

Safetyline
jalousie

A NEW DIMENSION IN
LOUVRE
WINDOWS



2RKS Architecture + Design

sydney



melbourne



brisbane



perth

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About Safetyline Jalousie



Safetyline Jalousie Available in Australia

SMR Designs Pty Ltd, a member of the Australian Window Association, has been authorised to manufacture and distribute Safetyline Jalousie louvre windows in Australia and the South Pacific.

The family owned and run business has had more than 25 years involvement in the Australian home improvement and commercial premises building market with its revolutionary Vergola Opening Roof System. It introduced Safetyline Jalousie louvres to the Australian windows and doors market in 2009.

The Safetyline Jalousie product is the perfect ventilation option overcoming the safety and security limitations of conventional louvre windows and is aligned with the company's commitment to quality, value and superior design.

Safetyline Jalousie Origin

Created in France, Safetyline Jalousie louvre windows have been developed exclusively by Technal, a division of the European giant Hydro. Hydro is a world leader in the aluminium building systems sector with activities in more than 40 countries on all continents. Along with Technal's extensive range of windows, doors, facades, balustrades and partitions, Safetyline Jalousie louvres have a long history of superior performance in commercial and residential buildings across the globe.



Customer Assistance

SMR Designs Pty Ltd, with its Safetyline Jalousie product, offers architects, window companies and building partners:

- Complete design and fabrication documentation;
- Complete CAD* drawings in DWG & DXF format; 3D files for Autodesk ® Revit ® Architecture and ArchiCAD 3D Architecture Software are also available.
- Technical assessments and quotations;
- Adaptation of custom designed profiles; and
- Installation and maintenance training;

* Each CAD drawing in this manual has a JX code which corresponds to the DWG or DXF file contained in the resource disc and online at www.safetylinejalousie.com.au

A Revolution in Louvre Windows

Safetyline Jalousie goes beyond all other louvre systems to provide:

- Extra wide spans, up to 1400mm;
- Inbuilt security;
- Air and water tight sealing and;
- Internal fly screens.

With aluminium frames and support structures, the louvres may be manufactured from aluminium or glass, which provides a natural and soft ambience.

Product Information

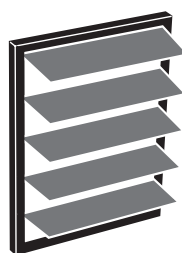
Safetyline Jalousie's unique louvre windows will bring added value to your projects and offer unrivalled flexibility in your design options through unmatched performance ratings, strength, reliability and versatility. Some of the performance advantages and benefits of Safetyline Jalousie louvre windows include:

- Span of 1400mm wide, larger windows reduce perimeter framing and install time, hugely cost effective;
- Seals are air and water tight, with a Water Penetration Resistance of 800pa. Ideal for air-conditioned environments and strong wind load requirements such as high rise buildings;
- Acoustic benefits are some of the highest ratings available. Tested and confirmed sound reduction of 33Rw achieved with 6.38mm laminate and 6mm toughened glass and sound reduction of 35Rw achieved with Viridian 6.5mm VLam Hush glass;
- Security is provided via the louvre bearer with a pull out force in excess of 550 kgs – Safetyline Jalousie louvres can be left open with complete peace of mind;
- Balustrade code compliant, perfect for floor-to-ceiling, multi-story, high-rise and balcony enclosures and winter gardens;
- Screening is provided internally and is easily removed for cleaning, eliminating the use of a permanent boxed out section, allowing greater cross flow ventilation, free flow air infiltration and natural light.

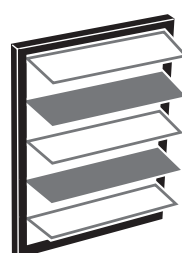
Safetyline Jalousie louvre windows are amongst the safest, strongest, widest and most functional and versatile louvre windows on the market. The lifestyle and energy saving benefits are considerable and in an era of sustainable design, the JX from Safetyline Jalousie is the clear winner.



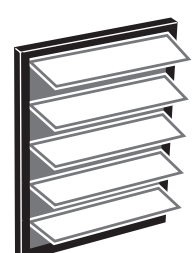
Frame with glass louvres



Frame with aluminium louvres



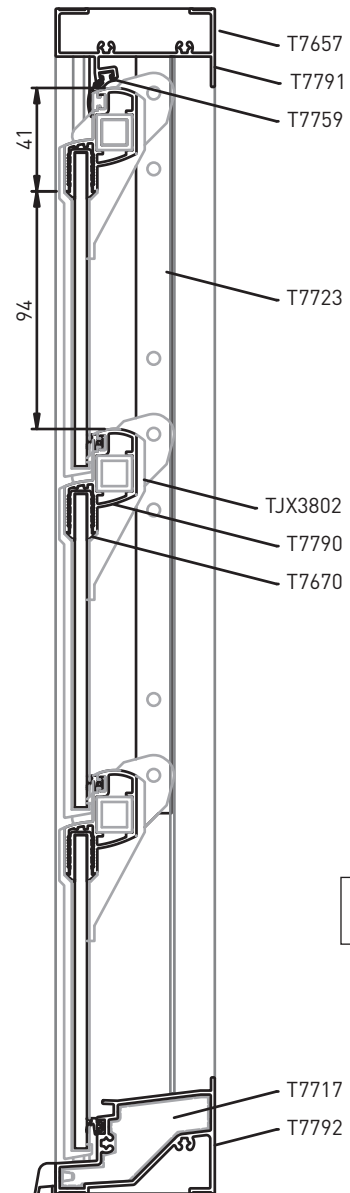
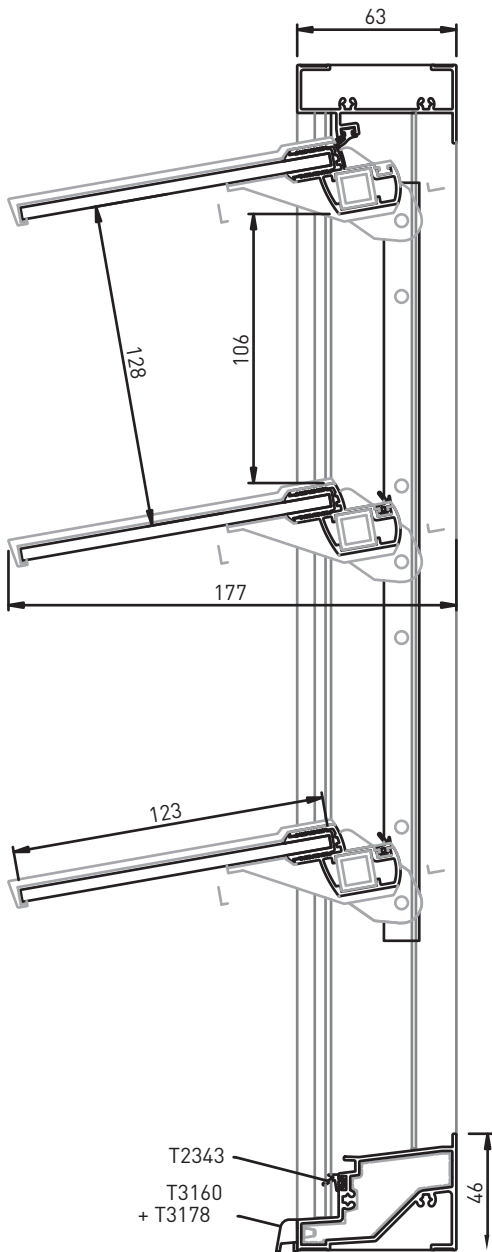
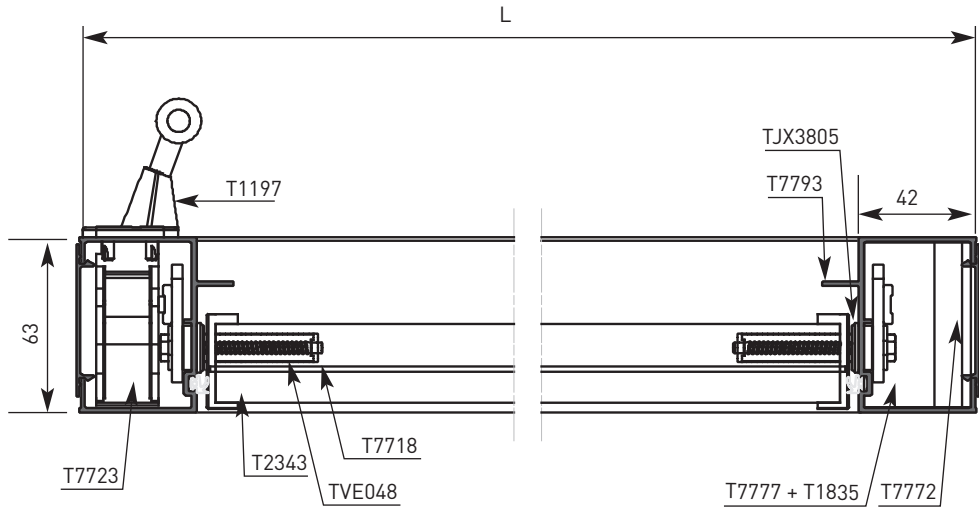
Frame with combination of louvres



Frame with fly screen

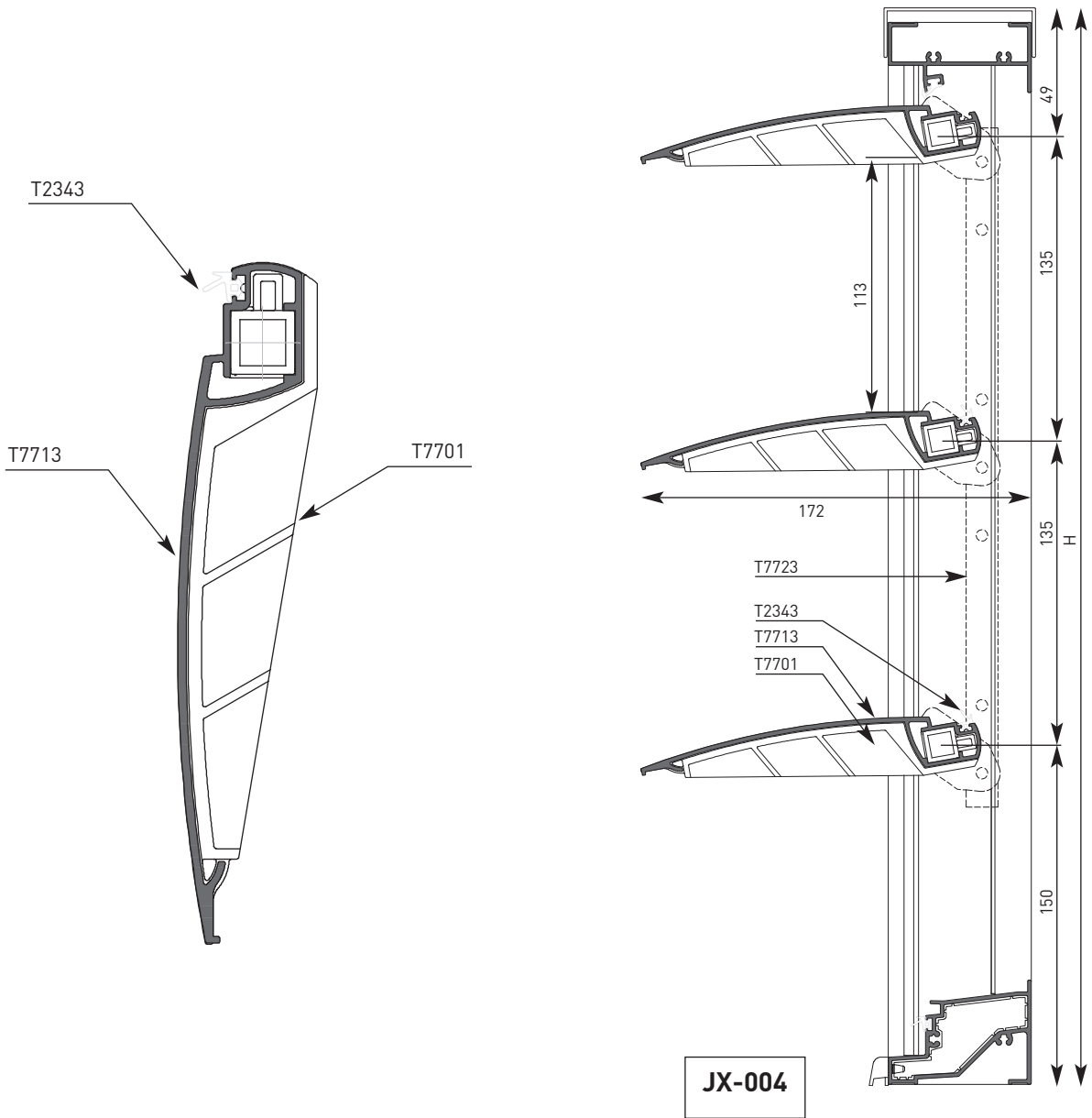
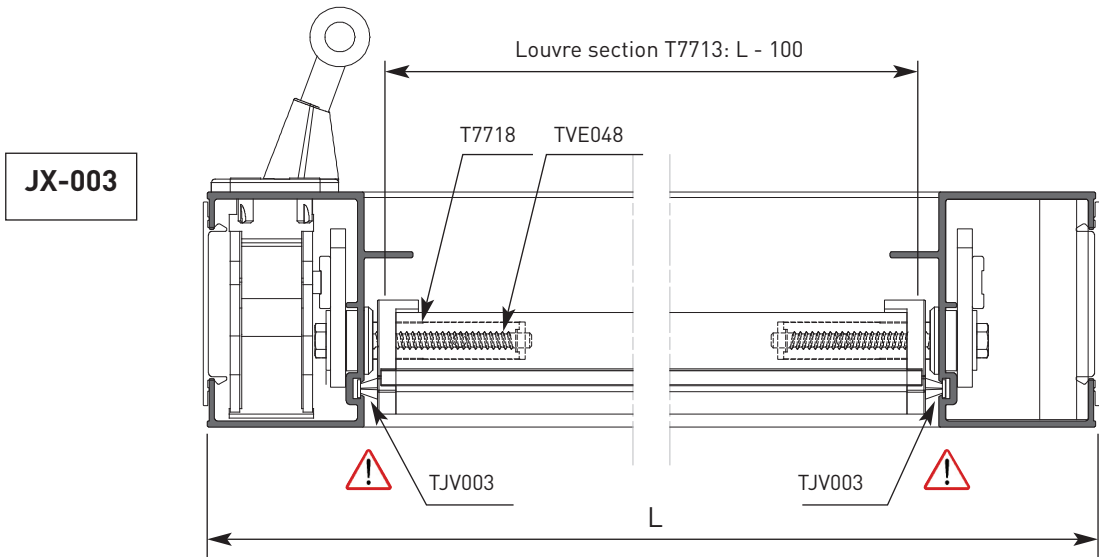
Frame with Glass Louvres

JX-001



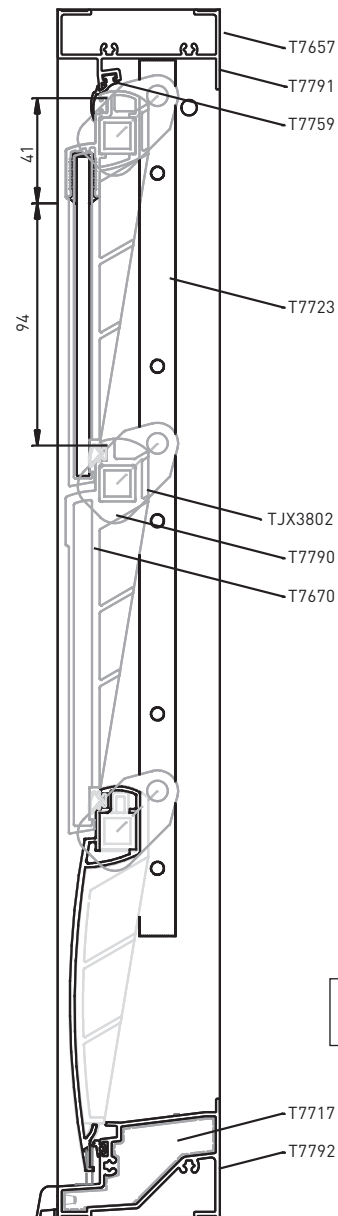
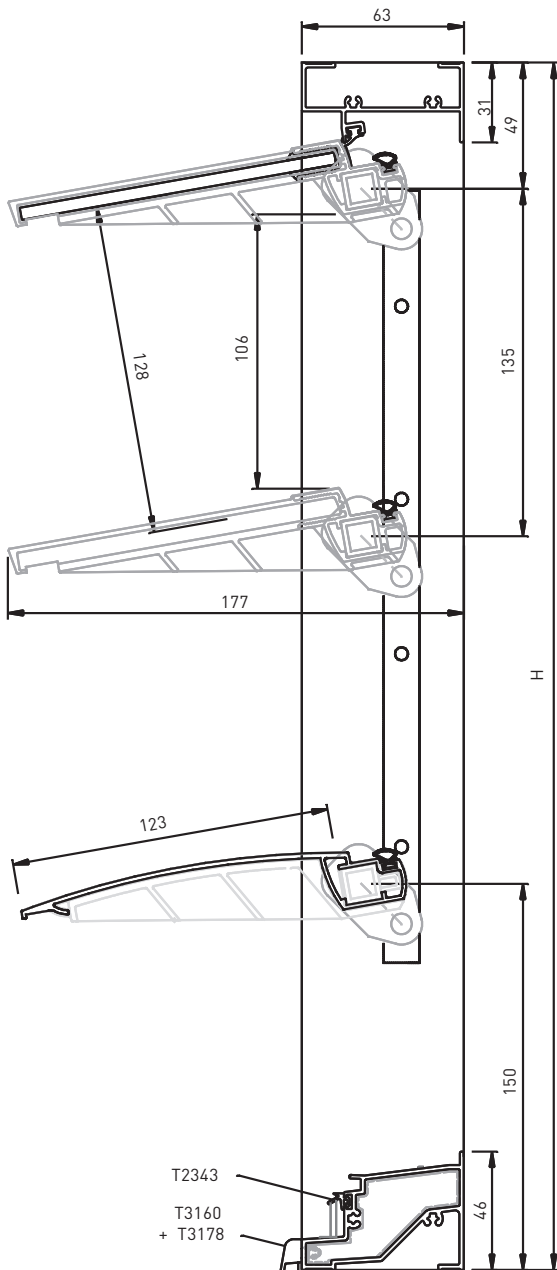
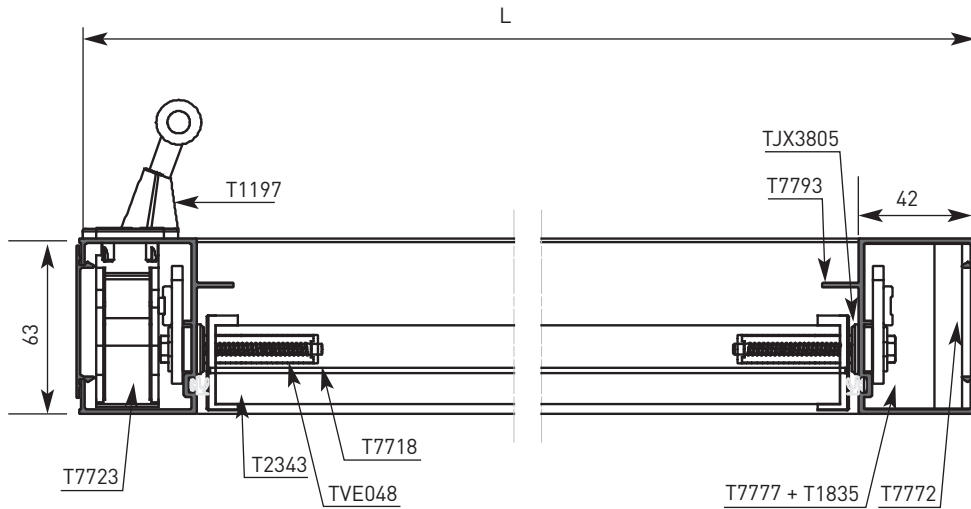
JX-002

Frame with Aluminium Louvres



Frame with Combination of Louvres (Glass and Aluminium Louvres)

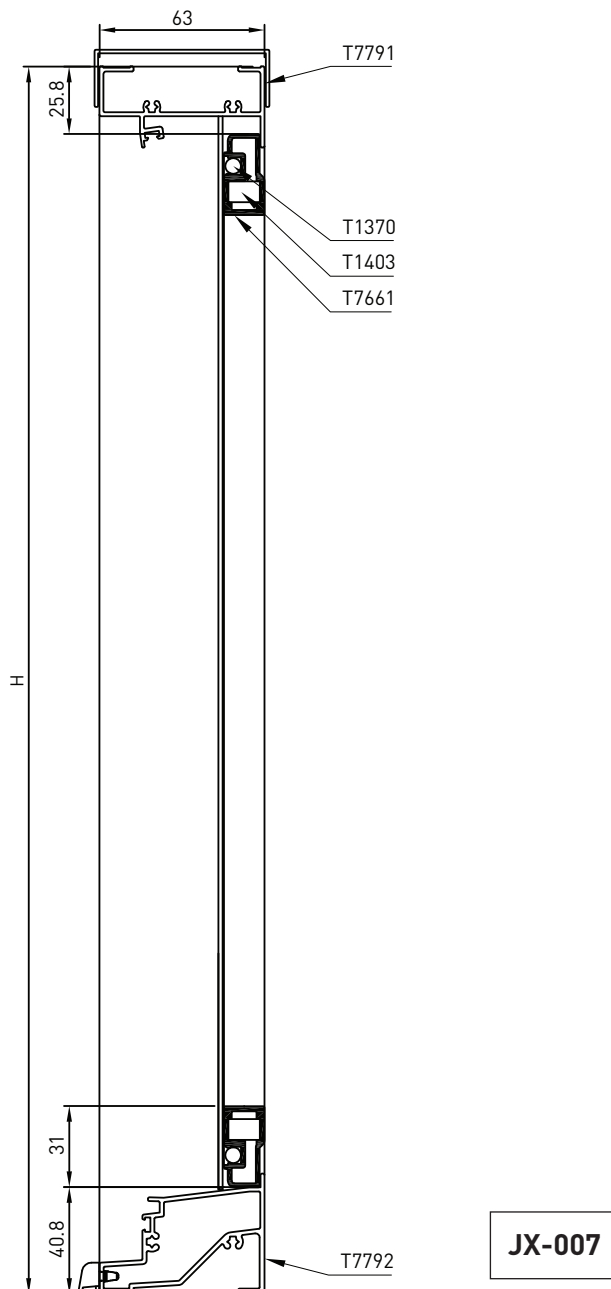
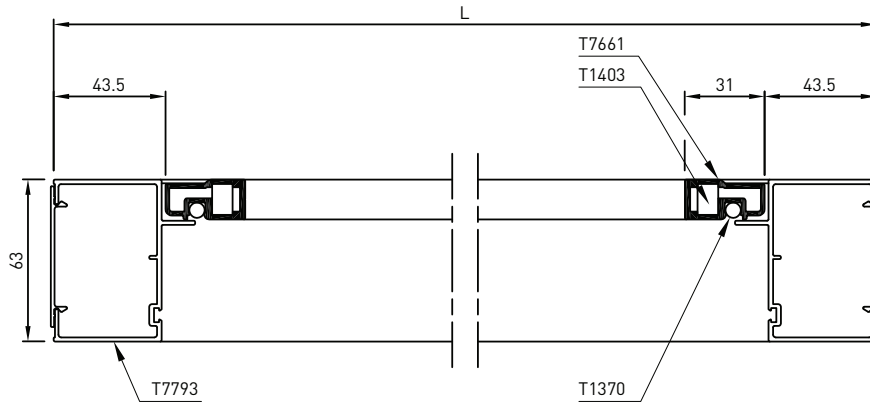
JX-001



JX-005

Frame with Fly Screen

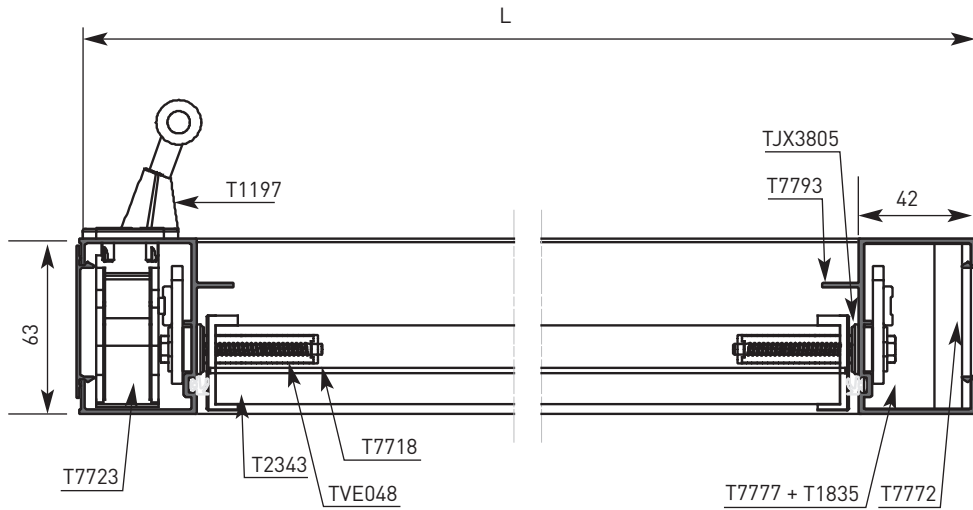
JX-006



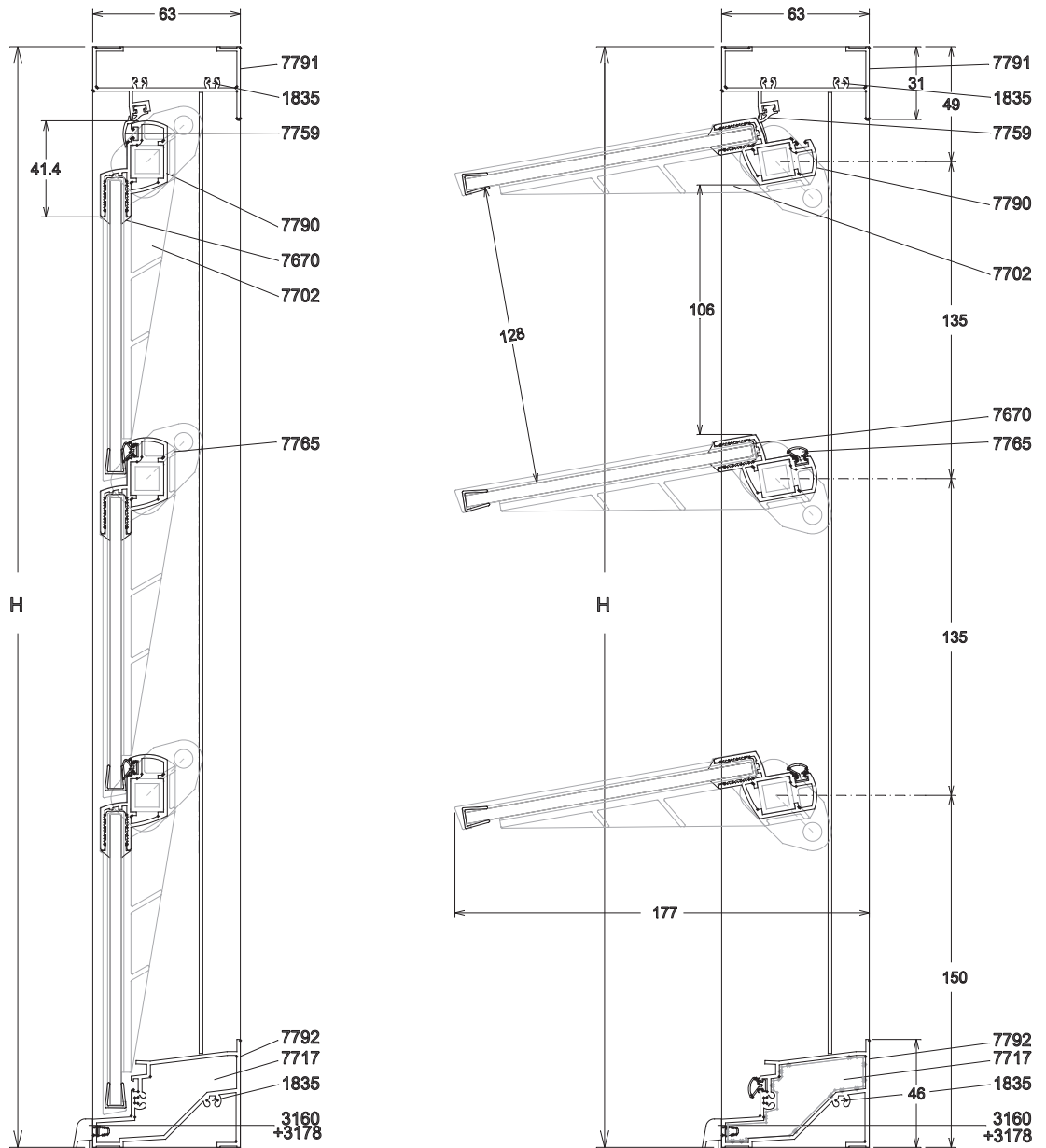
JX-007

Frame with Vacuum Glass Louvres

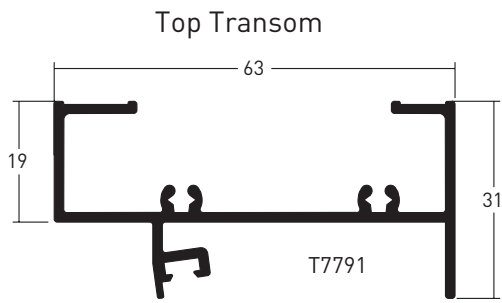
JX-001



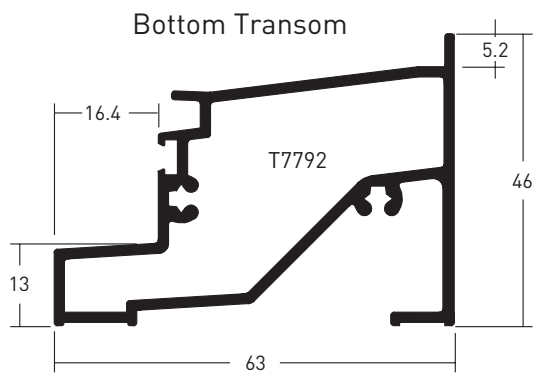
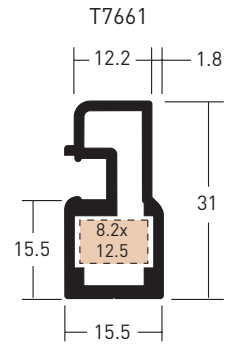
JX-003C



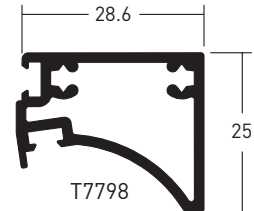
List of Profiles



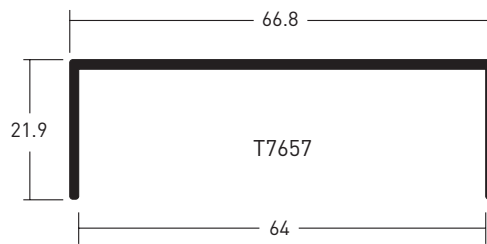
Fly Screen Section



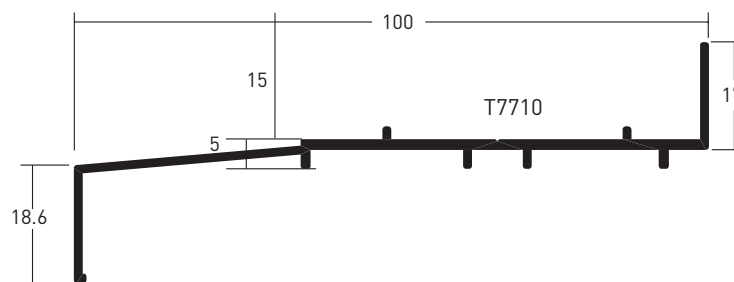
Intermediate Transom



Sub head

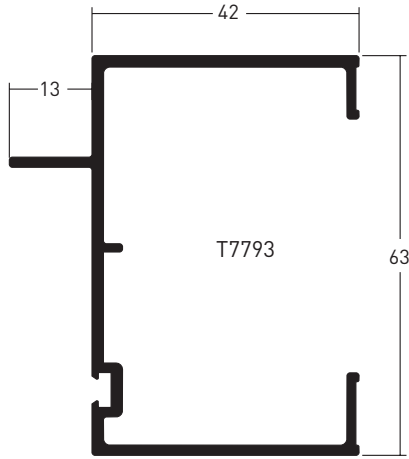


Sub Sill

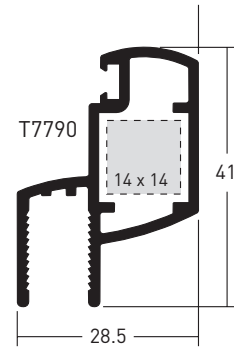


List of Profiles (cont.)

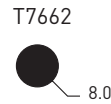
Upright Section



Glass Louvre Bearer



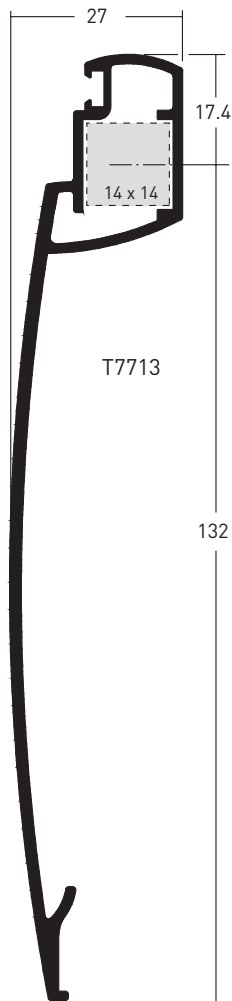
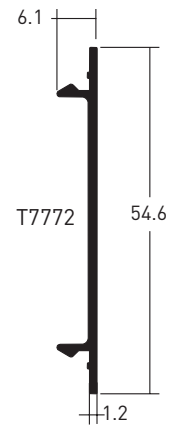
Stainless Steel Security Rod



Joining Section

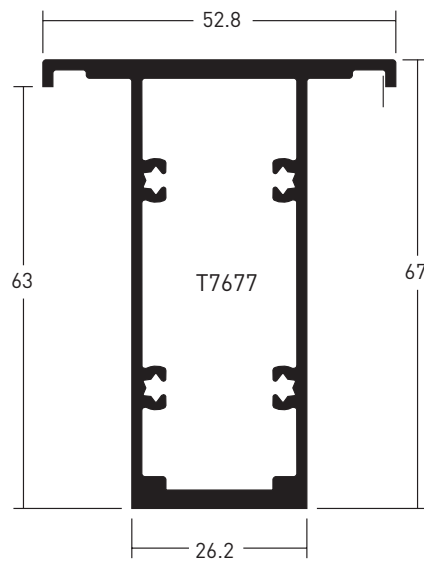


Capping Section



Aluminium Louvre

Sub-Frame Mullion Section



Features

Spans

- Extra wide spans up to 1400mm as a single unit or frames can be joined with a connector piece.

Security

- Inbuilt & impenetrable;
- Robust aluminium louvre bearers are built into the frame - Even if the glass is broken the system remains secure;
- 8mm internal security bar option available – The rod is fitted inside the louvre bearer which does not affect the appearance of the system.

Seals

- Sealed on all 4 sides with Marine Grade EPDM seals on each horizontal transom and gaskets on the upright sections;
- Water drainage via bottom transom.

Screens

- Insect screens are fitted internally within a rebate section of the window frame, and are easily removed for cleaning;
- Available in fibreglass or aluminium mesh.

Frames

- Extremely durable, high quality 63mm module square cut aluminium frame assembled by stainless steel screws;
- The aluminium components are available in three surface finishes - powder coated, high performance powder coated or anodized;
- A wide range of colours are available to meet individual project requirements, enhancing existing buildings and offering architects and designers greater design freedom;
- Anodising thickness is 20 microns or 25 microns for seaside and inland locations where durability and longevity are of importance;
- Super durable DecoWood finish can be applied to the aluminium where the look of timber is desired.

Louvres

- Louvres are available in glass or curved aluminium profile with nylon end caps;
- Any type of commercially available glass can be used in 6mm, 6.38mm or 6.5mm thickness – including laminate, low e, tinted, frosted, acoustic and performance glass;
- Aluminium louvre blades are one piece and cannot be removed;
- Combination of glass and aluminium louvres are possible;
- Louvre blade centres are 135mm;
- Requires 200kg pull out to remove glass louvre blades;
- Louvres open to the outside of the window – no interference to curtains or blinds.

Features (cont.)

Installation

- No assembly required - The system is supplied fully manufactured and glazed;
- Easy and fast installation using screws through the pre-punched fixing holes in the upright sections.

Operation

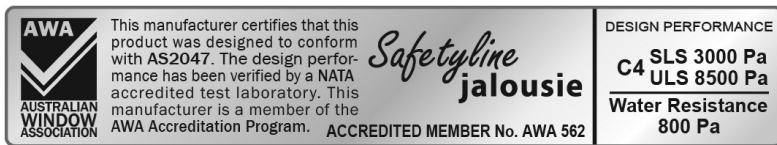
- Manual operator options include a cam driven lever mechanism or turn handles which open the louvres to 80° and can be fitted on the left or right hand side of the frame;
- High level louvres can be operated with a winding mechanism and detachable map rod;
- Louvres can be motor controlled using a 24V DC Actuator with wall switch and/or hand held remote;
- Motorised louvres can be integrated with climate control, fire and smoke systems;
- Motors are mounted externally on the frame for easy maintenance.
- Internal and external motor options available.

Performance

Australian Standards

Safetyline Jalousie Louvres exceed the mandatory requirements of Australian Standards AS2047-2014 (Windows and Glazed Doors in Buildings), AS1288-2006 (Glass in Buildings – Selection and Installation) and AS4055-2012 (Wind Loads for Housing).

All windows are labelled with their identification, window rating and water penetration resistance.

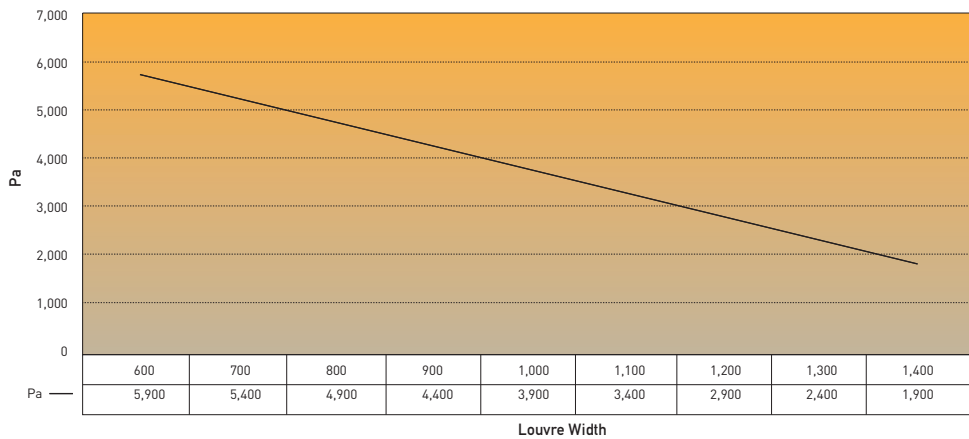


Key Performance Ratings

- Serviceability Limit State (SLS) – up to **4000pa**
- Ultimate Limit State (ULS) – up to **9525pa**
- Water Penetration Resistance – **800pa**
- Acoustic – **35RW**
- Windborne Debris – impact test passed **type B** (for cyclones)
- Kids Can't Fly – **compliant**
- Impact Load – tested to **550kg**
- Balustrade Code – **compliant**

Serviceability Wind Pressures (SLS)

The following graph has been developed using actual test data and calculations to confirm compliance.



The following tables list actual test results for the JX Safetyline Jalousie louvres conducted by a NATA accredited test laboratory.

Ultimate Limit State (ULS)

Product Type	Test Report Number	Ultimate Wind Pressure Pa		Window Width Tested (mm)
		Positive	Negative	
Glass Louvres	AZT0117.16	9,525	8,200	1,400
Glass Louvres	AZT0119.16	9,000	8,500	1,000
Aluminium Louvres	AZT0010.12	9,100	7,900	1,400
Aluminium Louvres	AZT0013.12	8,900	7,600	1,000

Air Infiltration

Product Type	Test Report Number	Air Infiltration L/s m ²	Window Width Tested (mm)
		75 Pa	
Glass Louvres	AZT0011.12	0.33	1,400
Glass Louvres	AZT0038.12	0.25	1,000
Aluminium Louvres	AZT0010.12	0.16	1,400
Aluminium Louvres	AZT0013.12	0.28	1,000

Water Penetration Resistance

Product Type	Test Report Number	Water Penetration Resistance (pa)	Window Width Tested (mm)
Glass Louvres	AZT0189.16	800	1,400
Glass Louvres	AZT0118.16	800	800
Aluminium Louvres	AZT0010.12	600	1,400
Aluminium Louvres	AZT0016.12	700	600

Acoustic Performance

The following Rw ratings were achieved with the Safetyline Jalousie system in an accredited CSIRO test laboratory;



Safetyline Jalousie JX Louvre Windows have been designed with acoustic performance in mind and, with the right glass selection, sound reduction of up to Rw 35 is achievable.

Rw 33

6mm toughened monolithic glass.

Frequency	125	250	500	1000	2000	400
Single Octave Rw	25.1	28.6	31.1	34.7	32.1	29.0

Frequency (Hz)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
1/3 Octave Rw	24.7	25.2	25.4	27.9	27.9	30.4	29.8	31.3	32.4	33.8	34.9	35.5	34.4	31.7	30.9	30.2	29.6	27.7

Rw 33

6.38 laminated glass

Frequency (Hz)	125	250	500	1000	2000	400
Single Octave Rw	24.7	28.3	31.0	34.7	32.9	30.0

Frequency (Hz)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
1/3 Octave Rw	24.6	25.0	24.6	27.6	27.7	30.2	29.7	31.2	32.6	33.7	35.0	35.6	34.9	32.4	31.8	32.4	30.2	28.3

Rw 35

6.5mm Vlam Hush

Frequency (Hz)	125	250	500	1000	2000	400
Single Octave Rw	25.2	28.6	31.3	35.2	36.9	30.2

Frequency (Hz)	100	125	160	200	250	315	400	500	630	800	1000	1250	1600	2000	2500	3150	4000	5000
1/3 Octave Rw	24.3	25.8	25.6	27.6	28.1	30.7	30.1	31.4	32.9	34.0	35.3	36.4	37.2	36.9	36.5	33.6	30.2	28.2

Windborne Debris Impact Loading – Type B Compliant

Australian Standard AS/NZ1170.2 clause 2.5.7 specifies requirements for windborne debris impact loading criteria. Safetyline Jalousie glass blade louvres were tested for Debris Type B (8mm steel ball missile). Debris Type B in the Australian Standard calls for an 8mm steel ball. We fired 5 x 8mm steel balls to conform to the higher requirements of cyclone shelters in North Queensland (all test were done with 5 balls). We achieved the following results: Debris Type B Pass at 45 meters per second (highest Australian Standard) & exceeded standard & pass at 60 meters per second with 5 x 8mm steel balls.

Fall Prevention – Kids Can't Fly Compliant

The National Construction Code specifies various requirements for the prevention of falls from openable windows. The intent of these requirements is to limit the risk of a person (especially a young child) falling through an openable window, and are divided into two categories;

1. All windows where the fall is four metres or more
2. Windows in bedrooms of Class 1, 2, 3 and 4 buildings, and any room in Class 9b Early Child Care Centres where the potential fall is two metres or more.

Safetyline Jalousie glass & aluminium louvres at their maximum span of 1400mm have passed the 125mm Pressure Plate Tests A & B (250N of horizontal force is applied to the centre & corners/weakest points of the window). The System also passed the additional bullet shaped probe test (250N of perpendicular force applied to the centre of all openings). The sphere probe was unable to pass through the louvre openings & there was no evidence of dislodgement.

Balustrade Compliant

In addition to the above, Safetyline Jalousie louvres have also been impact load tested to **550kg**.

Safetyline Jalousie louvres are suitable for floor to ceiling applications and with their 106mm openings, meet all of the necessary requirements for use as balustrade without the need for any additional options or bars to be fitted.

Window Energy Rating Scheme (WERS)

Safetyline Jalousie is a member of the Window Energy Rating Scheme. Test results are available on request or by visiting the WERS website.



Total performance U-Value and SHGC calculation to AFRC conditions (WERS).

An analysis has been undertaken to assess the overall thermal performance of the Safetyline Jalousie, JX louvre system. The analysis was undertaken with THERM 6.3, the Australian fenestration rating council (AFRC) total U-value and total solar heat gain coefficient (SHGC) of the vision panels has been calculated based on actual sizes.

Product	Panel Size (W x H)	Glazing	U-Value	SHGC	Air In
JX	1400x1500	6.38mm clear laminated	6.8	0.59	0.25
JX	1400x2700	6.38mm clear laminated	6.7	0.60	0.25
JX	1200x2700	6.38mm clear laminated	6.7	0.60	0.25
JX	1000x2700	6.38mm clear laminated	6.8	0.59	0.25
JX	1400x1500	6.38mm comfort plus clear	5.7	0.49	0.25
JX	1400x2700	6.38mm comfort plus clear	5.6	0.51	0.25
JX	1200x2700	6.38mm comfort plus clear	5.7	0.50	0.25
JX	1000x2700	6.38mm comfort plus clear	5.9	0.50	0.25

The Impact of Air Infiltration on Thermal Values



Inhabit Group were engaged by Safetyline Jalousie to undertake comparative modelling to quantify the impact of the reduced air infiltration of the Safetyline Jalousie window products compared to its competitors with higher air infiltration values.

The assessment compared the difference in façade gains and losses due to air infiltration and thermal transfer of the Safetyline Jalousie Louvers system, to its competitors. The assessment was undertaken against 2 competitors for both a residential (Class 2) and student housing (Class 3) scenario.

The focus of the study is to demonstrate a combined performance assessment.

Residential Energy Modelling

The residential modelling results do not achieve a preferential outcome of the Jalousie system. This can be attributed to:

- The lack of sensitivity in the analysis in regards to the inclusion of air infiltration of the window system;
- The inability of the Chennath engine to account for variations in panel size and whether a given system can be used in that application;
- The inability of the Chennath engine to account for variation in panel size and its impact on U-values.

The net result of the lack of sensitivity discussed above results in the Safetyline Jalousie system performing worse than their unframed counterparts in mandatory residential NCC compliance assessments. Despite the fact that using the Jalousie system will result in a preferential thermal comfort outcome, this is not a focus of residential compliance modelling.

Student Housing Energy Modelling

The results of the student housing assessment outlined in the table below found the Jalousie system to deliver the most preferential performance outcome.

Percentage Heat Gain and Loss for Windows compared to Jalousie Benchmark

	Type 1				Type 2			
	Northern Facing		Southern facing		Northern Facing		Southern Facing	
	Heat Loss	Heat Gain	Heat Loss	Heat Gain	Heat Loss	Heat Gain	Heat Loss	Heat Gain
Brisbane	-11%	-1%	0%	-6%	-9%	-1%	0%	-4%
Melbourne	-13%	-1%	1%	-7%	-11%	-1%	1%	-5%
Sydney	-11%	-1%	0%	-7%	-10%	-1%	0%	-5%

As such it can be concluded, that when modelled in detail, the performance benefits of the Jalousie product will be realised, however, it is acknowledged that there are a range of market barriers to the uptake of “accurate” modelling of the performance of the Jalousie systems.

The results of the student housing modelling found the Jalousie system to be preferential in all climate zones. This can be attributed to the higher resolution and flexibility of the modelling tools used for student housing analysis and generally for NCC building classes 3-9 (non-residential buildings including student housing, aged care and hotels).

It should be noted that there are two compliance pathways for non-residential building within the building code, deemed to satisfy (DTS) and JV3 performance solution.

Percentage Heat Gain and Loss for Windows compared to Jalousie Benchmark (cont.)

When a DTS approach is used compliance for glazing is determined via the glazing calculator with the input being system U-value and SHGC. In this approach the benefits of reduced air infiltration of the Jalousie system will not be seen. However, if the glazing calculator is assessed using "actual panel sizes" the Jalousie products will be seen as superior to competitor's products, due to its capacity to achieve larger spans.

When the JV3 verification pathway is adopted, an energy model of the project is undertaken. As this modelling is typically undertaken during the detailed design process, the specific glazing systems to be used may not be resolved. As such consultants will use assumed values to undertake modelling, resulting in the preferential performance of the Jalousie system not being considered in the analysis.

As such it can be concluded, that when modelled in detail, the performance benefits of the Jalousie product will be realised.

Loosening of Glass Louvre Bearer

Pull force of more than 200 daN (200kg) on bearers without loosening of louvres. Test no. Q-0305-01.

Sunlight Ageing

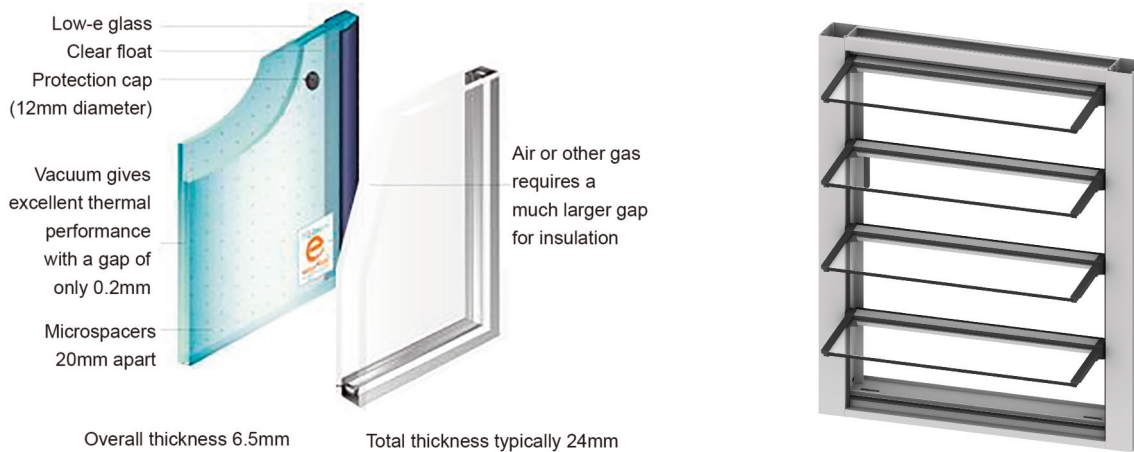
On end caps and drivers, after 300 hours in compliance with standard NF T51-056, no noticeable change in characteristics. CSTB test no. 01-0020.

JX Louvre Window with Vacuum Glazing

Safetyline Jalousie's vacuum glazed louvre window offers architects, building designers and façade engineers the thermal performance of conventional double glazing. Using Pilkington's Spacia, the world's first commercially available Vacuum Glazing, it provides an attractive solution to improving energy efficiency all year round and with all of the same design capabilities as the original JX Safetyline Jalousie Louvre window.

How it works

A vacuum glazed unit consists of an outer pane of low emissive glass and an inner pane of clear float glass, separated by a micro spacer grid of small pillars each measuring just 0.5mm diameter and set 20mm apart. This grid ensures that the two glass panes are kept a fixed distance apart. The edges of the unit are welded to achieve an airtight seal. During the course of vacuum glazing manufacture, the air in the space between the two panes of glass is extracted to create a vacuum via the extraction point (as opposed to filling the space with air or gas). Even a small vacuum is effective in reducing the conduction and convection heat losses, so the gap between the two panes can be reduced to just 0.2mm. The result is an excellent thermal performance from a unit that is only slightly thicker than a single pane of glass.



Overall Performance

An analysis has been undertaken by Inhabit Group to assess the overall performance of the Safetyline Jalousie system with multiple products and panel sizes. Using THERM 6.3, the Australian Fenestration Rating Council (AFRC) total U Value and Solar Heat Gain Coefficient (SHGC) of the vision panels has been calculated based on actual sizes.

Panel Number	U-value / W/m ² K	SHGC
Panel 1: 1400 x 1500mm	4.3	0.56
Panel 2: 1400 x 2700mm	4.0	0.58
Panel 3: 1200 x 2700mm	4.1	0.57
Panel 4: 100 x 2700mm	4.3	0.56
Panel 5: 1400 x 1500 Louvre 1400 x 1500 Fixed (Vacuum)	3.4	0.66
Panel 6: 1400 x 2700 Louvre 1400 x 2700 Fixed (Vacuum)	3.3	0.70
Panel 7: 1400 x 1500 Louvre 1400 x 1500 Fixed (DGU)	3.9	0.66
Panel 8: 1400 x 2700 Louvre 1400 x 2700 Fixed (DGU)	3.7	0.71

Acoustic Performance

Plikington Spacia provides sound insulation to lock out noises generated inside and outside a room, creating the ultimate quiet environment.

The standalone acoustic rating provided by the manufacturer for Spacia 6.2mm is 34Rw.

Safetyline Jalousie louvres have been laboratory tested with 6mm Monolithic, 6.38mm Laminate and 6.52mm VLam Hush (refer to test results on Page 16).

Safetyline Jalousie's results are equivalent or within 1dB of the manufacturer's sound insulation data. It can therefore be estimated that the minimum acoustic rating achieved for the Spacia glass incorporated into the Safetyline Jalousie Louvre System is 33Rw.

Features and Specifications

- Each blade is encapsulated on 4 sides with no exposed edges
- Total thickness of glass 6.5mm
- Spans up to 1400mm
- Inbuilt security via the louvre bearer
- Weatherproofing provided by EPDM and polyethylene brush gaskets
- Cut down blades not available with this glass type* (refer to aluminium louvre heights charts on page 25 and 26 for this product.)
- Diameter of protection cap 12mm

Specifying Safetyline Jalousie louvre windows in Bushfire Prone areas

Australian Standard AS3959:2009 covers the bushfire safety requirements of building in bushfire prone areas. It is primarily concerned with improving the ability of buildings to better withstand the attack from bushfires thus giving a measure of protection to the building occupants as well as the building itself.

What are the Bushfire Attack Level (BAL) Ratings?

There are six BAL ratings. Each one indicates a higher level of risk than the one that precedes it.

They are as follows:



When specifying windows in bushfire prone areas, Safetyline Jalousie louvre windows can be used for all ratings up to BAL-29 without the protection of external screens or bushfire shutters. However, to ensure compliance, the following requirements for each Bushfire Attack Level must be met;

BAL – Low

- Standard window products can be used at this level so there are no specific requirements.

BAL - 12.5

- Internal screen must be used with aluminium mesh
- Glass louvres are to be fitted with aluminium end caps

BAL – 19

- Internal screen must be used with aluminium mesh
- Glass louvres are to be fitted with aluminium end caps
- 6mm toughened safety glass to be used

BAL – 29

- Internal screen must be used with aluminium mesh
- Glass louvres are to be fitted with aluminium end caps
- 6mm toughened safety glass to be used

Comprehensive Specification

The following specification is provided for convenience and non-applicable items should be deleted. The louvre window shall incorporate the single glazed series JX Louvre Window by Safetyline Jalousie (1300 86 3350) and manufactured to achieve specific ratings as per below and as required by Australian Standard AS2047.

- The louvre window shall be the JX by Safetyline Jalousie with 63mm extruded aluminium frame.
- The louvre window shall be capable of a maximum width of 1400mm.
- Each louvre shall be framed on three sides and hinged at the rear edge.
- Glass louvres should require at least 550kg pull out to remove the blades.
- Weatherproofing shall be provided by EPDM and polyethylene brush gaskets.
- Water drainage is to be via the bottom transom.
- The louvre window should be fitted with nylon end caps and capable of opening to 80° at an interval of 135mm.
- Additional security shall be provided by an 8mm stainless steel rod inserted into the louvre bearer.
- Internal fly screens should snap into the frame and be easily removed for cleaning.
- The louvre window shall be capable of achieving a minimum of 33 Rw Acoustic rating.
- The louvre window shall be capable of reaching 800pa water penetration rating.
- The louvre window shall be capable of complying with the “Kids can’t fly” code and balustrade code requirements.
- Reinforcement of louvre articulations shall be included for use as balustrade.

Standard Heights – Glass Louvres

- Wherever possible, standard heights should be used.
- Should standard heights not be used a cut down blade is required. If this blade is less than 60mm the opening would need to be adjusted to standard heights.
- Each lever will only lift a number of louvres depending on the type and length. (Refer to page 28)
- Where one louvre meets the other, and a new lever is required, an intermediate transom is used. This is marginally wider than the normal blade holder and the louvre above that join is 20mm smaller.

Applies to Glass Louvre width up to 1400mm

No of Glass Louvres	Frame Height with 7792	Opening Height with sub-head (7657) & sub-sill (7710)
2	334	359
3	469	494
4	604	629
5	739	764
6	874	899
7	1009	1034
8	1144	1169
9	1279	1304
10	1414	1439
11	1549	1574
12	1684	1709
13	1819	1844
14	1954	1979
15	2089	2114

No of Glass Louvres	Frame Height with 7792	Opening Height with sub-head (7657) & sub-sill (7710)
16	2224	2249
17	2359	2384
18	2494	2519
19	2629	2654
20	2764	2789
21	2899	2924
22	3034	3059
23	3169	3194
24	3304	3329
25	3439	3464
26	3574	3599
27	3709	3734
28	3844	3869
29	3979	4004
30	4114	4139

Standard Heights – Aluminium Louvres

- Standard heights must be used with aluminium louvres as it is not possible to produce a cut down louvre.
- Each lever will only lift a number of louvres depending on the type and length. (Refer to page 28)
- Where one louvre meets the other and a new lever is required an intermediate transom needs to be used. This will impact on the overall frame height.

Applies to Aluminium Louvre width up to 1000mm

* Also applicable for Vacuum Glazed louvres

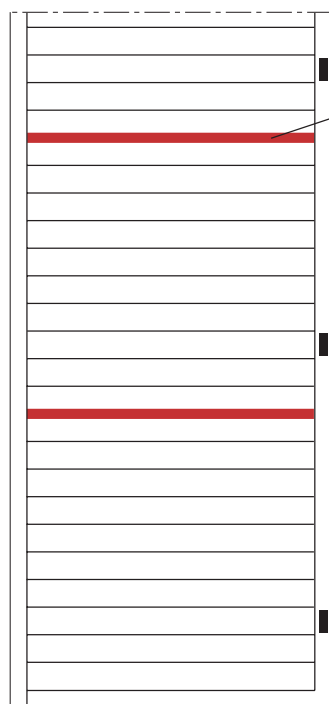
No of Aluminium Louvres	Frame Height with 7792 (mm)	Opening Height with sub-head (7657) & sub-sill (7710)	Intermediate Transom
2	334	359	0
3	469	494	0
4	604	629	0
5	739	764	0
6	874	899	0
7	1009	1034	0
8	1144	1169	0
9	1279	1304	0
10	1414	1439	0
11	1549	1574	0
12	1704	1729	1
13	1839	1864	1
14	1974	1999	1
15	2109	2134	1
16	2244	2269	1
17	2379	2404	1
18	2514	2539	1
19	2649	2674	1
20	2784	2809	1
21	2919	2944	1
22	3054	3079	1
23	3209	3234	2
24	3344	3369	2
25	3479	3504	2
26	3614	3639	2
27	3749	3774	2
28	3884	3909	2
29	4019	4044	2
30	4154	4179	2

Applies to Aluminium Louvre width greater than 1000mm

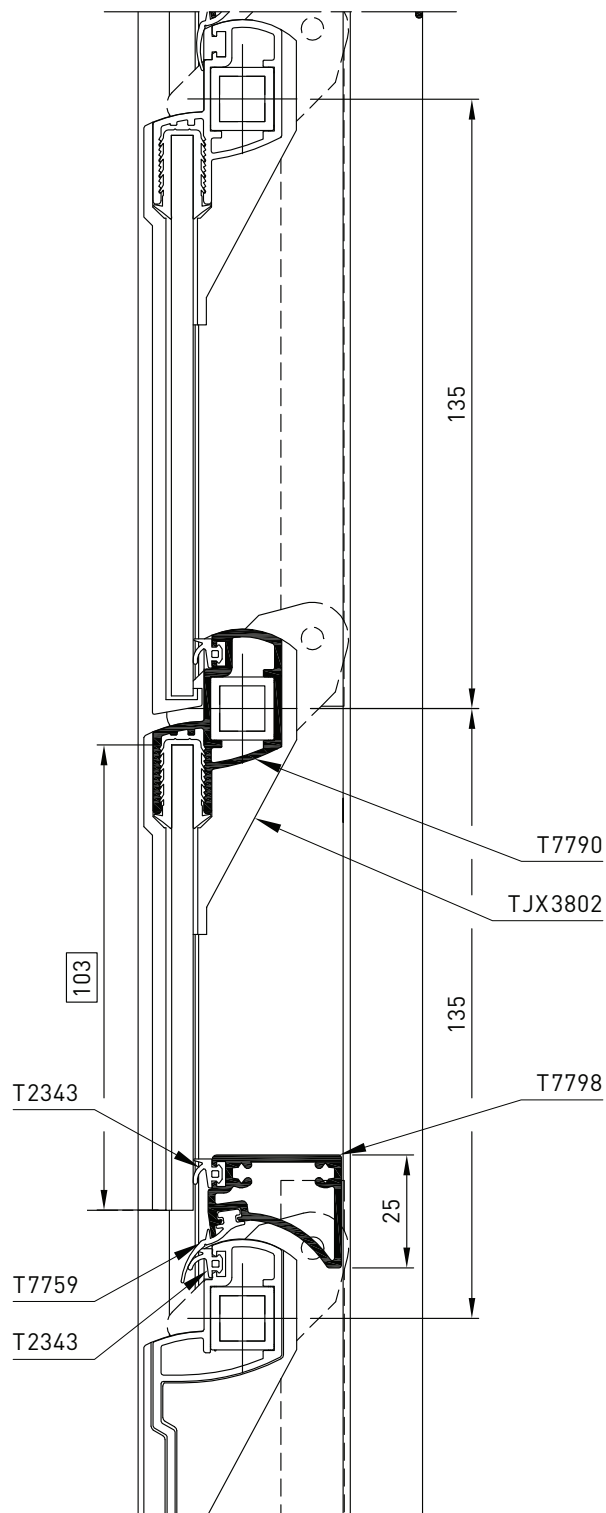
* Also applicable for Vacuum Glazed louvres

No of Aluminium Louvres	Frame Height with 7792 (mm)	Opening Height with sub-head (7657) & sub-sill (7710)	Intermediate Transom
2	334	359	0
3	469	494	0
4	604	629	0
5	739	764	0
6	874	899	0
7	1009	1034	0
8	1144	1169	0
9	1299	1324	1
10	1434	1459	1
11	1569	1594	1
12	1704	1729	1
13	1839	1864	1
14	1974	1999	1
15	2109	2134	1
16	2244	2269	1
17	2399	2424	2
18	2534	2559	2
19	2669	2694	2
20	2804	2829	2
21	2939	2964	2
22	3074	3099	2
23	3209	3234	2
24	3344	3369	2
25	3499	3524	3
26	3634	3659	3
27	3769	3794	3
28	3906	3929	3
29	4039	4064	3
30	4174	4199	3

Intermediate Transom 7798 (for glass & aluminium louvres)



Intermediate transom for more than 11 louvres



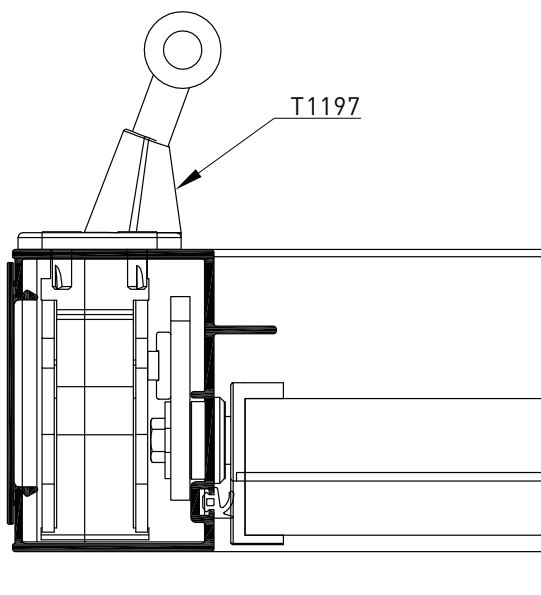
Standard Lever and Motor Operation

(for glass and aluminium louvres)

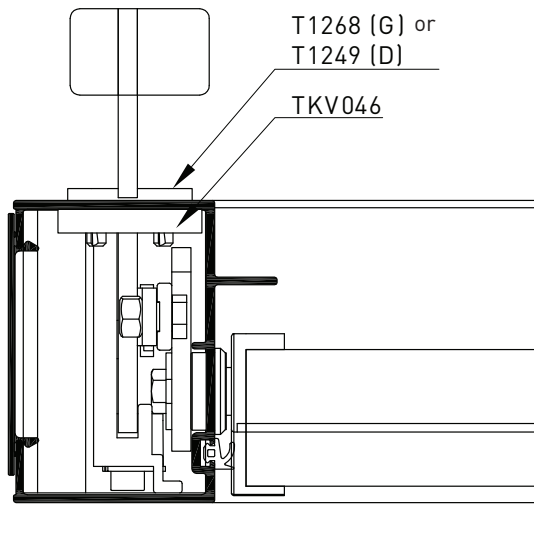
Louvre width (mm)	400	600	800	1000	1200	1400
No Louvres	Number of Levers/Motors Required					
3	1	1	1	1	1	1
4	1	1	1	1	1	1
5	1	1	1	1	1	1
6	1	1	1	1	1	1
7	1	1	1	1	1	1
8	1	1	1	1	1	1
9	1	1	1	1	2	2
10	1	1	1	1	2	2
11	1	1	1	1	2	2
12	2	2	2	2	2	2
13	2	2	2	2	2	2
14	2	2	2	2	2	2
15	2	2	2	2	2	2
16	2	2	2	2	2	2
17	2	2	2	2	3	3
18	2	2	2	2	3	3
19	2	2	2	2	3	3
20	2	2	2	2	3	3
21	2	2	2	2	3	3
22	2	2	2	2	3	3
23	3	3	3	3	3	3
24	3	3	3	3	3	3
25	3	3	3	3	3	3
26	3	3	3	3	3	3
27	3	3	3	3	3	3
28	3	3	3	3	3	3
29	3	3	3	3	3	3
30	3	3	3	3	3	3

Choice of Handles

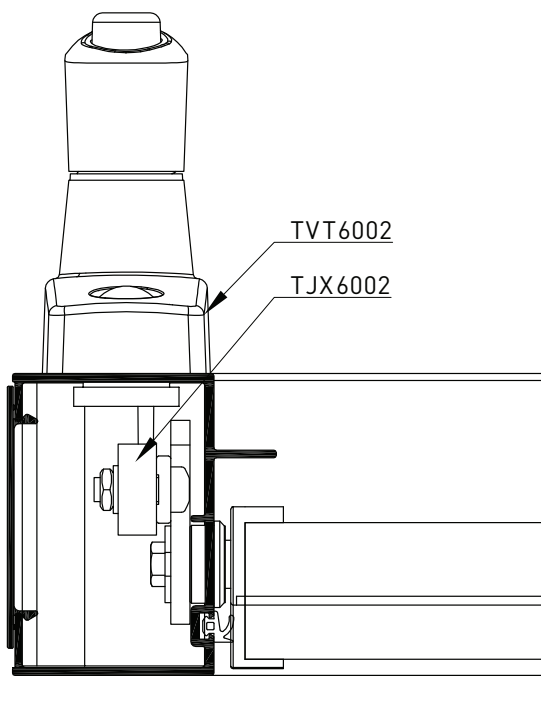
Reversible operator set T1197



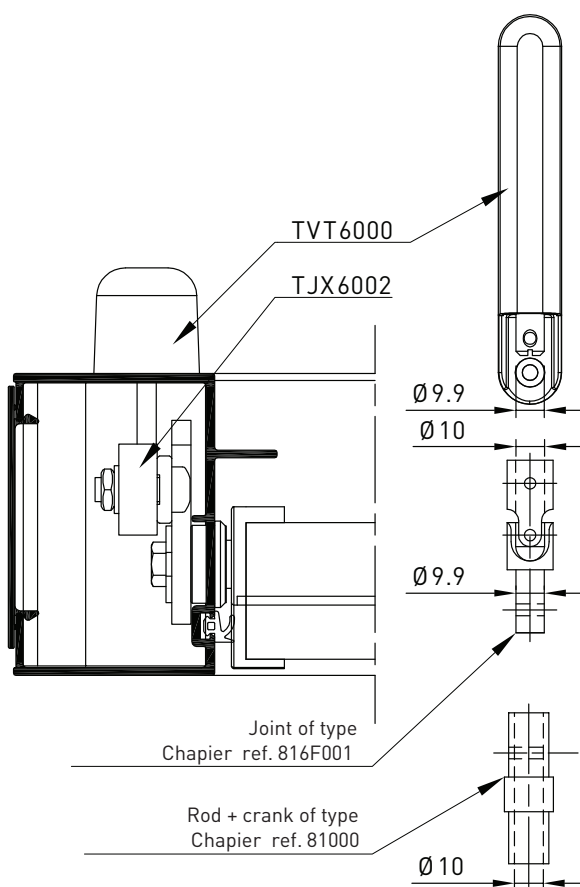
Lever mechanism T1268 (R) or T1249 (L) + nut set TKV04



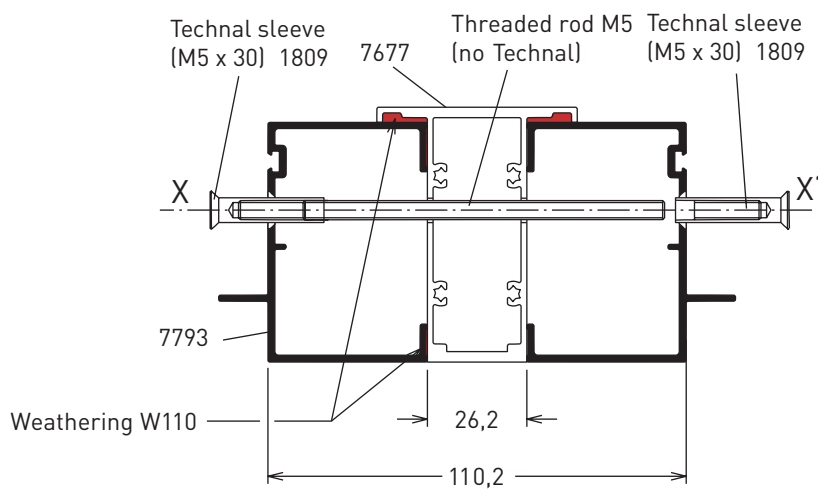
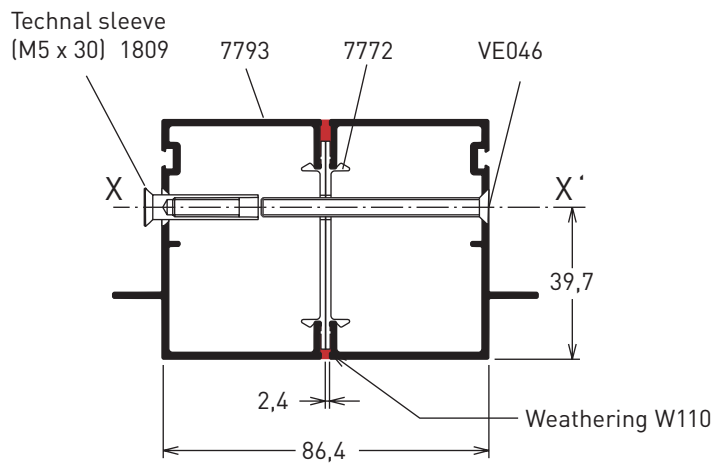
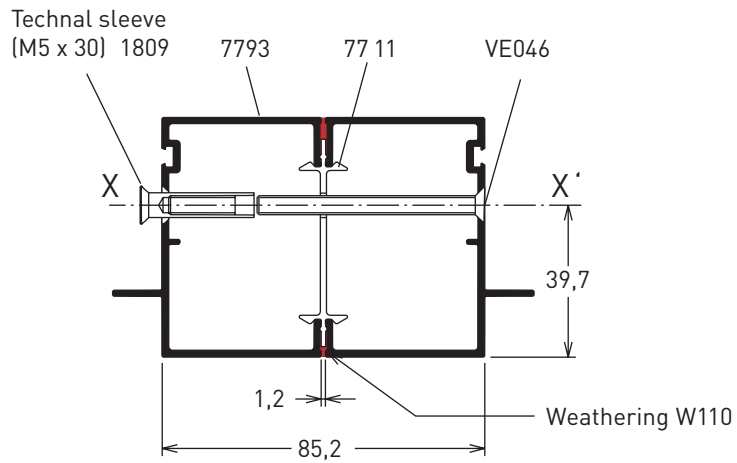
Handle TVT6002 + drive set TJX6002



Winch operator set TVT6000 + drive set TJX6002

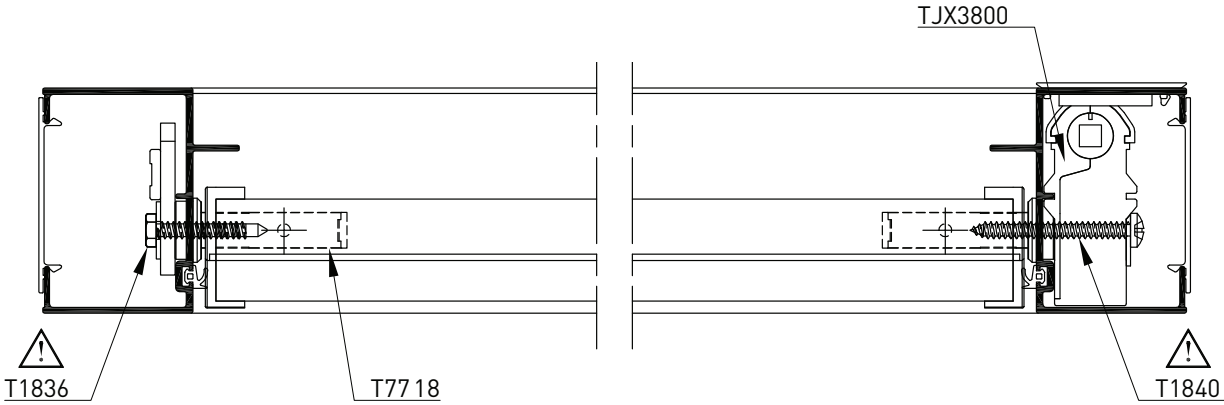
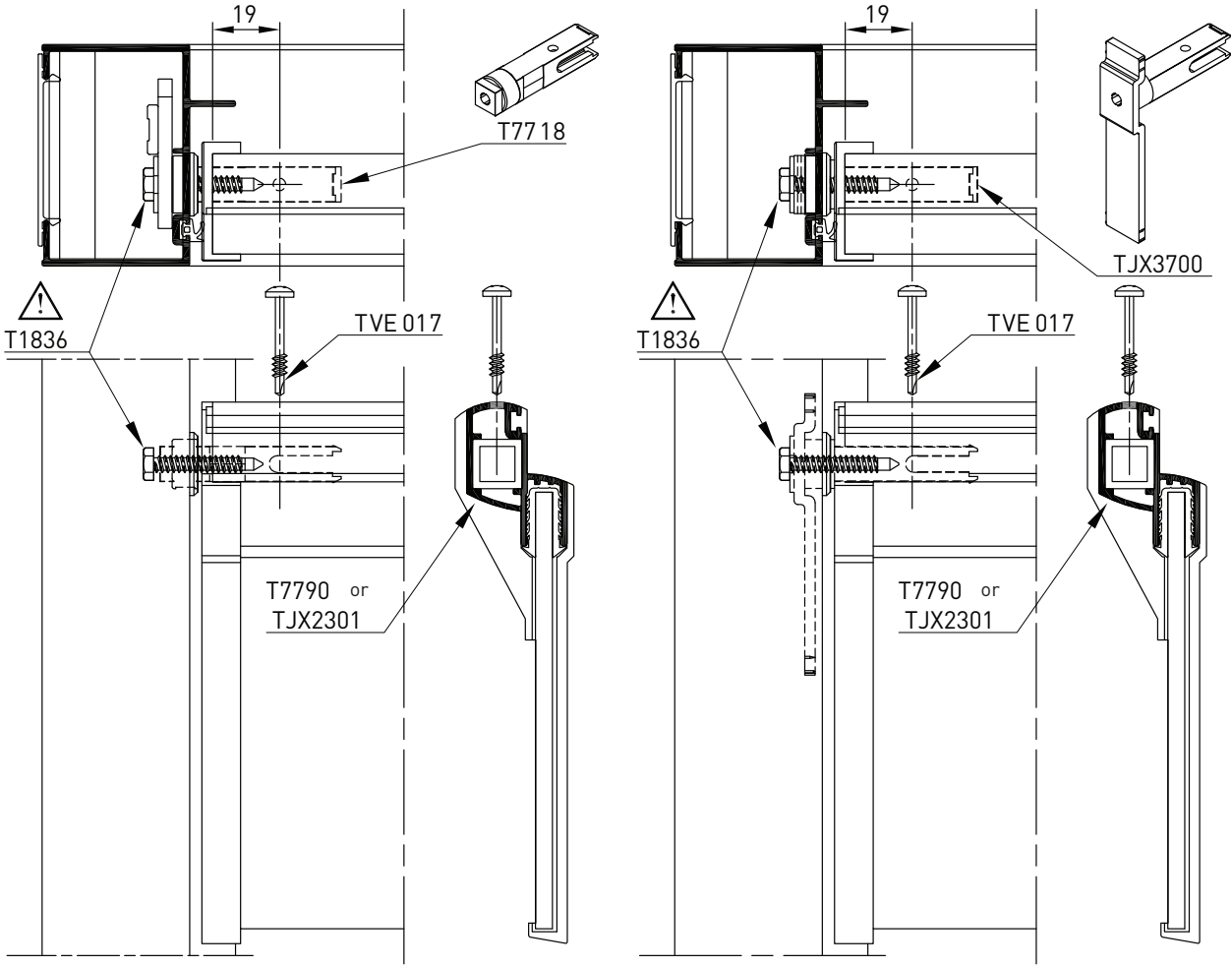


Frame Joint



Reinforcer for Use as Balustrade

Manual operator.
Screw TVE017 mandatory for use of frame as guardrail.



Guarantee

Safetyline Jalousie is a member of the Australian Window Association and as such conforms to an Industry Code of Conduct designed to protect consumers.

Safetyline Jalousie is inspected by independent third party NATA accredited auditors to validate that the window products examined have been manufactured to the relevant Australian Standards and the legislative requirements of the National Construction Code of Australia.

6 Year Guarantee

Guarantee additional to legal rights.

This Guarantee is provided in addition to any warranty or guarantee imposed by law and in particular the guarantees implied by the Competition and Consumer Act 2010 (Cth). In no way does this Guarantee seek to exclude or limit any right or remedy you have in law. However to the extent that is permitted by law any other warranties or guarantees are excluded. For the purpose of this warranty "the product" means a window product ordinarily manufactured and sold by the manufacturer.

Subject to the conditions and limitations below, Safetyline Jalousie guarantees that its products are of acceptable quality and free of any defect caused by the manufacturer.

Limitations

This warranty does not apply to:

- a) Moving parts – a three year warranty will apply on moving parts which wear out as part of normal use;
- b) Electrical Components – a one year warranty will apply for the LDF100 Louvre drive and a 3 year warranty for the TJX3701 Internal Drive;
- c) Parts supplied by other manufacturers as separate components and where such components are warranted or guaranteed by its manufacturer or supplier those guarantees or warranties whether express or implied are assigned to whom the goods are supplied;
- d) Cosmetic damage;
- e) Damage caused by accident, misuse, transport, installation or any external cause;
- f) Failure to install, use and operate the product in a way that is not in accordance with the manufacturer's instructions, good building practice, relevant building standards or a use for which the product has not been designed or recommended by the manufacturer.
- g) Service work that is carried out by other than the Safetyline Jalousie or authorised Safetyline Jalousie agents.

Warranty Claims

Should you wish to make a claim under this guarantee you are required to first notify the manufacturer. Other than as provided by law, the manufacturer will repair or replace the product to the extent that it is functionally equivalent to the product supplied but excludes any installation costs. Where a product has been repaired or replaced, this warranty shall apply to the repaired or replaced product for the balance of the period provided by this guarantee.

Maintenance

Safetyline Jalousie products are manufactured from the most suitable materials and finishes available to the specification provided and when properly maintained will give many years of quality service. Failure to maintain may void the warranty.

Builders / home owners please note:

When installing windows there are some precautions you should take to ensure that the products will retain their ex-factory condition until installation is complete and the job handed over.

Windows should be stored in a clean, dry area away from cement, lime, paint, acid etc. and must be protected from building materials and loose debris such as wet plaster, mortar, paint and welding splatter and alike.

- Store in a dry location, under cover where possible, to protect against damage
- Carry windows in the vertical position
- Do not rack frames out of square
- Prevent exposure to moisture

Aluminium

External window frames should be washed with clean water. If the product is exposed to salt air or industrial pollutants it should be washed at least every three (3) months. In rural areas where normally there is very little contaminated moisture you may not need to clean your aluminium fittings more than every six (6) months. Aluminium requires only minimal maintenance but, like your motor car, the finish may deteriorate if dirt collects on the surface and is allowed to remain unwashed over a period of time. This is because dirt absorbs moisture present in the atmosphere. To clean aluminium use the mildest treatment you can to produce satisfactory results. Start with warm water and soap or detergent or for anodized material try solvent cleaners (e.g. kerosene, turpentine, white spirit) or nonetching chemical cleaners or a wax based polish cleaner. Keep water free from dirt and grit and ensure that the weep slots in the window are clear to allow maximum drainage.

Glass

To clean, simply wipe over the surface with a few drops of methylated spirits on a damp cloth and then polish the surface dry with a lint free cloth. Proprietary glass cleaners are not recommended as some can cause damage to low-E coating and the interlayer in laminated glass. Ensure that all cleaning cloths are free of any abrasive substances. Avoid causing extreme temperature changes as this may lead to thermal fracture of the glass (do not direct hot or cold water onto glass).

Name plates and identification plates

Please leave name plates, part numbers and rating labels on products for future reference. A permanent performance label is a requirement of the BCA in all states and territories of Australia.

Installation

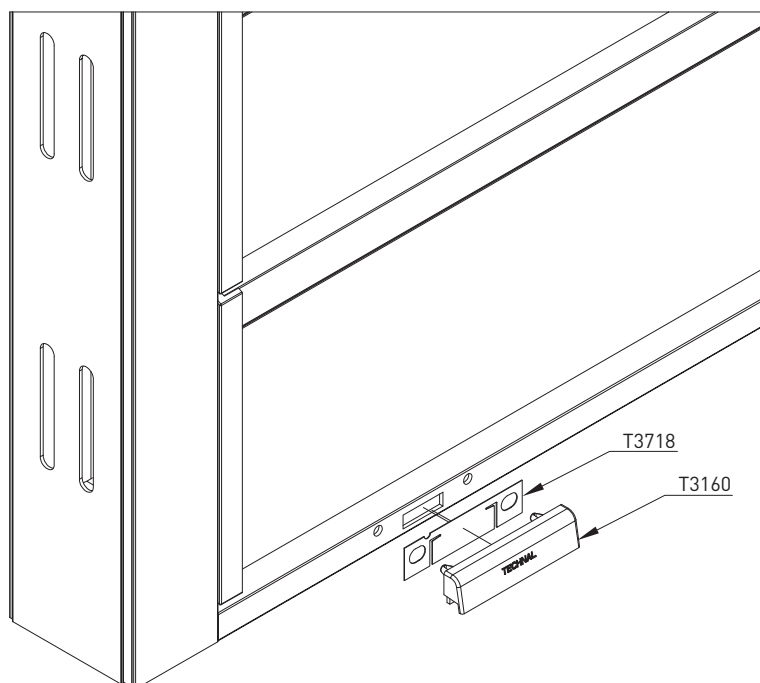
The installation methods for Safetyline Jalousie louvres will vary slightly depending on the type of construction however, there are 4 key steps to always follow:

1. **Square and plumb.** This will ensure the functionality of the system.
2. **Packing.** Packing between the window and building frame ensures that the frame remains square and plumb and adds strength to the screw fixing.
3. **Fixing.** The window needs to be fixed correctly to enable the system to withstand the wind loads applicable to the site.
4. **Flashing.** Windows should be flashed to stop water penetration around the outside of the system.

Safetyline Jalousie louvre windows provide easy and fast installation using counter sunk screws through the pre punched holes in the upright sections otherwise the windows can be supplied with a fin section for installation with timber reveals.

It is the installer's responsibility to provide the required window dimensions at the time of order and ensure that adequate clearance has been allowed.

Safetyline Jalousie louvres are sealed on all four sides and water is drained from the slots in the sills. Weathering deflectors are fitted over the drainage holes as shown below.



Automation

Whilst louvre windows provide the perfect natural ventilation solution there are times when an automation solution is required. This could be as a result of windows being located out of reach or more importantly where the louvres are to form part of a buildings natural ventilation strategy or smoke relief system.



The LDF100 actuator used on our louvres is installed, programmed and tested before the louvres leave our factory. With no visible moving parts, these actuators are microprocessor controlled allowing them to be tailored to the louvre for optimum performance and ensuring that they are equipped with the latest safety functions such as anti-pinch which detects any obstructions when the louvres are closing, an essential element for schools, aged care and many other public installations.

The louvres and controls form part of a complete solution and when the opportunity presents itself in combination with our automation partners at EBSA we can assist to design a solution to meet almost any outcome.

System Elements can include:

- User Interface via manual wall switch, touch screen or fully automated through a ventilation controller or as part of a home or building automation system.
- Weather logic control by integrating wind, rain, temperature or other external sensors
- Indoor Air Quality can be maintained with Air Quality Sensors (CO₂, Humidity, Temperature)
- Auto close on loss of power to prevent windows being stuck open during a storm
- Night purge to exhaust stale air at night
- Lockout function to disable operation of the windows out of hours, perfect for schools and office buildings

There is almost no limit to the complexity of any system that we can offer however successful implementation requires early planning as many features cannot be retrofitted.

Smoke Relief

In addition to the above functionality, the LDF100 actuator in combination with EBSA's Smoke Control Panels provide a comprehensive Smoke Relief System certified to EN12101-2 (ISO21927-2). These panels are equipped with all the necessary failsafe elements including a monitored 72 hour failsafe battery backup with fault reporting to the BMS/FIP and an option to monitor the integrity of the field cables to the actuators.

The Safetyline Jalousie Louvre Window Smoke Relief Solution comprise 4 major components: 1) louvres; 2) drives; 3) cabling; and 4) controls which interface with the fire indicator panel (FIP) and building management system (BMS). The automation hardware is certified to EN12101 (ISO21927).

The Smoke Relief Solution can be utilised for the following purposes:

1. **Natural Smoke Relief/Exhaust** – in the case of smoke/fire the louvre windows automatically open and smoke naturally leaves the building.
2. **Make-Up Air to a Mechanical Exhaust** – buildings are equipped with large exhaust fans that operate in tandem with the opening of the louvre windows.
3. **Stairwell Pressurisation** – louvres will open on the relevant floor to allow air to exit the stairwell. The ISO certified electronics inside the drives can be programmed to open and/or close the louvre windows based on a range of triggers.

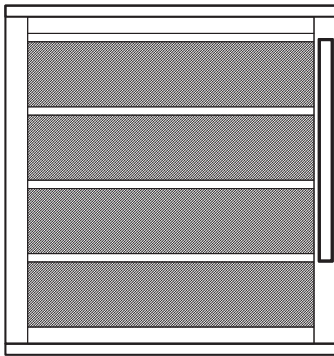
In partnership with window automation specialists EBSA, Safetyline Jalousie has the ability to deliver automation solutions to suit a range of projects.

LDF100 Louvre Drive Features

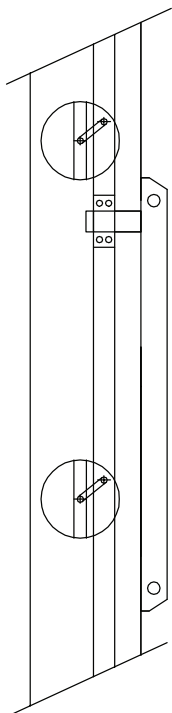
Louvre drive LDF 100 has been specially designed for infinitely variable electrical control of louvres.

- All drive functions, characteristics and stroke length are individually programmable via Software
- Integrated anti-pinch function
- Low electrical consumption
- Corrosion resistant operating components
- Equipped with additional passive and active anti pitch function
- Useable for smoke ventilation
- Fire resistance (30 minutes/300°C)
- Stainless steel housing
- Dimensions L 413mm x W 25mm x D 25mm
- Power Supply DC 24V +/- 20%, current consumption 0.8A
- Up to 800N opening force

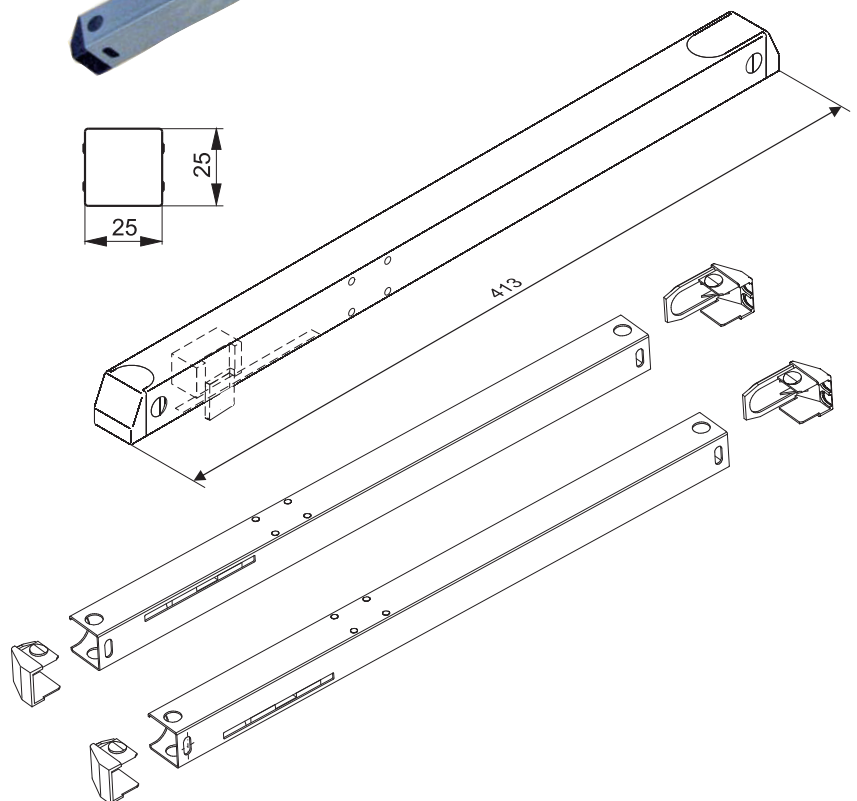
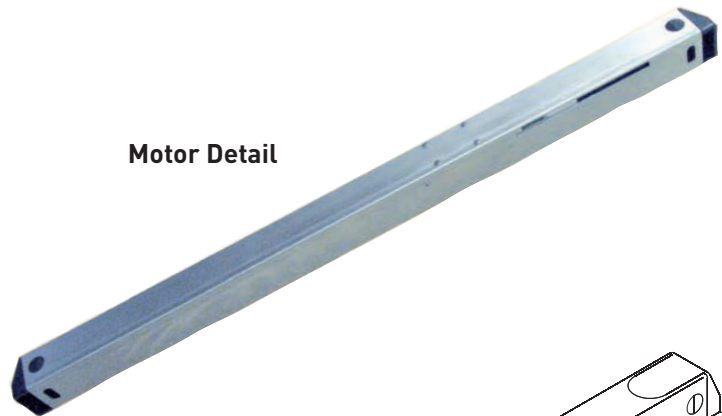
Motor Mounted On Frame



Louvre Closed Position



Motor Detail



TJX3701 Internal Drive Features

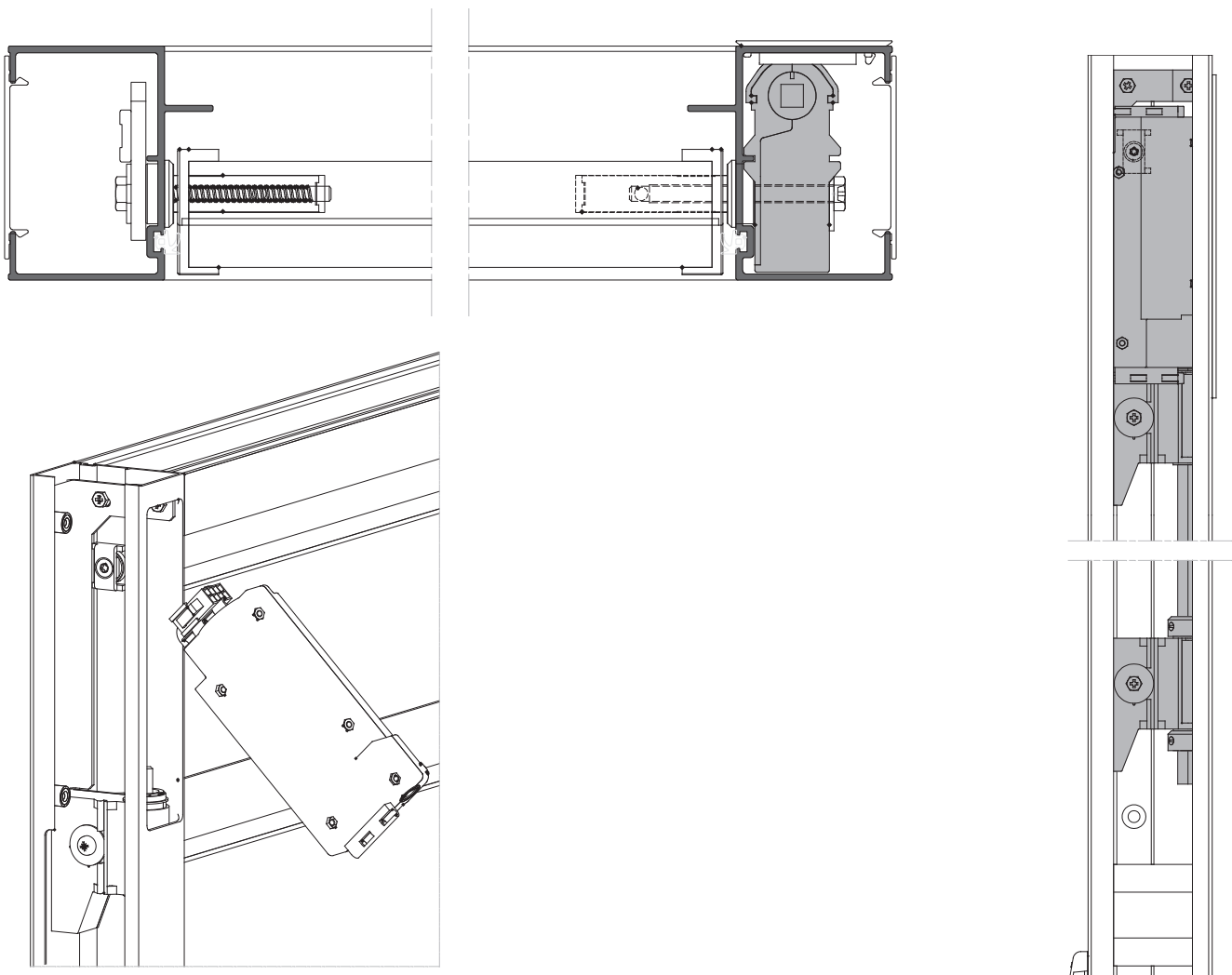
The TJX3701 drive is concealed inside the window frame and optimises opening and closing operations to improve user comfort. This motor option is ideal for out of reach locations and where no visible operating mechanism is preferred.

Access to the motor is facilitated via a cover plate in the mullion which means there is no need to remove the window should maintenance be required.

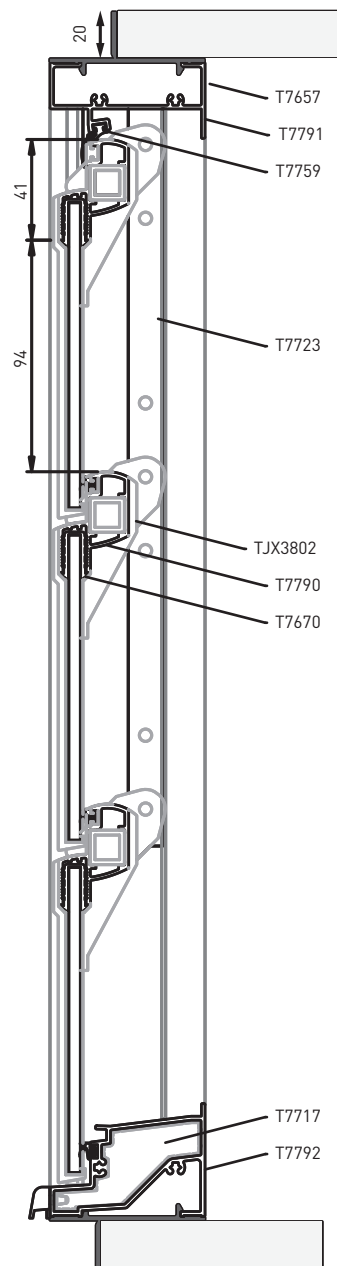
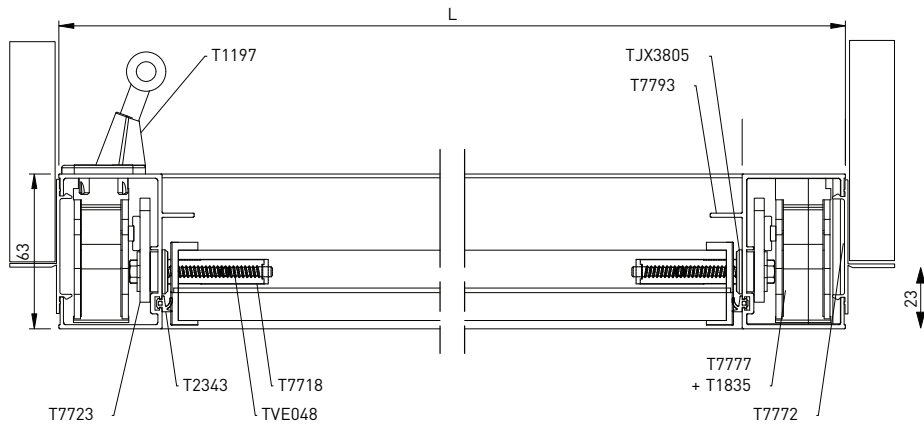
A single motor can power up to 18 aluminium louvres or 12 glass louvres and has been endurance tested over 30,000 cycles.

Wire or radio remote control is available as well as the option to operate via smartphone or tablet using Somfy's "My Link" product.

- Closing speed limited to 5mm/s (anti pinch standard) 40 sec opening / 45 sec closing
- Power Supply DC 12V
- Low electrical consumption (10W)
- Limit switch control integrated
- Option of connecting to central control system
- 3 Year guarantee

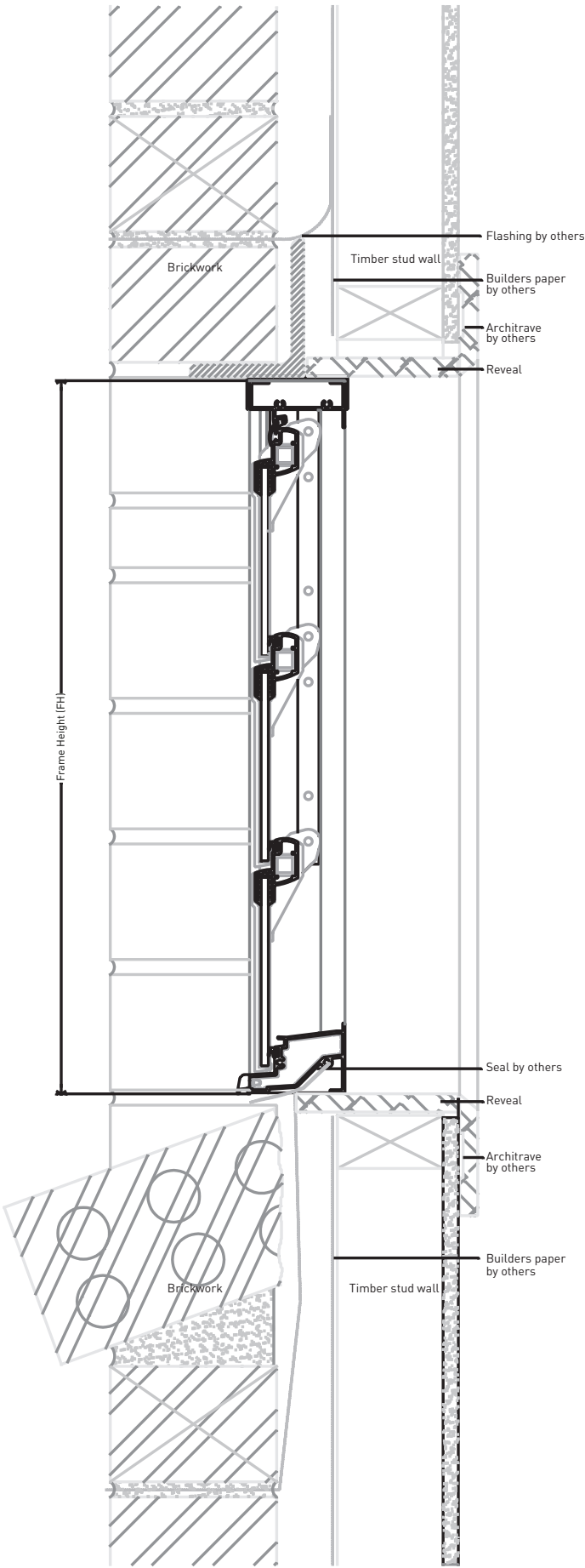


Timber Reveal



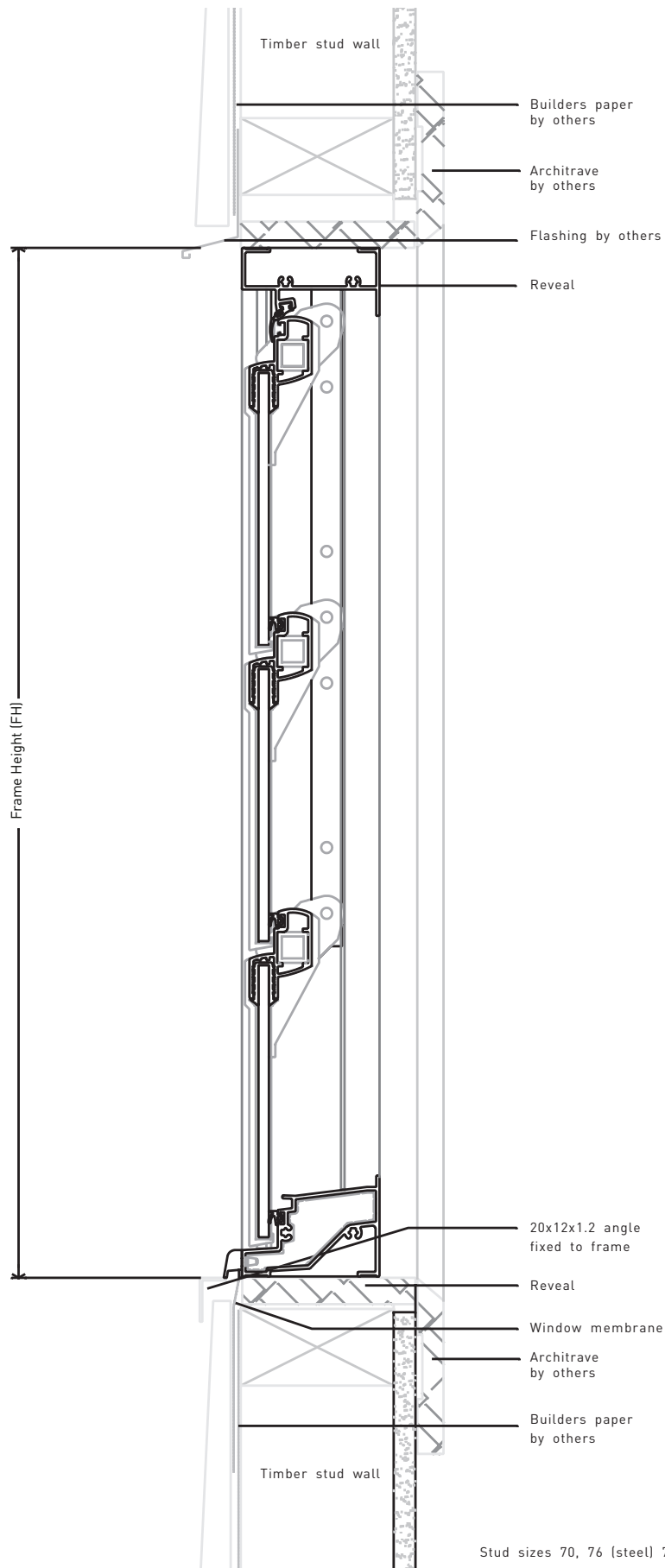
JX-TR

Brick Veneer



JX-BV

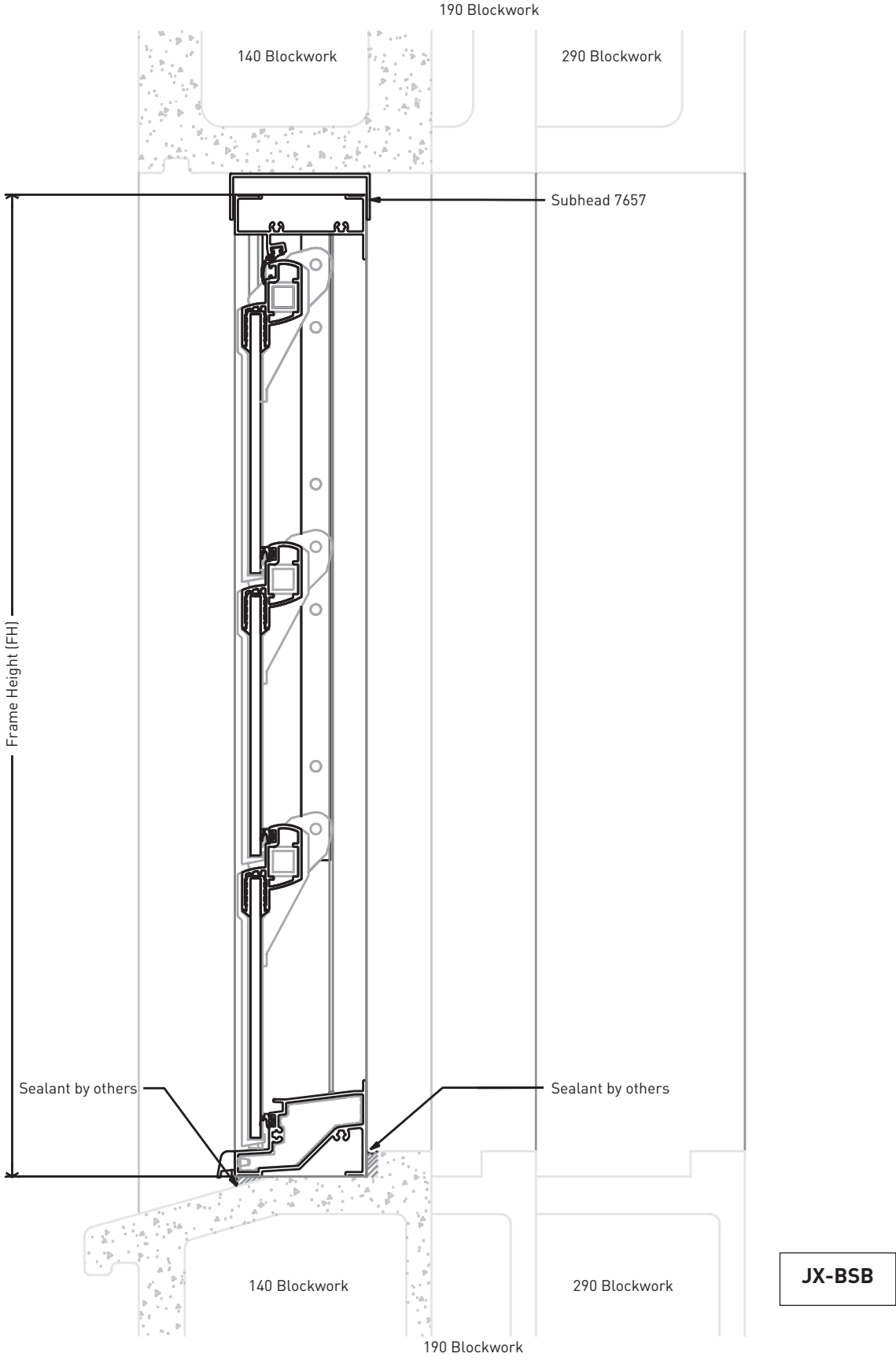
Stud Cladding



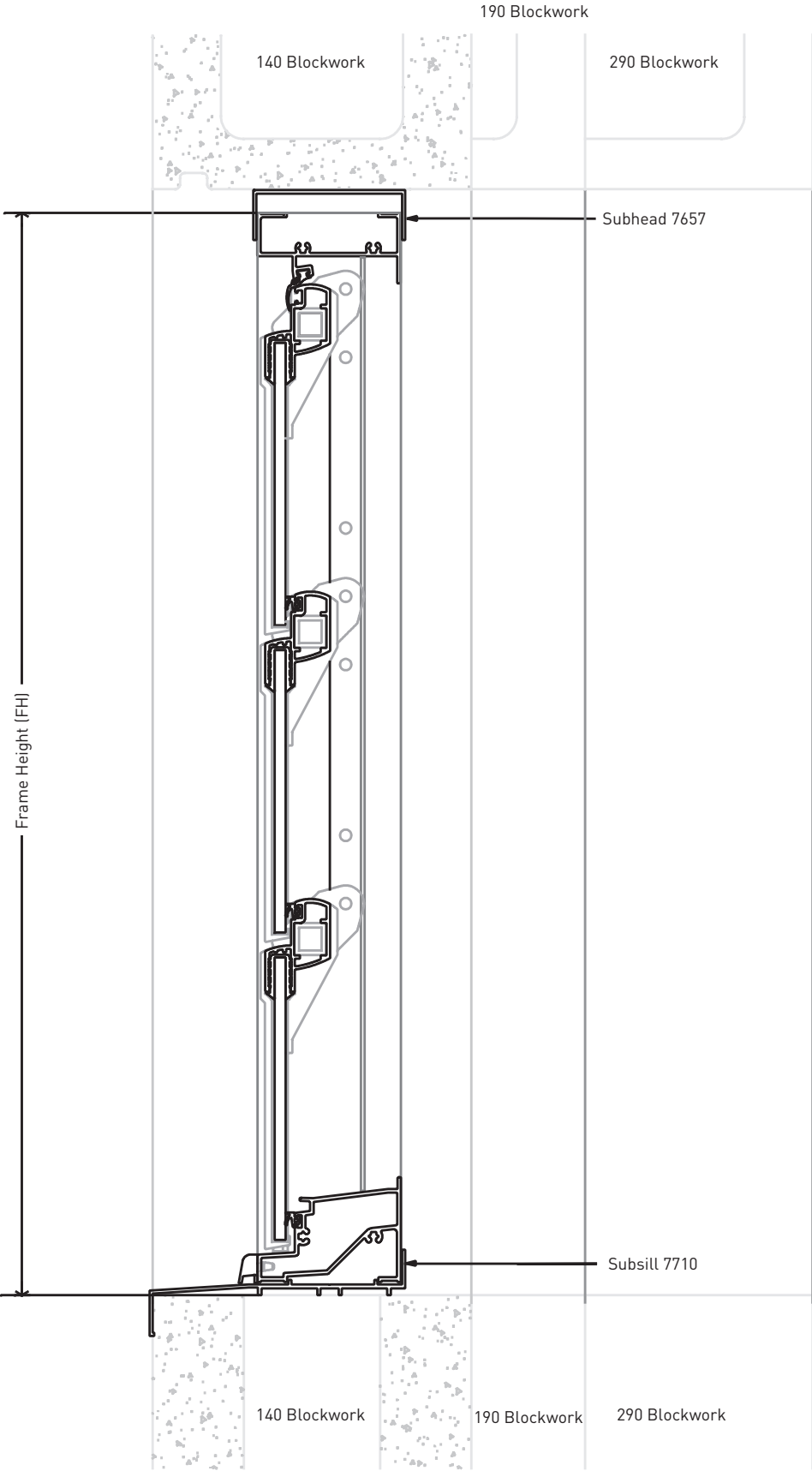
Stud sizes 70, 76 (steel) 75, 90 & 100

JX-SC

Blockwork - Sill Block

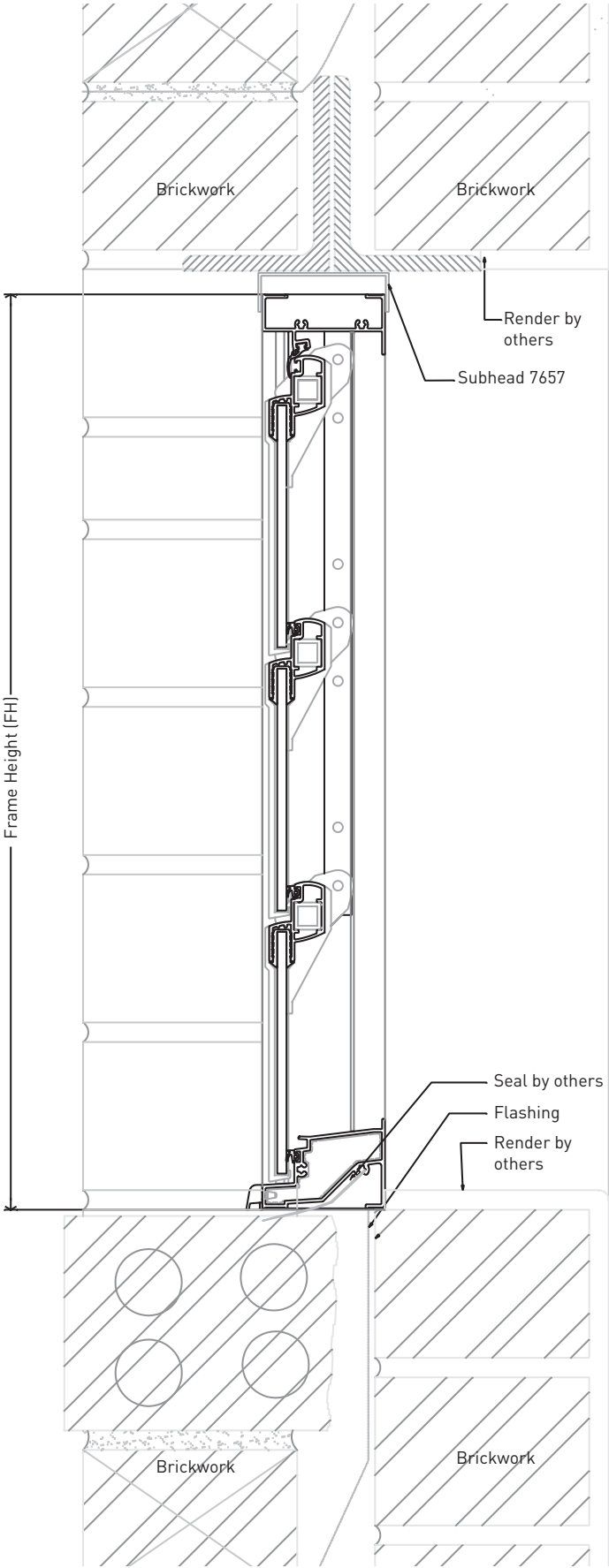


Blockwork – Flat Sill



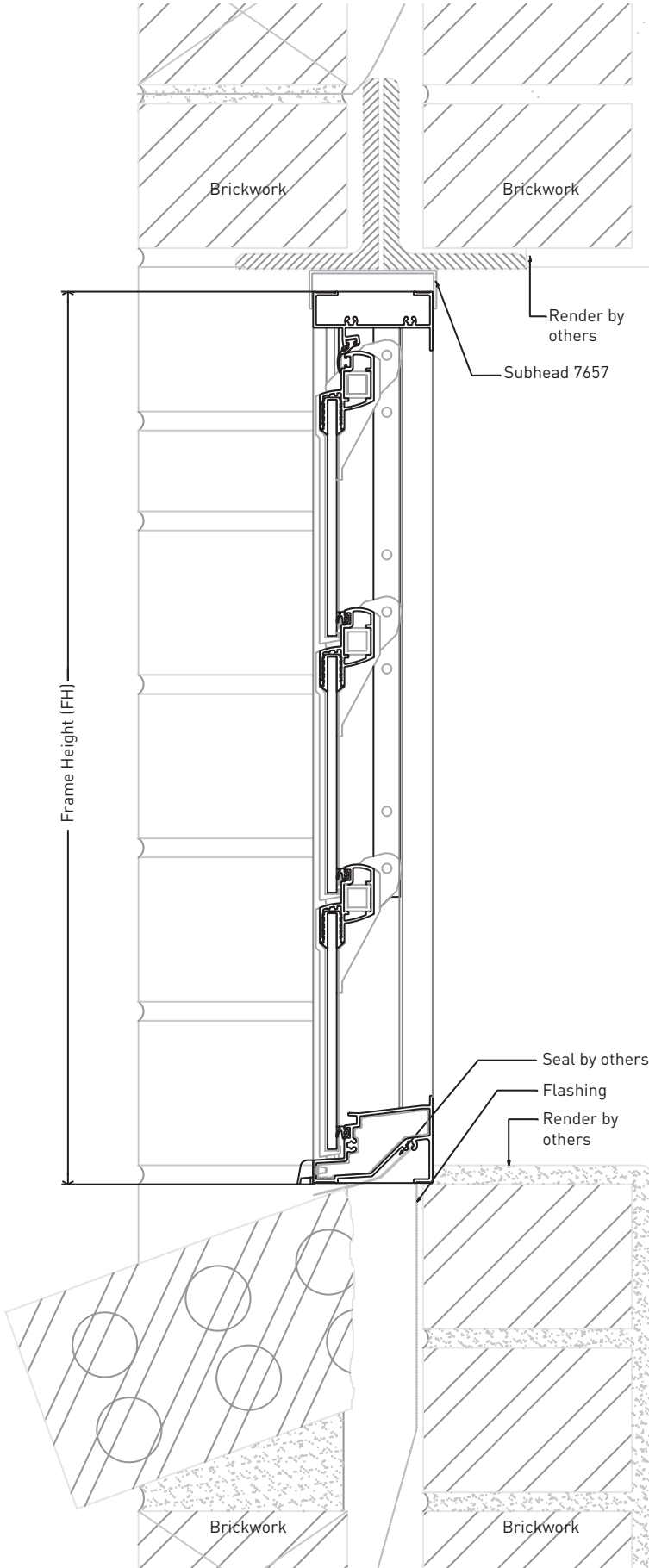
JX-BFS

Brick Double – Flat



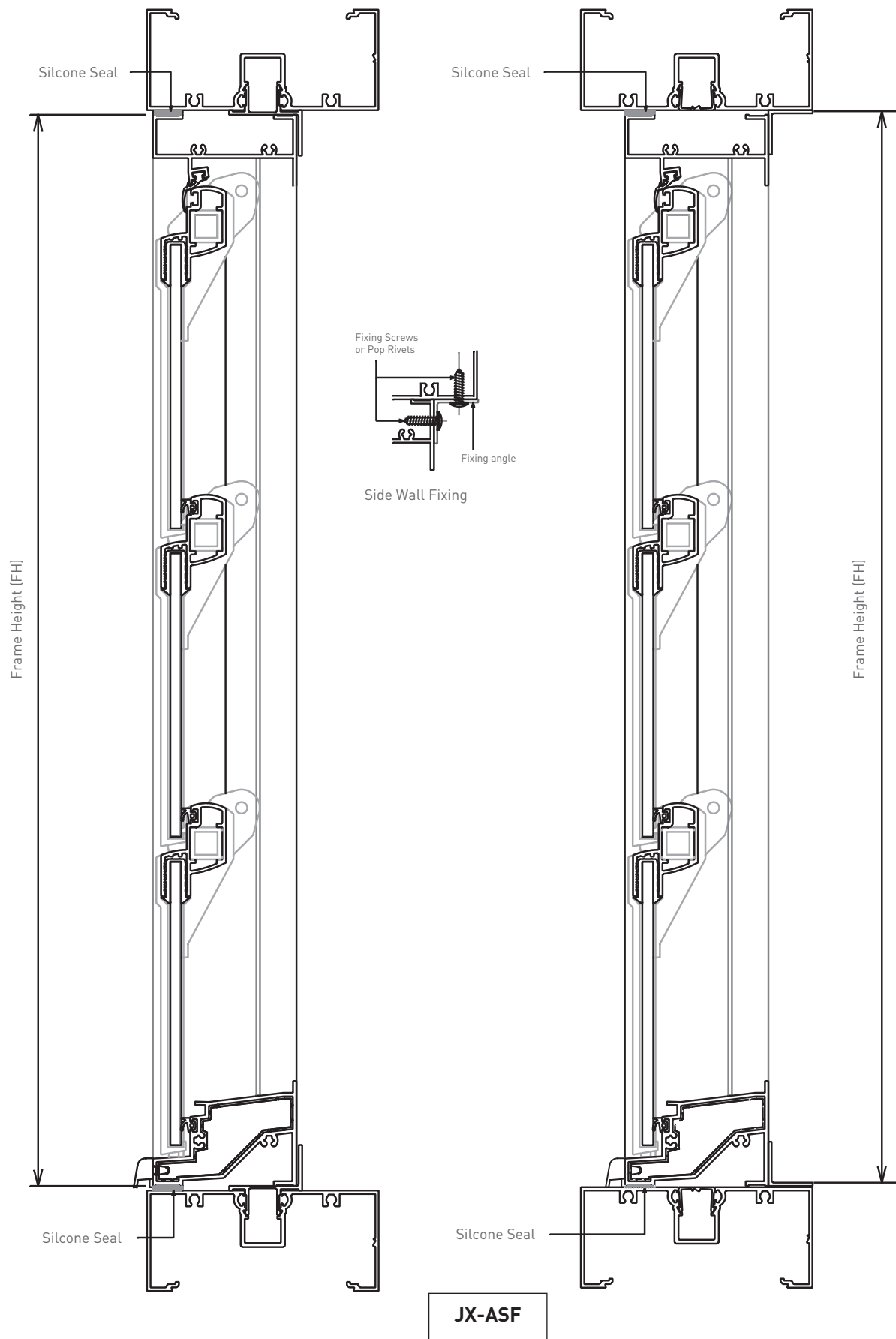
JX-BDF

Double Brick - Sill

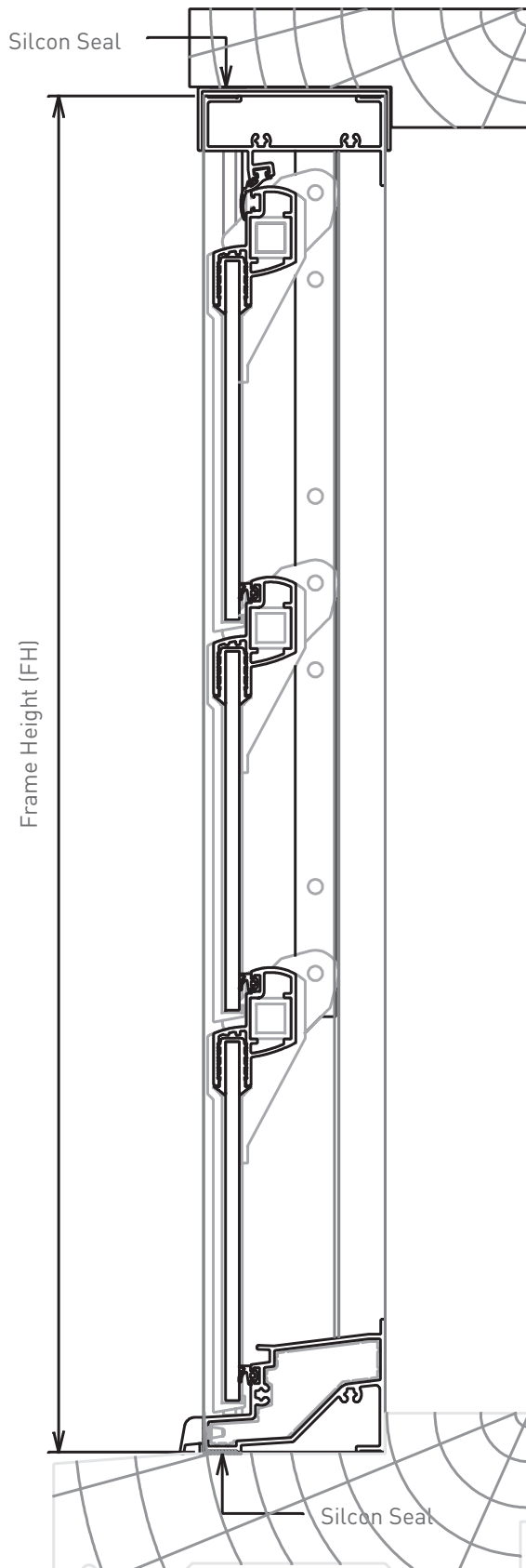


JX-BS

Integration with Aluminium Sub-Frame



Timber Frame

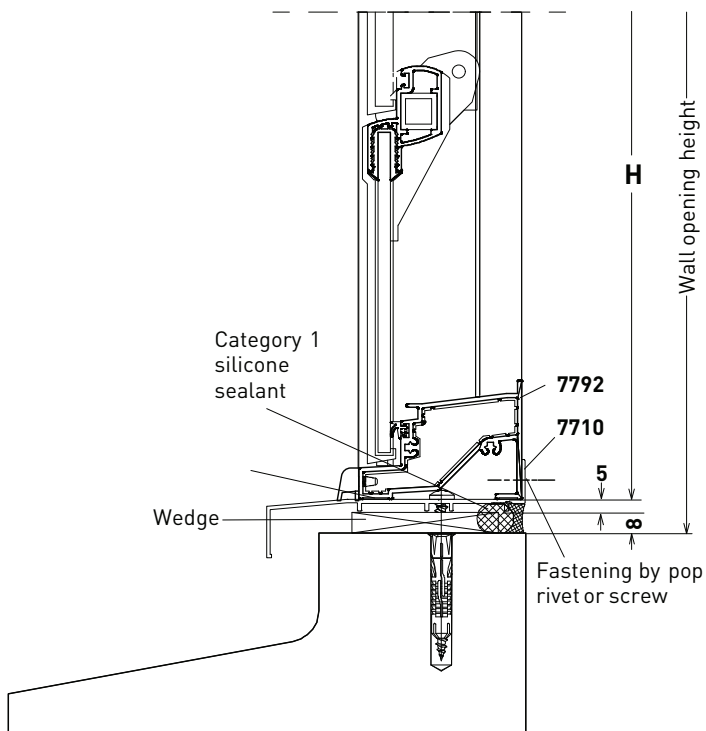
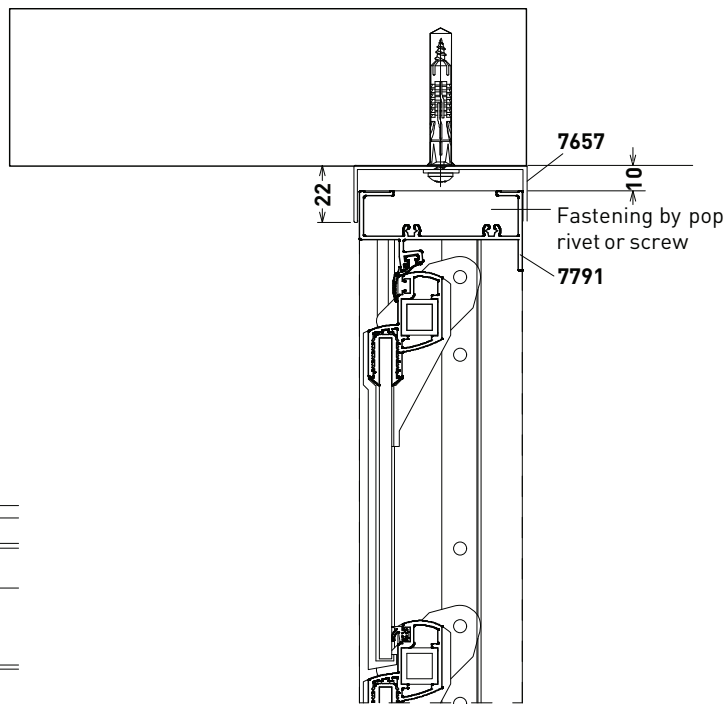
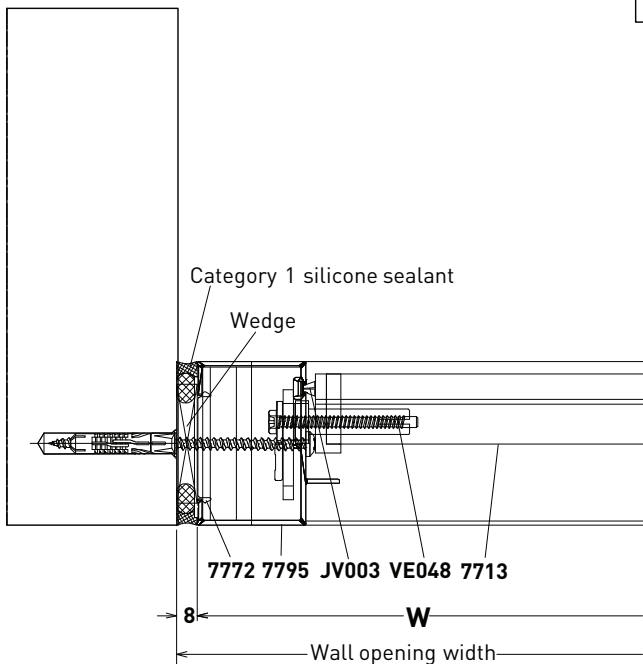


JX-TF

Sub-head & Sub-sill Installation

Vertical cross section, scale 1/3

Horizontal cross section



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