	630
	<b>U</b>	2332	1875	1573	1359	1200	1077	981	903
5000	<b>S</b>	1421	1143	960	830	733	659	600	
	<b>U</b>	2138	1719	1441	1244	1097	985	896	
<b>Mullion Centres (mm)</b>		800	1000	1200	1400	1600	1800	2000	2200

These charts are based on single span mullions only. If double equal span mullions are being used, spans will be significantly stronger, but must be verified by a structural engineer.



**U-Max™ THERMAL BREAK SG182 Structural Glazed**  
**U-Max Framing Systems: USG182 - 9**  
**Mullion Structural Tables**

**Mullion Combination:** Max 200-40 Pocket Struct C9816 C9817



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 Ultimate.

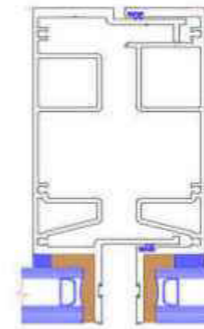
This chart is to be used as a guide only. Where Serviceability exceeds 3kPa or for more information, contact Capral.

2200	<b>S</b>	18202	14950	12877	11495	10562	9955	9606	9491
	<b>U</b>	18202	14950	12877	11495	10562	9955	9606	9491
2400	<b>S</b>	15083	12415	10633	9424	8582	7998	7610	7385
	<b>U</b>	15183	12415	10633	9424	8582	7998	7610	7385
2600	<b>S</b>	12093	9855	8404	7408	6702	6195	5836	5594
	<b>U</b>	12093	9855	8404	7408	6702	6195	5836	5594
2800	<b>S</b>	10275	8376	7143	6295	5690	5251	4932	4706
	<b>U</b>	10368	8427	7163	6287	5659	5199	4861	4618
3000	<b>S</b>	8318	6764	5751	5049	4544	4172	3895	3691
	<b>U</b>	8989	7291	6180	5407	4848	4432	4121	3888
3200	<b>S</b>	6830	5543	4701	4115	3690	3374	3135	2954
	<b>U</b>	7868	6371	5389	4703	4202	3828	3543	3326
3400	<b>S</b>	5678	4600	3894	3400	3040	2770	2564	2405
	<b>U</b>	6945	5616	4742	4129	3680	3342	3082	2881
3600	<b>S</b>	4772	3861	3262	2842	2535	2304	2125	1987
	<b>U</b>	6176	4988	4205	3655	3251	2945	2708	2523
3800	<b>S</b>	4049	3272	2761	2401	2138	1938	1783	1662
	<b>U</b>	5528	4460	3756	3260	2894	2616	2400	2230
4000	<b>S</b>	3465	2798	2358	2048	1820	1646	1511	1405
	<b>U</b>	4977	4012	3375	2925	2593	2340	2143	1986
4200	<b>S</b>	2989	2411	2030	1761	1562	1411	1293	1199
	<b>U</b>	4504	3628	3049	2640	2338	2106	1925	1781
4400	<b>S</b>	2596	2093	1760	1525	1352	1219	1115	1032
	<b>U</b>	4095	3297	2769	2395	2118	1906	1740	1607
4600	<b>S</b>	2270	1828	1536	1330	1177	1061	969	895
	<b>U</b>	3740	3009	2525	2183	1929	1734	1580	1457
4800	<b>S</b>	1996	1607	1349	1167	1032	929	847	782
	<b>U</b>	3429	2757	2313	1998	1764	1584	1442	1328
5000	<b>S</b>	1764	1419	1191	1030	910	818	745	687
	<b>U</b>	3155	2536	2126	1835	1619	1453	1322	1216
<b>Mullion Centres (mm)</b>		800	1000	1200	1400	1600	1800	2000	2200

These charts are based on single span mullions only. If double equal span mullions are being used, spans will be significantly stronger, but must be verified by a structural engineer.

**Mullion Structural Tables**

**Mullion Combination:** SG182 Shadescreen Mullion (C9844,C9845)



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 Ultimate.

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

2200	<b>S</b>	18607	15282	13163	11750	10797	10176	9820	9702
	<b>U</b>	18607	15282	13163	11750	10797	10176	9820	9702
2400	<b>S</b>	15453	12636	10823	9591	8734	8140	7745	7517
	<b>U</b>	15453	12636	10823	9591	8734	8140	7745	7517
2600	<b>S</b>	13038	10625	961	7987	7226	6679	6292	6031
	<b>U</b>	13038	10625	9061	7987	7226	6679	6292	6031
2800	<b>S</b>	11147	9060	7701	6760	6084	5589	5226	4965
	<b>U</b>	11147	9060	7701	6760	6084	5589	5226	4965
3000	<b>S</b>	9638	7817	6626	5798	5197	4752	4418	4169
	<b>U</b>	9638	7817	6626	5798	5197	4752	4418	4169
3200	<b>S</b>	8153	6616	5612	4912	4405	4027	3742	3526
	<b>U</b>	8414	6813	5763	5029	4494	4093	3789	3556
3400	<b>S</b>	6778	5491	4648	4058	3629	3306	3060	2871
	<b>U</b>	7408	5990	5057	4404	3925	3565	3288	3073
3600	<b>S</b>	5696	4608	3894	3393	3026	2750	2537	2372
	<b>U</b>	6570	5306	4474	3889	3459	3133	2881	2684
3800	<b>S</b>	4833	3906	3295	2867	2552	2313	2128	1984
	<b>U</b>	5866	4733	3986	3459	3071	2776	2547	2366
4000	<b>S</b>	4137	3340	2814	2444	2172	1965	1804	1677
	<b>U</b>	5269	4247	3573	3097	2746	2478	2268	2102
4200	<b>S</b>	3568	2878	2423	2102	1865	1684	1543	1432
	<b>U</b>	4757	3832	3220	2789	2469	2225	2033	1881
4400	<b>S</b>	3099	2498	2101	1821	1613	1455	1331	1232
	<b>U</b>	4315	3474	2917	2524	2232	2009	1833	1693
4600	<b>S</b>	2709	2182	1834	1588	1405	1266	1156	1069
	<b>U</b>	3932	3164	2655	2295	2028	1823	1662	1532
4800	<b>S</b>	2382	1918	1611	1393	1232	1108	1011	933
	<b>U</b>	3597	2892	2426	2096	1850	1662	1513	1393
5000	<b>S</b>	2106	1694	1422	1229	1086	976	890	820
	<b>U</b>	3302	2654	2225	1921	1695	1521	1383	1273
<b>Mullion Centres (mm)</b>		800	1000	1200	1400	1600	1800	2000	2200

These charts are based on single span mullions only. If double equal span mullions are being used, spans will be significantly stronger, but must be verified by a structural engineer.

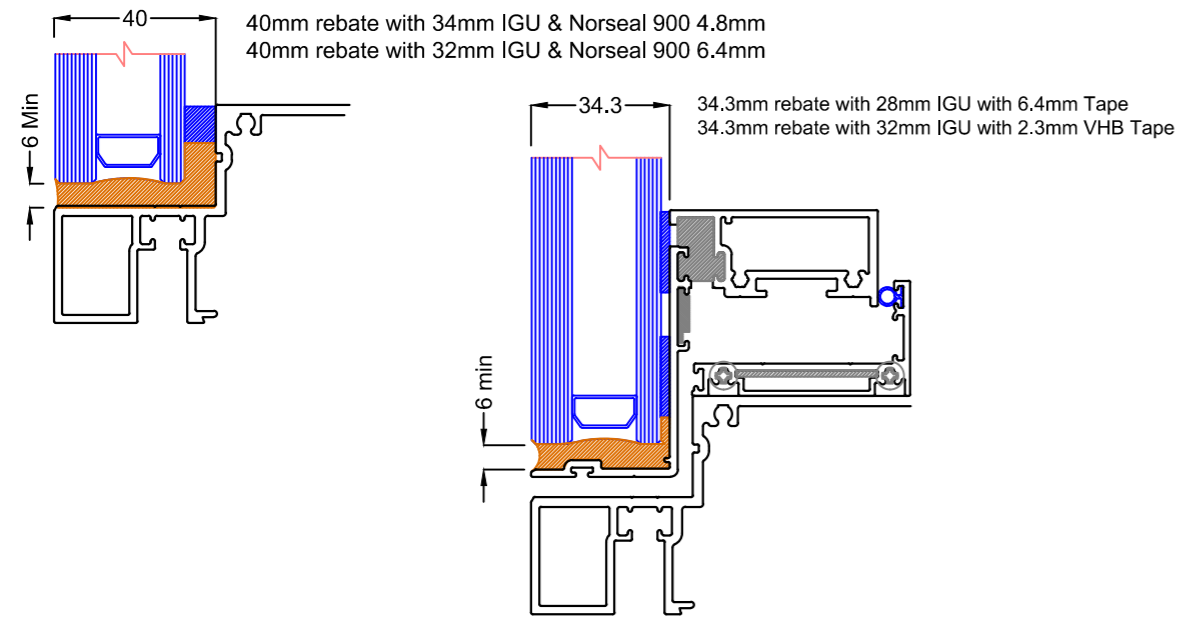
## U-Max™ THERMAL BREAK SG182 Structural Glazed U-Max Framing Systems: USG182 - 10

### Glazing Methodology

It is possible to glaze the SG182 system in a number of ways - either as a site glazed or factory glazed system. When factory glazed, panels are assembled as individual units (glass & frame bonded panels) in a controlled environment. This allows for proper surface preparation & tape application procedures to be maintained as well as implementation of quality & process control programs. This product has been successfully been glazed using 3M™ VHB™ Structural Glazing Tape or traditional double sided tape & structural silicone. If the outdoor temperature is below 15°C it is required that the assembled panels be kept in the warmer, controlled environment of the factory shop for 24 hours before exposing the panel to colder site temperatures. The use of 4 sided structural glazing requires great attention to detail in the glazing of frames. An instructional fabricators manual is available that gives an overview of both procedures however glazing methodology, class cover & silicone bite should be referred to tape and silicone suppliers for suitability to the application.

### Glazing Method for Max SG182 Framing

The following chart has been prepared to depict suggested tape combinations for U-Max Structural Glazed framing. Note that glass deduction sizes vary between glazing methods ie: structural silicone glazing & VHB tape. Note that the overall of frame & glass should be 150mm in combinations of IGU & tape as detailed below. This size is critical to the system operating within sub heads & sub sills as detailed.



Max SG182 Structural Glazed	Glass thickness	Example	Rebate Tape
	32mm	10/12/10	Norseal V900 Tape 12 x 6.4
	34mm	13.52/14/10	Norseal V900 Tape 12 x 4.8
	36mm	13.52/12/13.52	3M VHB Tape 18 x 2.3mm
	C9832U Structural Glazed Sash (34.5 Rebate)		
	28mm	10/12/6	Norseal V900 Tape 12 x 6.4
	32mm	10/12/10	3M VHB Tape 18 x 2.3mm