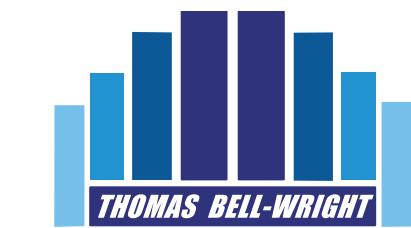


ECO - 500 SLIDING

Certificate of Testing

Certificate Number: CHF02



THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

Date: 2007, June

Project: Seven Tides Ibn Batuta Complex
at Gardens Mall

System Supplier: Al Hamad Industries Co.,
(L.L.C.)
Extrusion Division
P.O. Box 6275
Sharjah, U.A.E.

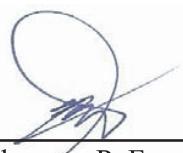
System: ECO - 500 Thermal Break Sliding
Window

Tested for:	Air Infiltration	Pass
	Static Water Penetration	Pass
	Structural Load	Pass
	Operation Force Test	Pass
	Structural Load to Safety	Pass

Notes: Testing conducted in accordance with ASTM, or industry standards.
This certificate to be read in conjunction with the full report of testing.
Refer to report for performance criteria.

Thomas Bell-Wright International Consultants

Sandy Dweik
Sandy Dweik
Quality Manager



Clarence P. Facun
Testing Engineer

Date: 19 June 2007

Test Certificate of Sliding Window

a. Air infiltration test

PROJECT NAME:		SEVEN TIDES, IBN BATTUTA COMPLEX	
AIR INFILTRATION TEST ASTM E 283			
AMBIENT CONDITIONS		Monday, April 30, 2007 9:30:00 AM Reset Date	
Air Temperature	37 °C	Barometric Pressure	10.15 mb
Wind Speed	m/s	Wind Direction	Deg
TESTING ENGINEER		SPECIMEN TEST CRITERIA	
Clark Facun	▼	Width	1.3 m
Inlet Nozzle Size	56 mm	Height	1.4 m
Nozzle Connection	A- PT L1	Test Pressure	300 Pa
Chamber Connection	B- PT L2	Area	1.82 m ²
		Length of opening joint	0.0 m
		Permitted Leakage area	2.00 m ³ /hr/m ²
		Permitted Leakage(Meter opening joint)	0.0 m ³ /hr/m
		Total permitted Leakage	3.6 m ³ /hr
READINGS		WITHOUT POLYETHYLENE	
Chamber Pressure	300 Pa	Chamber Pressure	300 Pa
Nozzle Pressure	34 Pa	Nozzle Pressure	82 Pa
Differential Pressure	0 Pa	Differential Pressure	266 Pa
Flow	0 m ³ /hr	Flow	175 m ³ /hr
Nozzle Flow	62.2 m ³ /hr	Nozzle Flow	96.7 m ³ /hr
Data Recorded at	9:50:00 AM	Data Recorded at	10:40:00 AM
SUMMARY RESULTS		Specimen Leakage 34.55 m³/hr Conclusion Pass	
Permitted Leakage	4 m ³ /hr	Signature	

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

ECO - 500 SLIDING

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b. Static water penetration test

PROJECT NAME:		SEVEN TIDES, IBN BATTUTA COMPLEX								
STATIC WATER PENETRATION TEST to ASTM E 331										
AMBIENT CONDITIONS										
Air Temperature	39	°C	Wind Speed	m/s						
TESTING ENGINEER										
Clark Facun	<input type="button" value="B- PT L2"/>									
Chamber Connection										
SPECIMEN TEST CRITERIA										
Width	1.3	m	Height	1.4						
The spray rack will consist of 3 rows of			3	Nozzles						
Test Pressure			240	Pa						
<input type="button" value="Reset Date"/> <input type="button" value="Relative Humidity"/> <input type="button" value="15 %"/> <input type="button" value="Update Links"/>										
<input type="button" value="Start"/> <input type="button" value="Stop"/> <input type="button" value="Zero"/> <input type="button" value="Pass"/> <input type="button" value="Conclusion"/>										
<table border="1"> <thead> <tr> <th>Hours</th> <th>Minutes</th> <th>Seconds</th> </tr> </thead> <tbody> <tr> <td>0</td> <td>15</td> <td>0</td> </tr> </tbody> </table> Timer					Hours	Minutes	Seconds	0	15	0
Hours	Minutes	Seconds								
0	15	0								
Chamber Pressure 240										
Start/reset timer <u>11:00:00 AM</u> Calculated finishing time <u>11:15:00 AM</u> Actual when timer stopped <u>11:25:00 AM</u> Conclusion <input type="button" value="Pass"/> Signature _____										
READINGS										

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

Test Certificate of Sliding Window

Test Certificate of Sliding Window

ECO - 500 SLIDING

13

c. Structural positive wind load - serviceability test

PROJECT NAME:		SEVEN TIDES, IBN BATTUTA COMPLEX	
STRUCTURAL WIND LOAD - SERVICEABILITY			
AMBIENT CONDITIONS		Monday, 30 April 2007 11:30:00 AM	
Air Temperature	39 °C	Relative Humidity	15 %
Barometric Pressure	10.15 mb	Update Links	
SPECIMEN TEST CRITERIA			
Design Wind Pressure	1211 Pa	Chamber Pressure	1211 Pa
Mullion Length to be tested	1.4 m	Actual Mullion Deflection	1 mm
Transom Length to be tested	1.3 m	Pass	
Max. Allowable Deformation-Mullion	8 mm	Chamber Pressure	1211 Pa
Max. Allowable Deformation-Transom	7 mm	Actual Transom Deflection	0 mm
Data recorded @ 11:40:20 AM			
LIVE READINGS			
Chamber Pressure	1211 Pa	Chamber Pressure	1211 Pa
Top Center Member LDT 1	4.3 mm	Actual Mullion Deflection	1 mm
Middle Center Member LDT 2	4.6 mm	Pass	
Bottom Center Member LDT 3	3.1 mm	Chamber Pressure	1211 Pa
Top Right Member LDT 4	3.8 mm	Actual Transom Deflection	0 mm
Middle Right Member LDT 5	3.8 mm	Pass	
Bottom Right Member LDT 6	3.1 mm	RESIDUAL	LDT 1
Glass LDT 7	0.0 mm		LDT 2
LDT 8	0.0 mm		LDT 3
			LDT 4
			LDT 5
			LDT 6

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

ECO - 500 SLIDING

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d. Structural negative wind load - serviceability test

PROJECT NAME:		SEVEN TIDES, IBN BATTUTA COMPLEX	
STRUCTURAL WIND LOAD - SERVICEABILITY		AMBIENT CONDITIONS	
		Air Temperature 39 °C	Barometric Pressure 10.15 mb
		Relative Humidity 15 %	
		Reset Date Monday, 30 April 2007	
		11:45:00 AM	
		SPECIMEN TEST CRITERIA	
		Update Links	
		Design Wind Pressure 1211 Pa	
		Mullion Length to be tested 1.4 m	
		Transom Length to be tested 1.3 m	
		Max. Allowable Deformation-Mullion 8 mm	
		Max. Allowable Deformation-Transom 7 mm	
TESTING ENGINEER		Clark Facun	
Chamber Connection		C- PT I ▶	
NEGATIVE WIND LOAD			
LIVE READINGS		CHAMBER PRESSURE	
Chamber Pressure 1211 Pa		Actual Mullion Deflection 1 mm	
Top Center Member LDT 1 3.8 mm		Design WL Pressure 1211 Pa	
Middle Center Member LDT 2 4.8 mm		Actual Mullion Def. 1 mm	
Bottom Center Member LDT 3 3.1 mm		Pass	
Top Right Member LDT 4 3.1 mm		Chamber Pressure 1211 Pa	
Middle Right Member LDT 5 3.8 mm		Actual Transom Deflection 1 mm	
Bottom Right Member LDT 6 3.1 mm		Design WL Pressure 1211 Pa	
Glass LDT 7 0.0 mm		Actual Transom Def 1 mm	
LDT 8 0.0 mm		Pass	
RESIDUAL		LDT 1 LDT 2 LDT 3 LDT 4 LDT 5 LDT 6	
Data recorded @ 12:07:18 PM			

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

Test Certificate of Sliding Window

Test Certificate of Sliding Window

ECO - 500 SLIDING

15

e. Post Structural - Static water penetration test

PROJECT NAME:		
SEVEN TIDES, IBN BATTUTA COMPLEX		
POST STRUCTURAL - STATIC WATER PENETRATION TEST to ASTM E 331		
Reset Date <input type="text" value="Monday, 30 April 2007 12:10:00 PM"/>		
AMBIENT CONDITIONS		
Air Temperature	39 °C	
Wind Speed	m/s	
TESTING ENGINEER		
Clark Facun	<input type="button" value="▼"/>	
Chamber Connection	<input type="button" value="B- PT L2"/>	
SPECIMEN TEST CRITERIA		
Width	1.3 m	
Height	1.4 m	
rows of Nozzles	3	
Test Pressure	240 Pa	
<input type="button" value="Update Links"/>		
The spray rack will consist of		
Start/reset timer <input type="text" value="12:20:00 PM"/>		
Calculated finishing time <input type="text" value="12:35:00 PM"/>		
Actual when timer stopped <input type="text" value="12:40:00 PM"/>		
Conclusion <input type="button" value="Pass"/>		
Signature _____		
READINGS		
Hours	Minutes	Seconds
<input type="button" value="0"/>	<input type="button" value="15"/>	<input type="button" value="0"/>
Timer		
Chamber Pressure		
240		
<input type="button" value="Zero"/>		<input type="button" value="Start"/>
		<input type="button" value="Stop"/>

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

ECO - 500 SLIDING

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f. Post Structural - Static water penetration test

PROJECT NAME:																						
POST STRUCTURAL - STATIC WATER PENETRATION TEST to ASTM E 331																						
SEVEN TIDES, IBN BATTUTA COMPLEX																						
Reset Date <u>Monday, 30 April 2007</u> <u>3:00 PM</u>																						
AMBIENT CONDITIONS																						
Air Temperature	<u>38</u> °C																					
Wind Speed	<u>m/s</u>																					
TESTING ENGINEER																						
Clark Facun	<input type="button" value="▼"/>																					
Chamber Connection	<input type="button" value="B- PT L2"/>																					
SPECIMEN TEST CRITERIA																						
Width	<u>1.3</u> m																					
The spray rack will consist of	<u>3</u> rows of																					
Test Pressure	<u>240</u> Pa																					
<input type="button" value="Update Links"/>																						
READINGS																						
<table border="1"> <thead> <tr> <th>Hours</th> <th>Minutes</th> <th>Seconds</th> </tr> </thead> <tbody> <tr> <td><u>0</u></td> <td><u>15</u></td> <td><u>0</u></td> </tr> <tr> <td colspan="3"> Timer </td> </tr> <tr> <td colspan="3"> Chamber Pressure </td> </tr> <tr> <td colspan="3">240</td> </tr> <tr> <td colspan="2"> <input type="button" value="Start"/> </td> <td><input type="button" value="Stop"/></td> </tr> <tr> <td colspan="2"> <input type="button" value="Zero"/> </td> <td></td> </tr> </tbody> </table>		Hours	Minutes	Seconds	<u>0</u>	<u>15</u>	<u>0</u>	Timer			Chamber Pressure			240			<input type="button" value="Start"/>		<input type="button" value="Stop"/>	<input type="button" value="Zero"/>		
Hours	Minutes	Seconds																				
<u>0</u>	<u>15</u>	<u>0</u>																				
Timer																						
Chamber Pressure																						
240																						
<input type="button" value="Start"/>		<input type="button" value="Stop"/>																				
<input type="button" value="Zero"/>																						
Start/reset timer <u>3:00 PM</u>																						
Calculated finishing time <u>3:05:00 PM</u>																						
Actual when timer stopped <u>3:07:00 PM</u>																						
Conclusion <input checked="" type="button" value="Pass"/>																						
Signature _____																						

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

Test Certificate of Sliding Window

ECO - 500 SLIDING

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Test Certificate of Sliding Window

g. Structural positive wind load @ 1.5 times design wind load

PROJECT NAME:		SEVEN TIDES, IBN BATTUTA COMPLEX	
STRUCTURAL WIND LOAD - SAFETY		Reset Date Monday, 30 April 2007 4:10 PM	
AMBIENT CONDITIONS		Relative Humidity 19 %	
Air Temperature 37 °C	Barometric Pressure 10.06 mb		
TESTING ENGINEER		SPECIMEN TEST CRITERIA	
Clark Facun		Update Links	
Chamber Connection C- PT 1 ▾		Design Wind Pressure 1817 Pa	
		Mullion Length to be tested 1.4 m	Actual Mullion Deflection 2 mm Pass
		Transom Length to be tested 1.3 m	
		Max. Allowable Deformation-Mullion 3 mm	Design WL Pressure 1817 Pa
		Max. Allowable Deformation-Transom 3 mm	Actual Mullion Def 2 mm Pass
POSITIVE WIND LOAD			
LIVE READINGS		Chamber Pressure 1817 Pa	
Top Center Member LDT 1	5.6 mm	Chamber Pressure 1817 Pa	1817 Pa
Middle Center Member LDT 2	6.4 mm	Actual Mullion Deflection 2 mm	2 mm Pass
Bottom Center Member LDT 3	4.0 mm		
Top Right Member LDT 4	4.3 mm		
Middle Right Member LDT 5	5.1 mm		
Bottom Right Member LDT 6	4.6 mm		
Glass LDT 7	0.0 mm		
LDT 8	0.0 mm		
RESIDUAL		LDT 1 LDT 2 LDT 3 LDT 4 LDT 5 LDT 6	
		0.38 0.25 0.25 0.25 0.51 0.64	
Data recorded @ 4:18 PM			

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

ECO - 500 SLIDING

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h. Structural negative wind load @ 1.5 times design wind load

PROJECT NAME:		SEVEN TIDES, IBN BATTUTA COMPLEX				
STRUCTURAL WIND LOAD - SAFETY						
AMBIENT CONDITIONS						
Air Temperature	37 °C	Barometric Pressure	10.06 mb			
TESTING ENGINEER		SPECIMEN TEST CRITERIA				
Clark Facun	C- PT 1	Design Wind Pressure	1817 Pa			
Chamber Connection		Mullion Length to be tested	1.4 m			
		Transom Length to be tested	1.3 m			
		Max. Allowable Deformation-Mullion	3 mm			
		Max. Allowable Deformation-Transom	3 mm			
<input type="button" value="Reset Date"/> Monday, 30 April 2007 4:25:00 PM <input type="button" value="Update Links"/>						
LIVE READINGS		NEGATIVE WIND LOAD				
Chamber Pressure	1817 Pa	Chamber Pressure	1817 Pa			
Top Center Member LDT 1	5.6 mm	Actual Mullion Deflection	2 mm			
Middle Center Member LDT 2	6.6 mm		Pass			
Bottom Center Member LDT 3	4.3 mm					
Top Right Member LDT 4	3.3 mm	Chamber Pressure	1817 Pa			
Middle Right Member LDT 5	4.8 mm	Actual Transom Deflection	1 mm			
Bottom Right Member LDT 6	4.1 mm		Pass			
Glass LDT 7	0.0 mm					
LDT 8	0.0 mm	Design WL Pressure	1817 Pa			
		Actual Mullion Def.	2 mm			
			Pass			
RESIDUAL	LDT 1 0.25	LDT 2 0.51	LDT 3 0.25	LDT 4 0.25	LDT 5 0.51	LDT 6 0.38
		Data recorded @	4:38 PM			

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

Test Certificate of Sliding Window

Test Certificate of Sliding Window

ECO - 500 SLIDING

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i. Post Structural - Air infiltration test

PROJECT NAME: POST STRUCTURAL - AIR INFILTRATION TEST ASTM E 283		SEVEN TIDES, IBN BATTUTA COMPLEX	
		Tuesday, May 15, 2007 2:30:12 PM	
		Reset Date	
AMBIENT CONDITIONS			
Air Temperature	41 °C	Barometric Pressure	10.02 mb
Wind Speed	m/s	Wind Direction	Deg
TESTING ENGINEER		SPECIMEN TEST CRITERIA	
Clark Facun		Width	1.3 m
		Height	1.4 m
		Test Pressure	75 Pa
Inlet Nozzle Size	56 mm	Area	1.82 m ²
Nozzle Connection	A- PT L1	Length of opening joint	0.0 m
Chamber Connection	B- PT L2	Permitted Leakage area	5.00 m ³ /hr/m ²
		Permitted Leakage(Meter opening joint)	0.0 m ³ /hr/m
		Total permitted Leakage	9.1 m ³ /hr
READINGS		WITHOUT POLYETHYLENE	
Chamber Pressure	75 Pa	Chamber Pressure	75 Pa
Nozzle Pressure	11 Pa	Nozzle Pressure	14 Pa
Differential Pressure	61 Pa	Differential Pressure	0 Pa
Flow	83 m ³ /hr	Flow	0 m ³ /hr
Nozzle Flow	35.3 m ³ /hr	Nozzle Flow	39.8 m ³ /hr
Data Recorded at	2:45 PM	Data Recorded at	2:53 PM
SUMMARY RESULTS			
Permitted Leakage	9 m ³ /hr	Specimen Leakage	4.54 m ³ /hr
		Conclusion	Pass
		Signature	

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

ECO - 500 SLIDING

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j. Post Structural - Air infiltration test

PROJECT NAME: POST STRUCTURAL - AIR INFILTRATION TEST ASTM E 283		SEVEN TIDES, IBN BATTUTA COMPLEX	
		Tuesday, May 15, 2007 2:30:12 PM	
		Reset Date	
AMBIENT CONDITIONS			
Air Temperature	41 °C	Barometric Pressure	10.02 mb
Wind Speed	m/s	Wind Direction	Deg
TESTING ENGINEER		SPECIMEN TEST CRITERIA	
Clark Facun		Width	1.3 m
		Height	1.4 m
		Test Pressure	100 Pa
Inlet Nozzle Size	56 mm	Area	1.82 m ²
Nozzle Connection	A- PT L1	Length of opening joint	0.0 m
Chamber Connection	B- PT L2	Permitted Leakage area	5.00 m ³ /hr/m ²
		Permitted Leakage(Meter opening joint)	0.0 m ³ /hr/m
		Total permitted Leakage	9.1 m ³ /hr
READINGS	WITHOUT POLYETHYLENE		
Chamber Pressure	100 Pa	Chamber Pressure	100 Pa
Nozzle Pressure	11 Pa	Nozzle Pressure	17 Pa
Differential Pressure	0 Pa	Differential Pressure	0 Pa
Flow	0 m ³ /hr	Flow	0 m ³ /hr
Nozzle Flow	35.3 m ³ /hr	Nozzle Flow	43.9 m ³ /hr
Data Recorded at	2:45 PM	Data Recorded at	2:53 PM
SUMMARY RESULTS		Signature	
Permitted Leakage	9 m ³ /hr	Specimen Leakage	8.61 m ³ /hr
Conclusion		Pass	

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

Test Certificate of Sliding Window

ECO - 500 SLIDING

THERMAL TRANSMITTANCE ACCORDING TO EN ISO 10077-2

Theory

The thermal transmittance of a frame according to EN ISO 10077-2:

$$U_f = \frac{L_{2D} - U_p * l_p}{l_f} \quad \text{and} \quad L_{2D} = \frac{q_{l,tot}}{\Delta \theta}$$

with:

U_f : thermal transmittance of the window frame [W/m²K]

U_p : thermal transmittance of the flanking panel [W/m²K]

l_p : projected width of the flanking panel [m]

l_f : projected width of the window frame [m]

L_{2D} : two-dimensional coupling coefficient [W/mK]

$q_{l,tot}$: total heat flow through the window frame and the flanking panel [W/m]

$\Delta\theta$: temperature difference between inside (θ_i) and outside (θ_e) [K]

POWERED BY



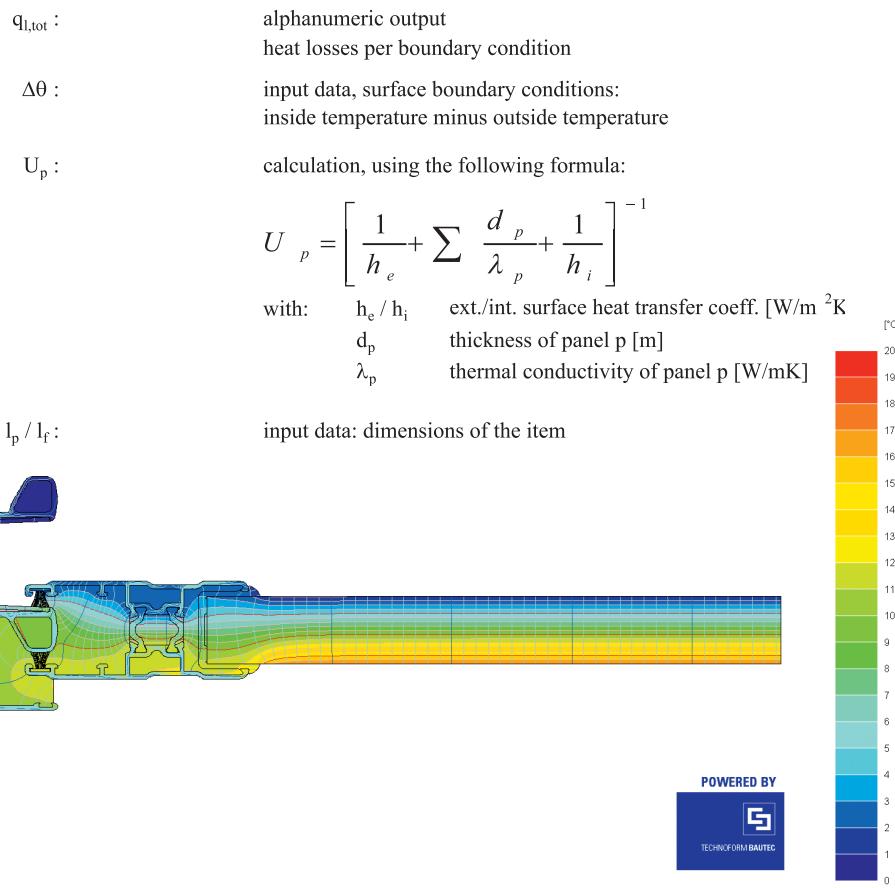
TECHNOFORM BAUTEC

Calculation

Item:

elite sliding bisco re

input data:	$q_{l,tot} = 16.738$ W/m	$R_{se} = 0.04$ m ² K/W
	$\theta_e = 0.0$ °C	$R_{si} = 0.13$ m ² K/W
	$\theta_i = 20.0$ °C	
	$d_p = 0.0241$ m	
	$\lambda_p = 0.035$ W/m*K	
	$U_p = 1.165$ W/m ² K	
	$l_p = 0.190$ m	
		calculation results:
		$L_{2D} = 0.84$ W/mK
	$l_f = 0.1163$ m	$U_f = 5.29$ W/m ² K



ECO - 500 SLIDING

THERMAL TRANSMITTANCE ACCORDING TO EN ISO 10077-2

Theory

The thermal transmittance of a frame according to EN ISO 10077-2:

$$U_f = \frac{L_{2D} - U_p * l_p}{l_f} \quad \text{and} \quad L_{2D} = \frac{q_{l,tot}}{\Delta\theta}$$

with:

U_f : thermal transmittance of the window frame [W/m²K]

U_p : thermal transmittance of the flanking panel [W/m²K]

l_p : projected width of the flanking panel [m]

l_f : projected width of the window frame [m]

L_{2D} : two-dimensional coupling coefficient [W/mK]

$q_{l,tot}$: total heat flow through the window frame and the flanking panel [W/m]

$\Delta\theta$: temperature difference between inside (θ_i) and outside (θ_e) [K]

POWERED BY



TECHNOFORM BAUTEC

Calculation

Item:

elite sliding central bisco re

input data:	$q_{l,tot} = 17.246$ W/m	$R_{se} = 0.04$ m ² K/W
	$\theta_e = 0.0$ °C	$R_{si} = 0.13$ m ² K/W
	$\theta_i = 20.0$ °C	
	$d_p = 0.0241$ m	
	$\lambda_p = 0.035$ W/m*K	
	$U_p = 1.165$ W/m ² K	
	$l_p = 0.380$ m	
		calculation results:
		$L_{2D} = 0.86$ W/mK
	$l_f = 0.0841$ m	$U_f = 4.99$ W/m ² K

$q_{l,tot}$:

alphanumeric output
heat losses per boundary condition

$\Delta\theta$:

input data, surface boundary conditions:
inside temperature minus outside temperature

U_p :

calculation, using the following formula:

$$U_p = \left[\frac{1}{h_e} + \sum \frac{d_p}{\lambda_p} + \frac{1}{h_i} \right]^{-1}$$

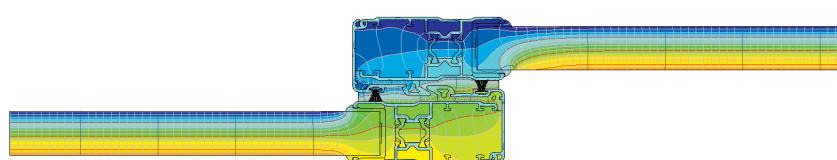
with: h_e / h_i ext./int. surface heat transfer coeff. [W/m²K]

d_p thickness of panel p [m]

λ_p thermal conductivity of panel p [W/mK]

l_p / l_f :

input data: dimensions of the item

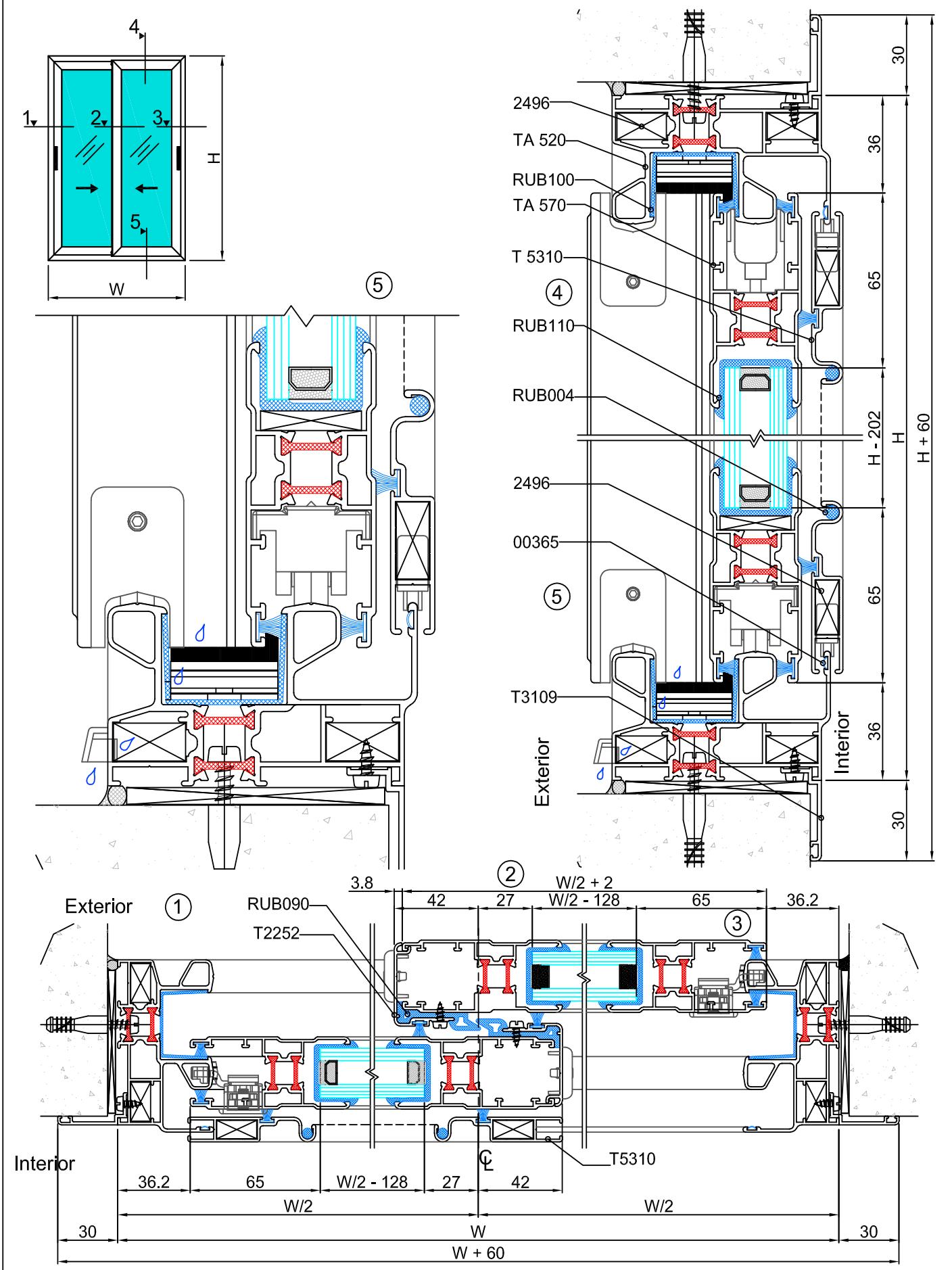


POWERED BY
 TECHNOFORM BAUTEC

Windows and Doors Elevation sectional details

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

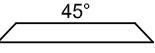
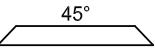
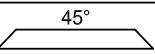
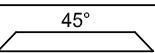
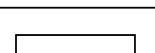
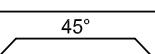
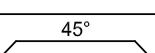
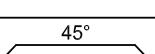
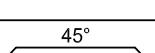
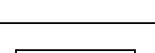
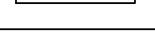
ECO · 500



THERMAL BREAK DOUBLE SLIDING WINDOW

ECO - 500

PROFILE CUTTING LIST

ITEM No.	DESCRIPTION & SECTION SHAPE	PROFILE No.	PROFILE CUTTING ANGLE	CUTTING SIZE	No. OF PIECES	REMARKS
1.		FRAME WIDTH	TA 520	 45°	W	02
2.		FRAME HEIGHT	TA 520	 45°	H	02
3.		SASH WIDTH	TA 570	 45°	W/2 + 2	04
4.		SASH HEIGHT	TA 570	 45°	H - 72.6	04
5.		INTER LOCK HEIGHT	T2252	 45°	H - 72.6	02
6.		FLY SCREEN WIDTH	T5310	 45°	W/2 + 2	02
7.		FLY SCREEN HEIGHT	T5310	 45°	H - 83	02
8.		ARCHITRAVE WIDTH	T 3109	 45°	W + 60	02
9.		ARCHITRAVE HEIGHT	T 3109	 45°	H + 60	02
10.		CORNER CLEAT FOR FRAME	2496	 45°	19.5	08
11.		CORNER CLEAT FOR FLY SCREEN	5278	 45°	8.5	04
12.		CORNER CLEAT FOR SASH	5576	 45°	2.5	16

ACCESSORIES LIST

E.P.D.M. GASKET LIST

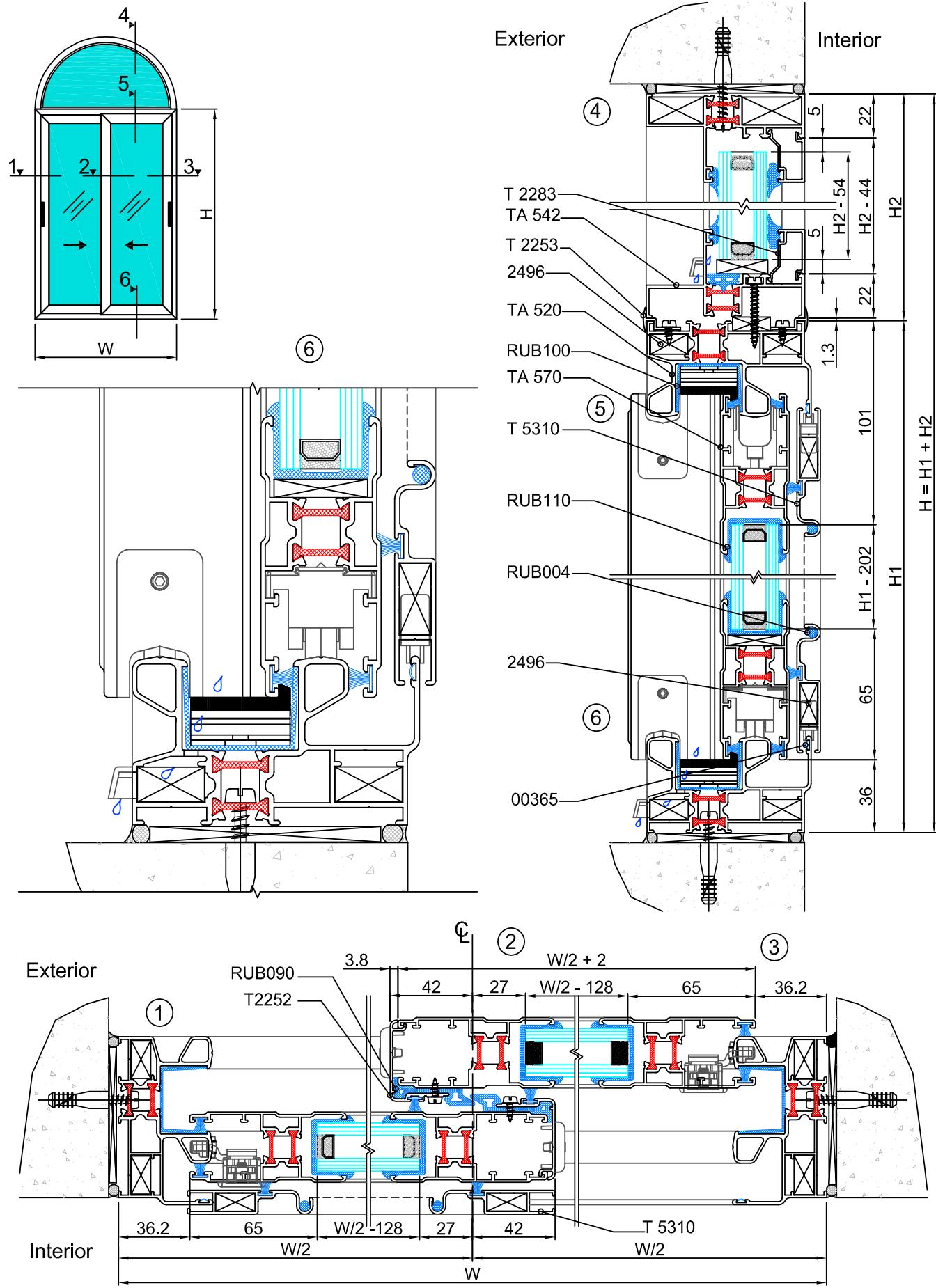
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1.	00365	ALIGNMENT CORNER	M. F	04	1.	RUB 110	24mm U GASKET	2W + 4H
2.	A1500	NYLON CORNER FOR SASH	M. F	08	2.	RUB 100	SLIDING FRAME GASKET	2W + 2H
3.	2314	DRAIN HOLE COVER	M. F	02	3.	RUB 090	INTER LOCK GASKET	2H
4.	03144	BUMP RUBBER	M. F	04	4.	RUB 004	FLY SCREEN GASKET	1W + 2H
5.	03143	DUST PLUG	M. F	02	5.	PB69-800-3P-HF	WEATHER PILE FOR SASH	4W + 6H
6.	03115	ROLLER	M. F	04	6.	PB69-800-4P	WEATHER PILE FOR FLY SCREEN	1W + 2H
7.	02983	HANDLE	P. C	02				
8.	03085	HANDLE KIT	M. F	02				

NOTE: SCREWS, FLY SCREEN ROLLER, ALUMINIUM MESH, SILICON & GLASS ARE NOT INCLUDED IN THE CUTTING LIST

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

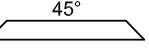
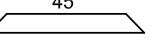
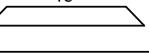
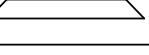
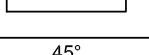
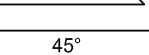
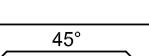
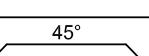
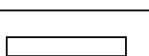
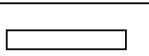
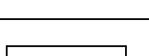
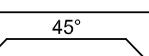
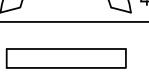
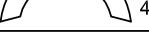
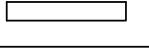
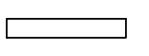
ECO - 500

Windows and Doors Elevation sectional details



THERMAL BREAK DOUBLE SLIDING WINDOW WITH TOP FIXLITE ECO - 500

PROFILE CUTTING LIST

ITEM No.	DESCRIPTION & SECTION SHAPE	PROFILE No.	PROFILE CUTTING ANGLE	CUTTING SIZE	No. OF PIECES	REMARKS
1.		FRAME WIDTH	TA 520		W	02
2.		FRAME HEIGHT	TA 520		H	02
3.		SASH WIDTH	TA 570		W/2 + 2	04
4.		SASH HEIGHT	TA 570		H - 72.6	04
5.		INTER LOCK HEIGHT	T2252		H - 72.6	02
6.		FLY SCREEN WIDTH	T5310		W/2 + 2	02
7.		FLY SCREEN HEIGHT	T5310		H - 83	02
8.		ARCHITRAVE WIDTH	T 3109		W + 60	02
9.		ARCHITRAVE HEIGHT	T 3109		H + 60	02
10.		CORNER CLEAT FOR FRAME	2496		19.5	08
11.		CORNER CLEAT FOR FLY SCREEN	5278		8.5	04
12.		CORNER CLEAT FOR SASH	5576		2.5	16
13.		FIXLITE FRAME WIDTH	TA 542		W	01
14.		(T4) ARCH FRAME	TA 542		(3.14 X D)/2	01
15.		GLASS BEAD FOR FIXLITE	T 2283		W - 44	01
16.		(T4) GLASS BEAD FOR FIXLITE	T 2283		(3.14 X D)/2	01
17.		ADOPTER	T 2253		W	02
18.		CORNER CLEAT FOR FIXLITE FRAME	2261		28	02
					27	02
						MILL FINISH

ACCESSORIES LIST

E.P.D.M. GASKET LIST

ITEM No.	ACCESSORY CODE No.	DESCRIPTION	FINISH	QTY	ITEM No.	GASKET CODE No.	DESCRIPTION	SINGLE LEAF
1.	00365	ALIGNMENT CORNER	M. F	04	1.	RUB 110	24mm U GASKET	2W + 4H
2.	A1500	NYLON CORNER FOR SASH	M. F	08	2.	RUB 100	SLIDING FRAME GASKET	2W + 2H
3.	2314	DRAIN HOLE COVER	M. F	04	3.	RUB 090	INTER LOCK GASKET	2H
4.	03144	BUMP RUBBER	M. F	04	4.	RUB 004	FLY SCREEN GASKET	1W + 2H
5.	03143	DUST PLUG	M. F	02	5.	RUB 010	THERMAL BARRIER GASKET	1W
6.	03115	ROLLER	M. F	04	6.	RUB 055	INTERNAL GLAZING GASKET	1W + 2H
7.	02983	HANDLE	P. C	02	7.	RUB 065	EXTERNAL GLAZING GASKET	1W + 2H
8.	03085	HANDLE KIT	M. F	02	8.	PB69-800-3P-HF	WEATHER PILE FOR SASH	4W + 6H
					9.	PB69-800-4P	WEATHER PILE FOR FLY SCREEN	1W + 2H

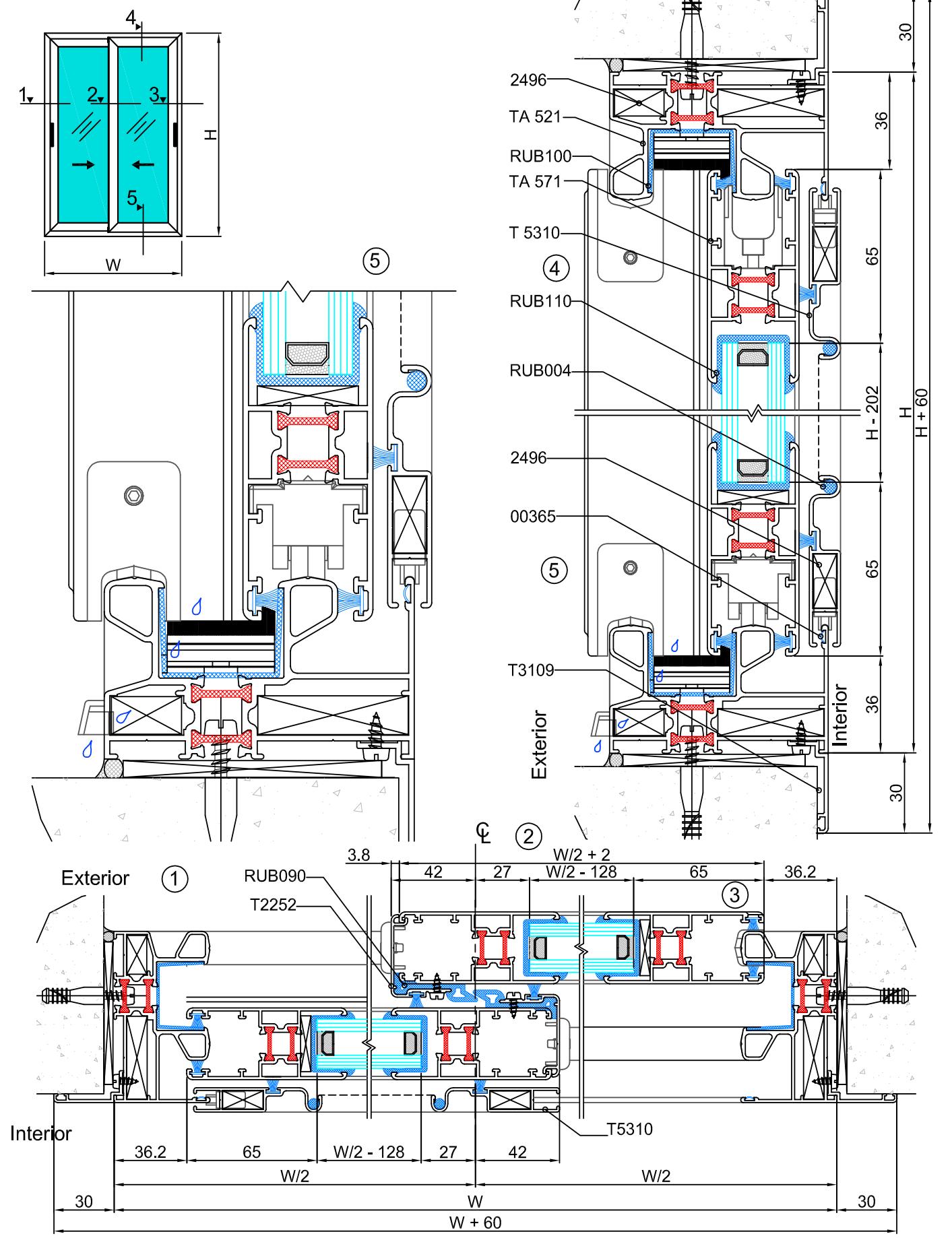
NOTE: SCREWS, FLY SCREEN ROLLER, ALUMINIUM MESH, SILICON & GLASS ARE NOT INCLUDED IN THE CUTTING LIST

Windows and Doors Elevation sectional details

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO · 500

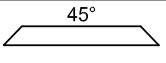
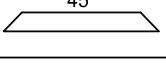
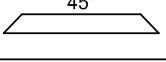
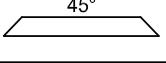
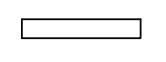
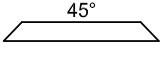
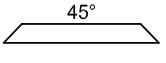
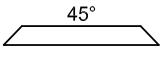
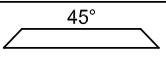
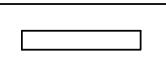
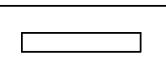
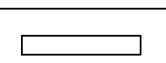
Straight Edge Frame and Sash



THERMAL BREAK DOUBLE SLIDING WINDOW STRAIGHT EDGE FRAME AND SASH

ECO - 500

PROFILE CUTTING LIST

ITEM No.	DESCRIPTION & SECTION SHAPE	PROFILE No.	PROFILE CUTTING ANGLE	CUTTING SIZE	No. OF PIECES	REMARKS
1.		FRAME WIDTH	TA 521		W	02
2.		FRAME HEIGHT	TA 521		H	02
3.		SASH WIDTH	TA 571		W/2 + 2	04
4.		SASH HEIGHT	TA 571		H - 72.6	04
5.		INTER LOCK HEIGHT	T2252		H - 72.6	02
6.		FLY SCREEN WIDTH	T5310		W/2 + 2	02
7.		FLY SCREEN HEIGHT	T5310		H - 83	02
8.		ARCHITRIVE WIDTH	T 3109		W + 60	02
9.		ARCHITRIVE HEIGHT	T 3109		H + 60	02
10.		CORNER CLEAT FOR FRAME	2496		19.5	08
11.		CORNER CLEAT FOR FLY SCREEN	5278		8.5	04
12.		CORNER CLEAT FOR SASH	5576		2.5	16

ACCESSORIES LIST

ITEM No.	ACCESSORY CODE No.	DESCRIPTION	FINISH	QTY	ITEM No.	GASKET CODE No.	DESCRIPTION	QTY
1.	00365	ALIGNMENT CORNER	M. F	04	1.	RUB 110	24mm U GASKET	2W + 4H
2.	A1500	NYLON CORNER FOR SASH	M. F	08	2.	RUB 100	SLIDING FRAME GASKET	2W + 2H
3.	2314	DRAIN HOLE COVER	M. F	02	3.	RUB 090	INTER LOCK GASKET	2H
4.	03144	BUMP RUBBER	M. F	04	4.	RUB 004	FLY SCREEN GASKET	1W + 2H
5.	03143	DUST PLUG	M. F	02	5.	PB69-800-3P-HF	WEATHER PILE FOR SASH	4W + 6H
6.	03115	ROLLER	M. F	04	6.	PB69-800-4P	WEATHER PILE FOR FLY SCREEN	1W + 2H
7.	02983	HANDLE	P. C	02				
8.	03094	HANDLE KIT	M. F	02				

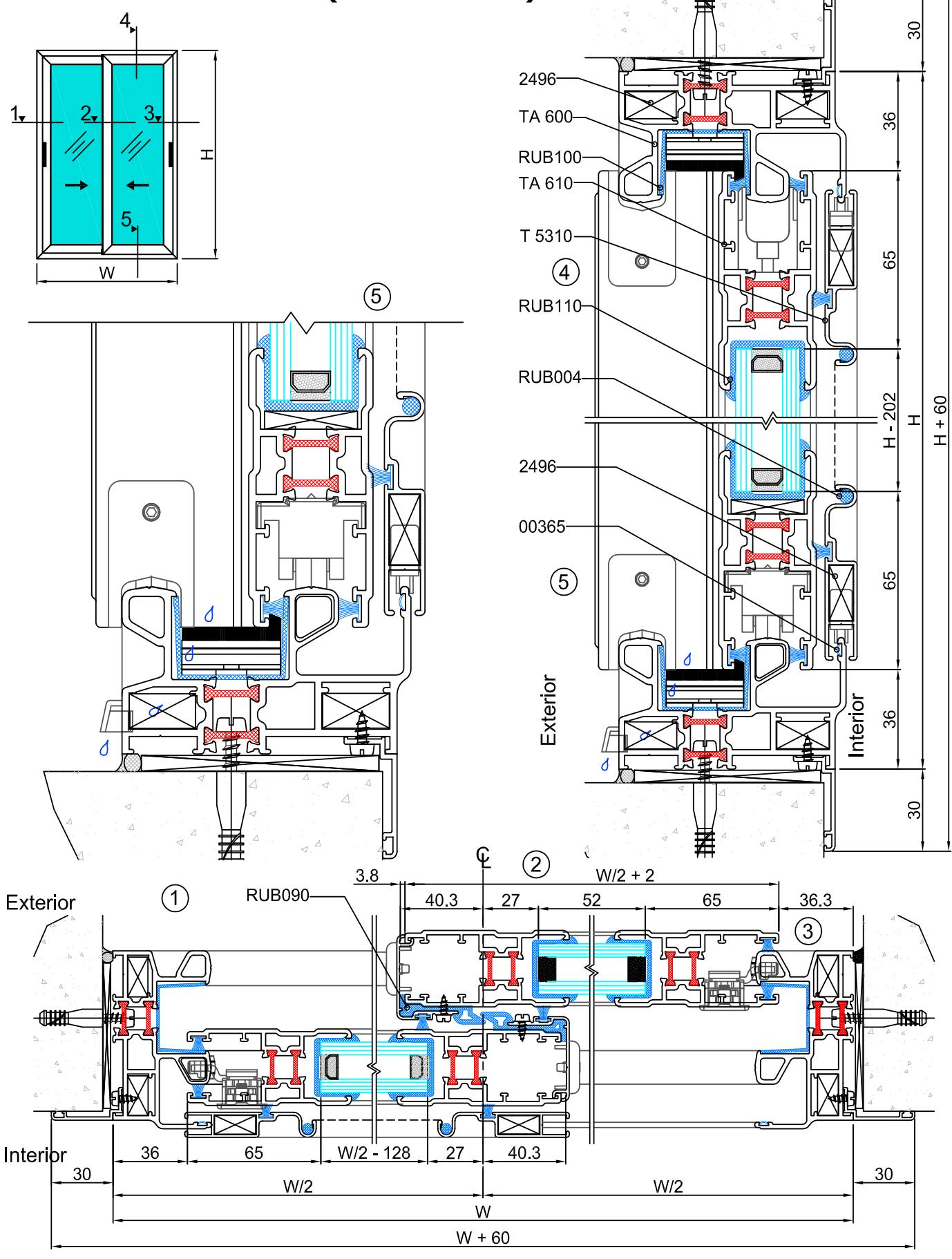
NOTE: SCREWS, FLY SCREEN ROLLER, ALUMINIUM MESH, SILICON & GLASS ARE NOT INCLUDED IN THE CUTTING LIST

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500

HEAVY DUTY PROFILES (2.1mm THICK)

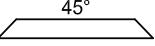
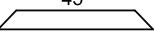
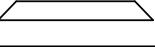
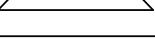
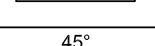
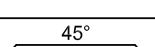
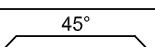
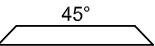
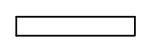
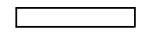
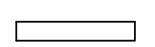
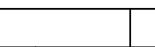
Windows and Doors Elevation sectional details



THERMAL BREAK DOUBLE SLIDING WINDOW HEAVY DUTY PROFILES (2.1mm THICK)

ECO - 500

PROFILE CUTTING LIST

ITEM No.	DESCRIPTION & SECTION SHAPE	PROFILE No.	PROFILE CUTTING ANGLE	CUTTING SIZE	No. OF PIECES	REMARKS
1.	 FRAME WIDTH	TA 600		W	02	
2.	 FRAME HEIGHT	TA 600		H	02	
3.	 SASH WIDTH	TA 610		W/2 + 2	04	W/2 + 2
4.	 SASH HEIGHT	TA 610		H - 72.6	04	H - 72.6
5.	 INTER LOCK HEIGHT	T2252		H - 72.6	02	H - 72.6
6.	 FLY SCREEN WIDTH	T5310		W/2 + 2	02	
7.	 FLY SCREEN HEIGHT	T5310		H - 83	02	
8.	 ARCHITRAVE WIDTH	T 3109		W + 60	02	
9.	 ARCHITRAVE HEIGHT	T 3109		H + 60	02	
10.	 CORNER CLEAT FOR FRAME	2496		19.5	08	
11.	 CORNER CLEAT FOR FLY SCREEN	5278		8.5	04	
12.	 CORNER CLEAT FOR SASH	5576		2.5	16	

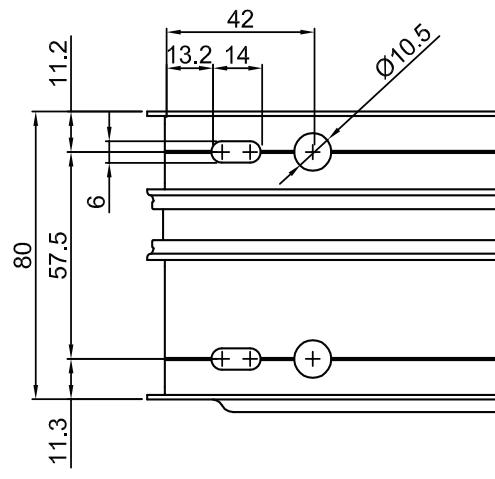
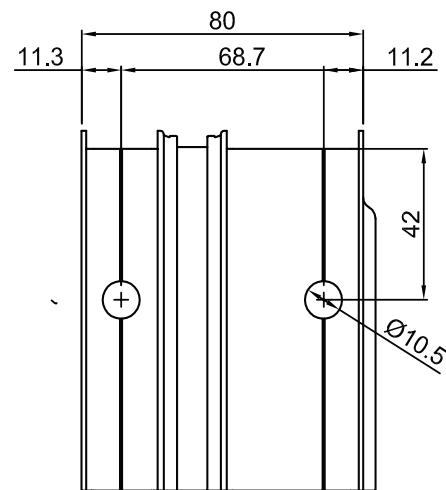
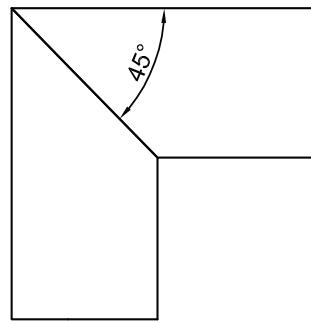
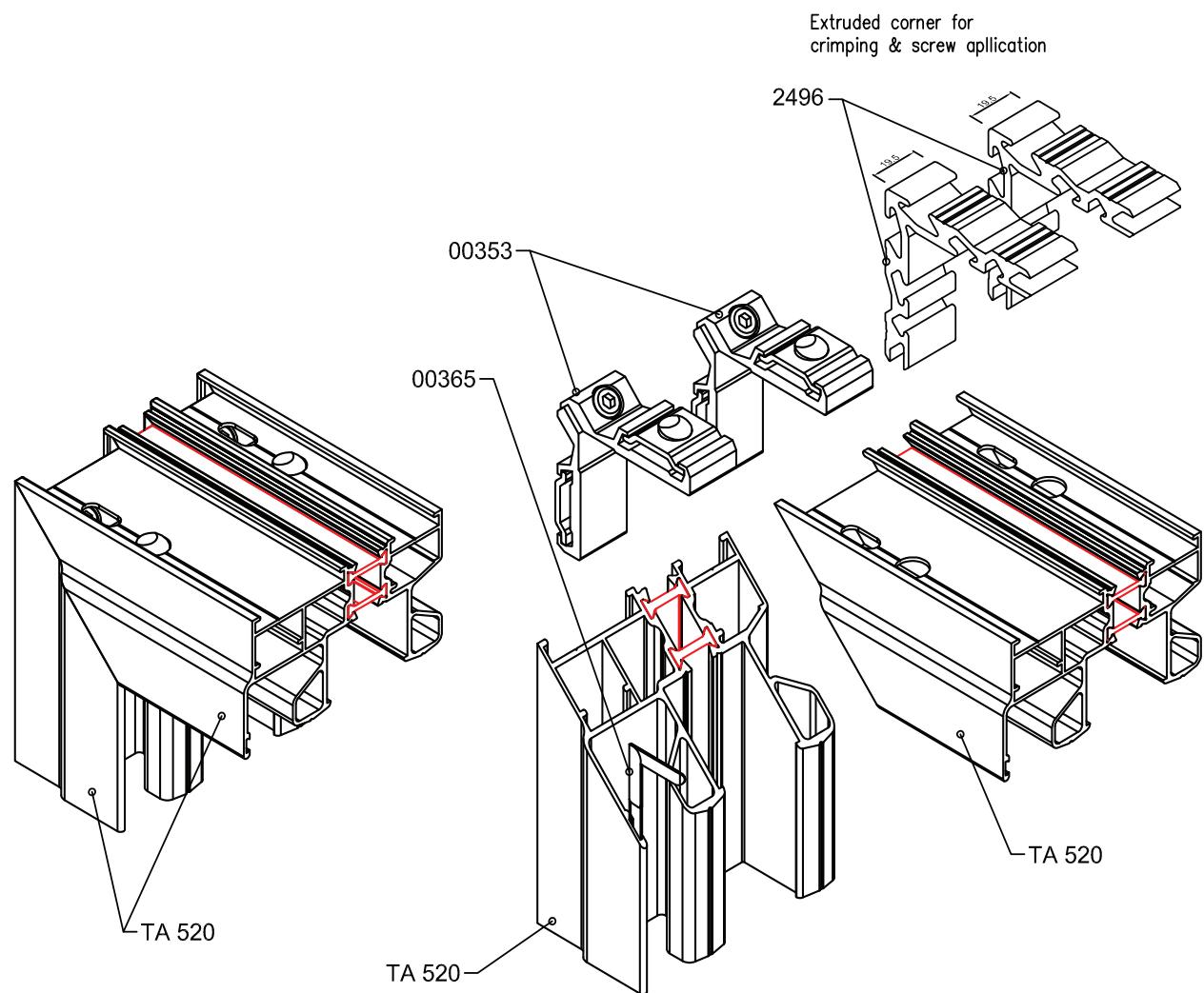
ACCESSORIES LIST

E.P.D.M. GASKET LIST

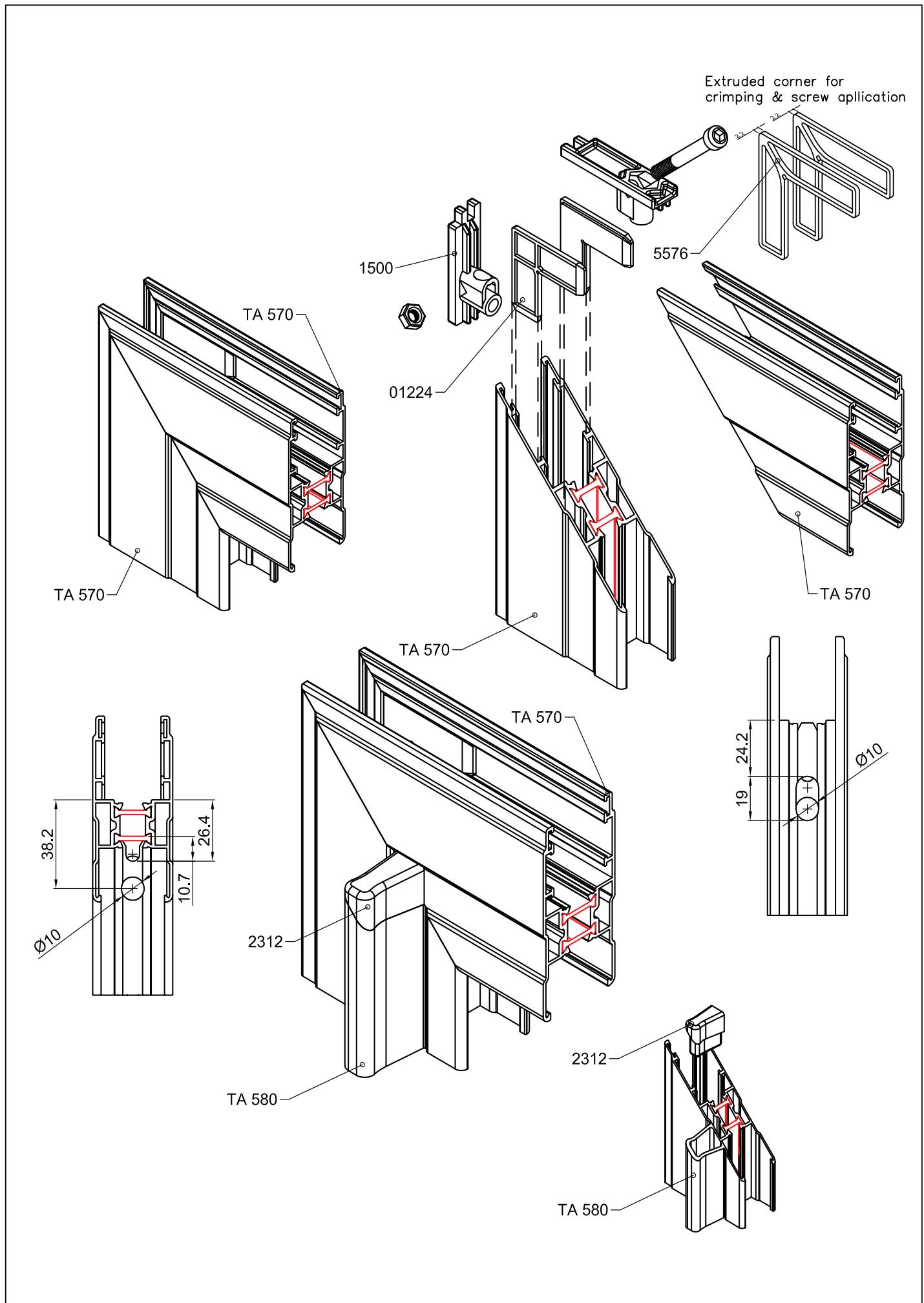
ITEM No.	ACCESSORY CODE No.	DESCRIPTION	FINISH	QTY	ITEM No.	GASKET CODE No.	DESCRIPTION	QTY
1.	00365	ALIGNMENT CORNER	M. F	04	1.	RUB 110	24mm U GASKET	2W + 4H
2.	A1500	NYLON CORNER FOR SASH	M. F	08	2.	RUB 100	SLIDING FRAME GASKET	2W + 2H
3.	2314	DRAIN HOLE COVER	M. F	02	3.	RUB 090	INTER LOCK GASKET	2H
4.	03144	BUMP RUBBER	M. F	04	4.	RUB 004	FLY SCREEN GASKET	1W + 2H
5.	03143	DUST PLUG	M. F	02	5.	PB69-800-3P-HF	WEATHER PILE FOR SASH	4W + 6H
6.	03115	ROLLER	M. F	04	6.	PB69-800-4P	WEATHER PILE FOR FLY SCREEN	1W + 2H
7.	02983	HANDLE	P. C	02				
8.	03085	HANDLE KIT	M. F	02				

NOTE: SCREWS, FLY SCREEN ROLLER, ALUMINIUM MESH, SILICON & GLASS ARE NOT INCLUDED IN THE CUTTING LIST

3D Assembly Drawing



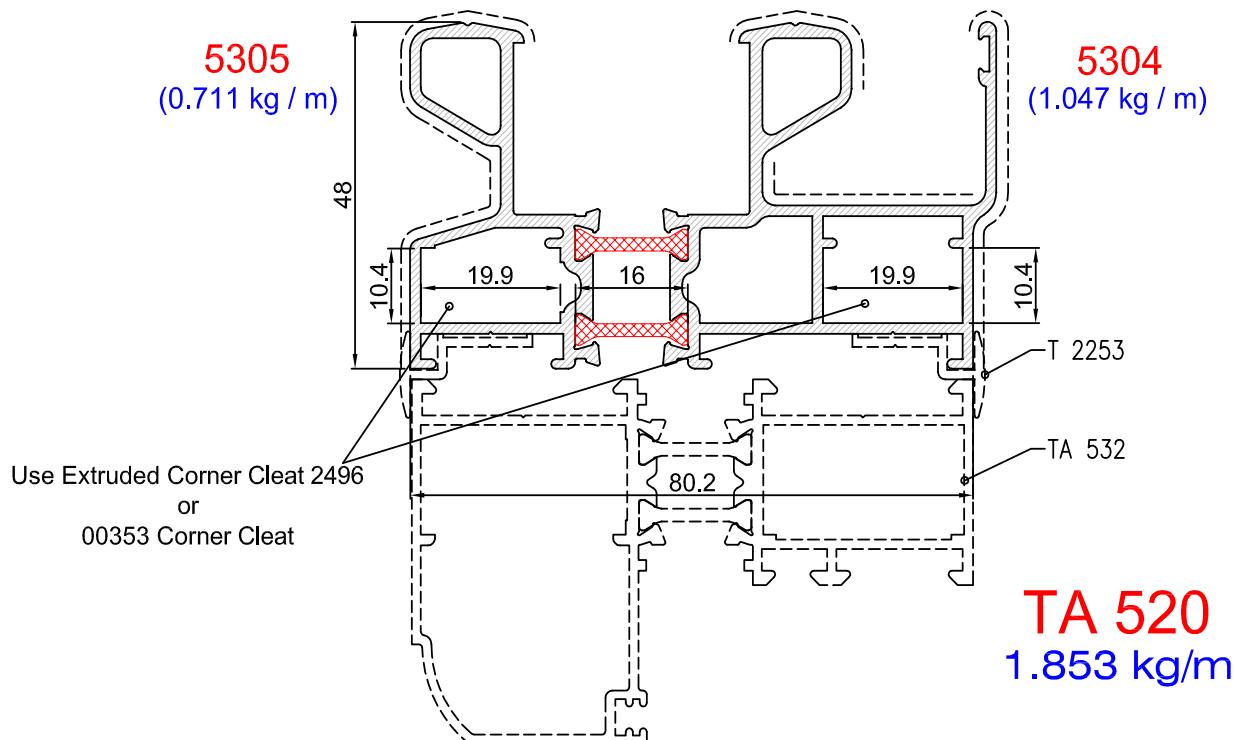
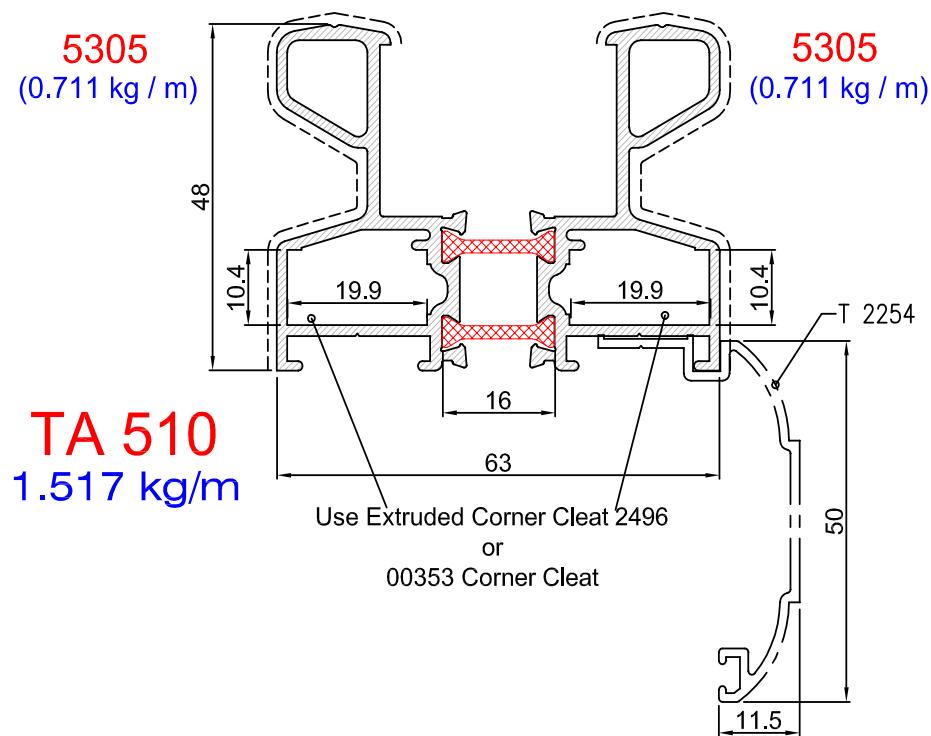
3D Assembly Drawing



SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

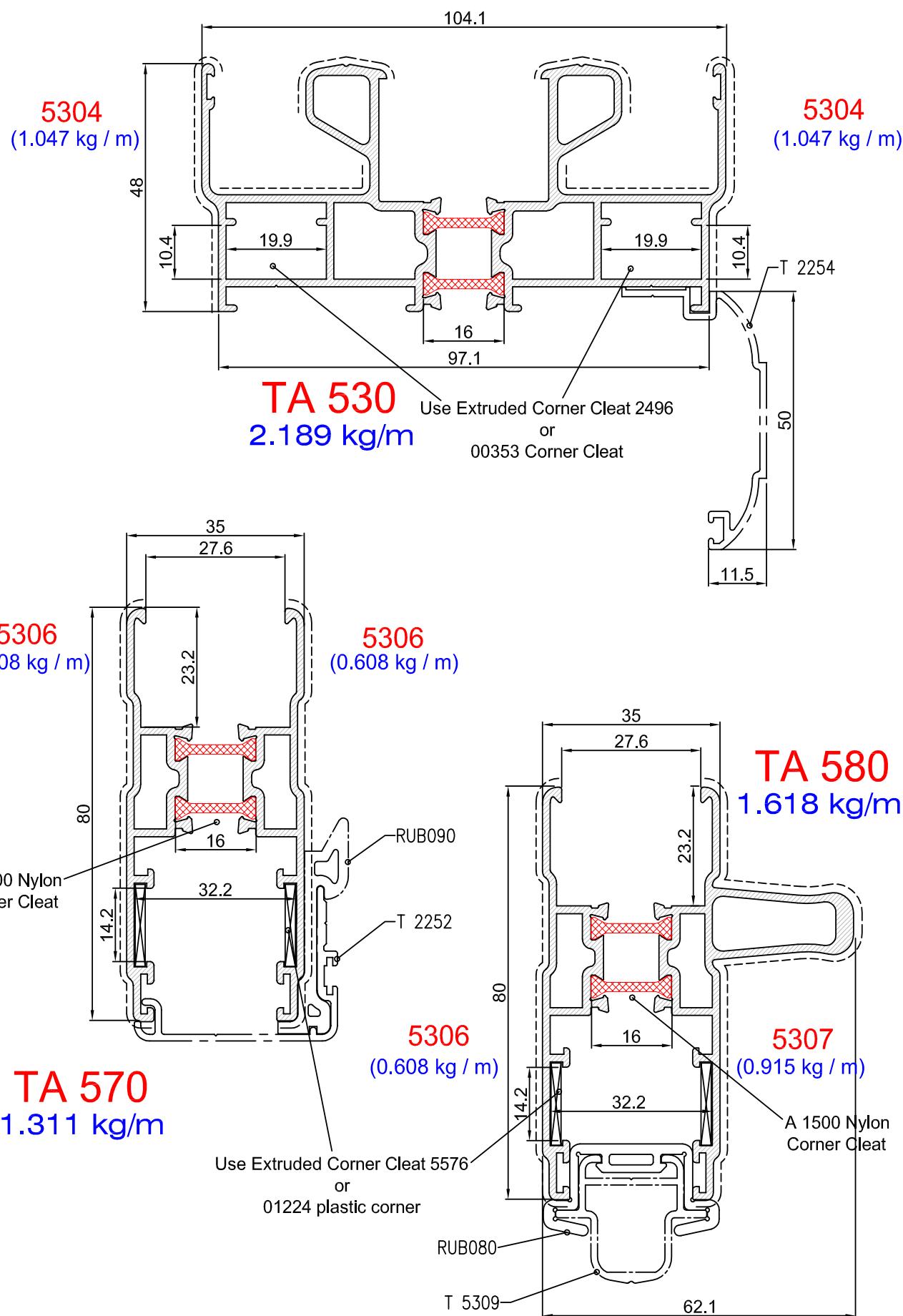
ECO - 500

Sections (Profiles) Drawings



SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

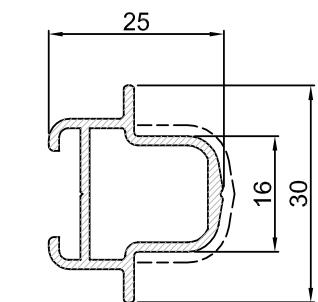
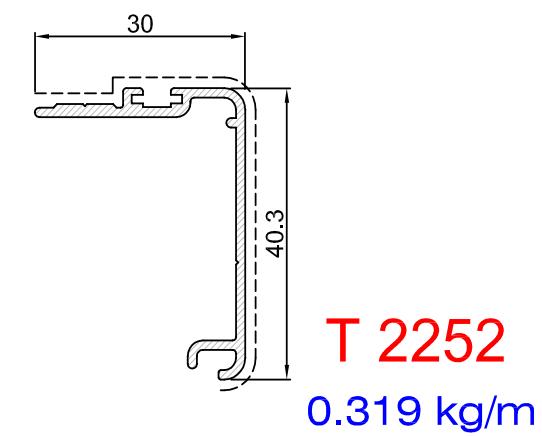
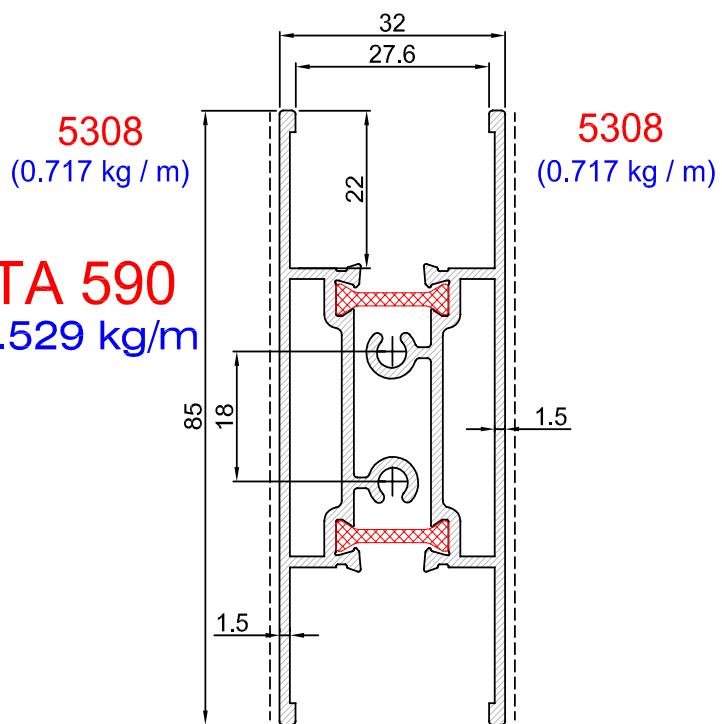
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SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

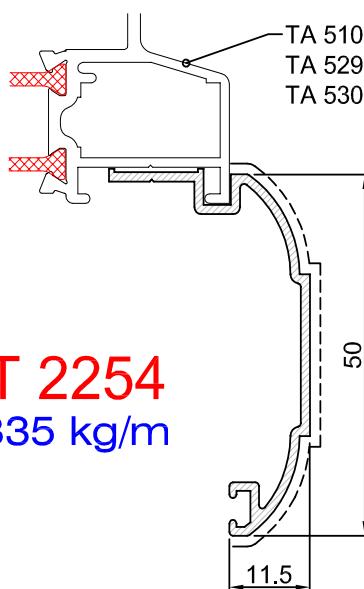
ECO - 500

Sections (Profiles) Drawings

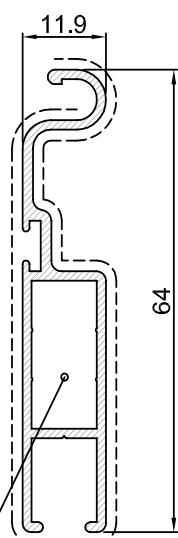


T 5309
0.351 kg/m

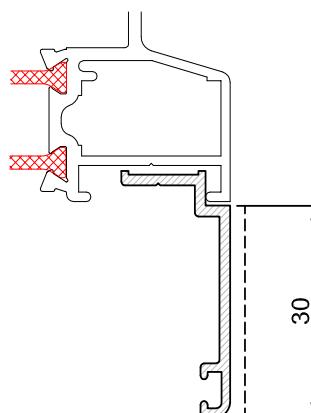
Use Extruded Corner Cleat 5278
or
0088 Corner cleat



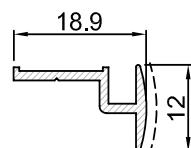
T 2254
0.335 kg/m



T 5310
0.502 kg/m



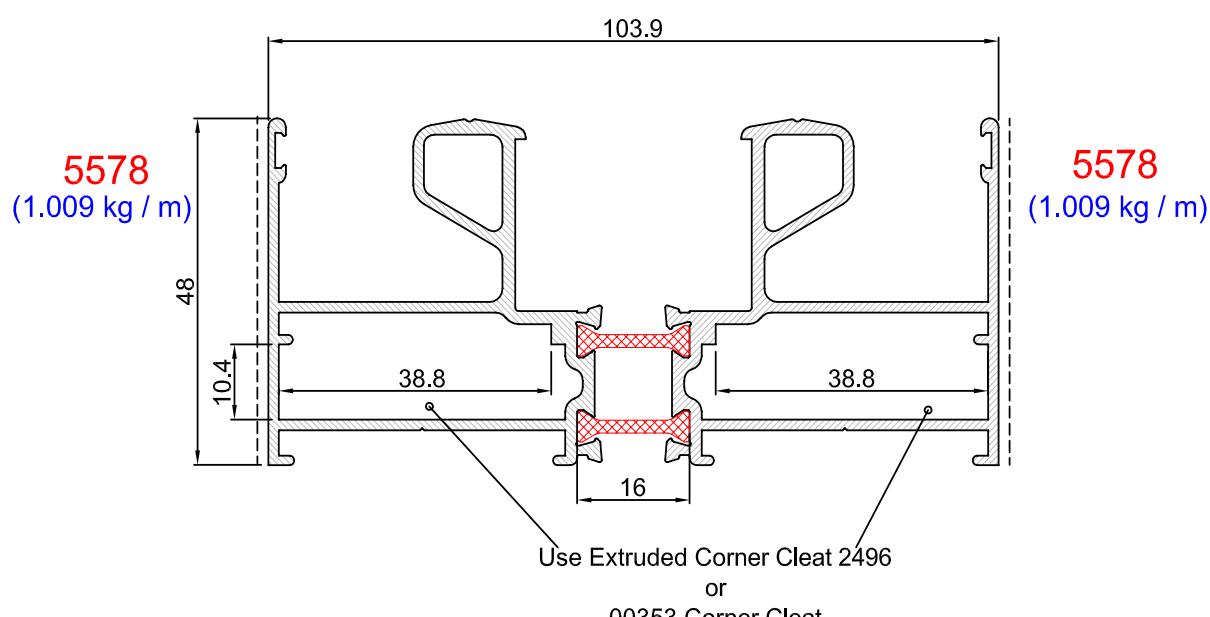
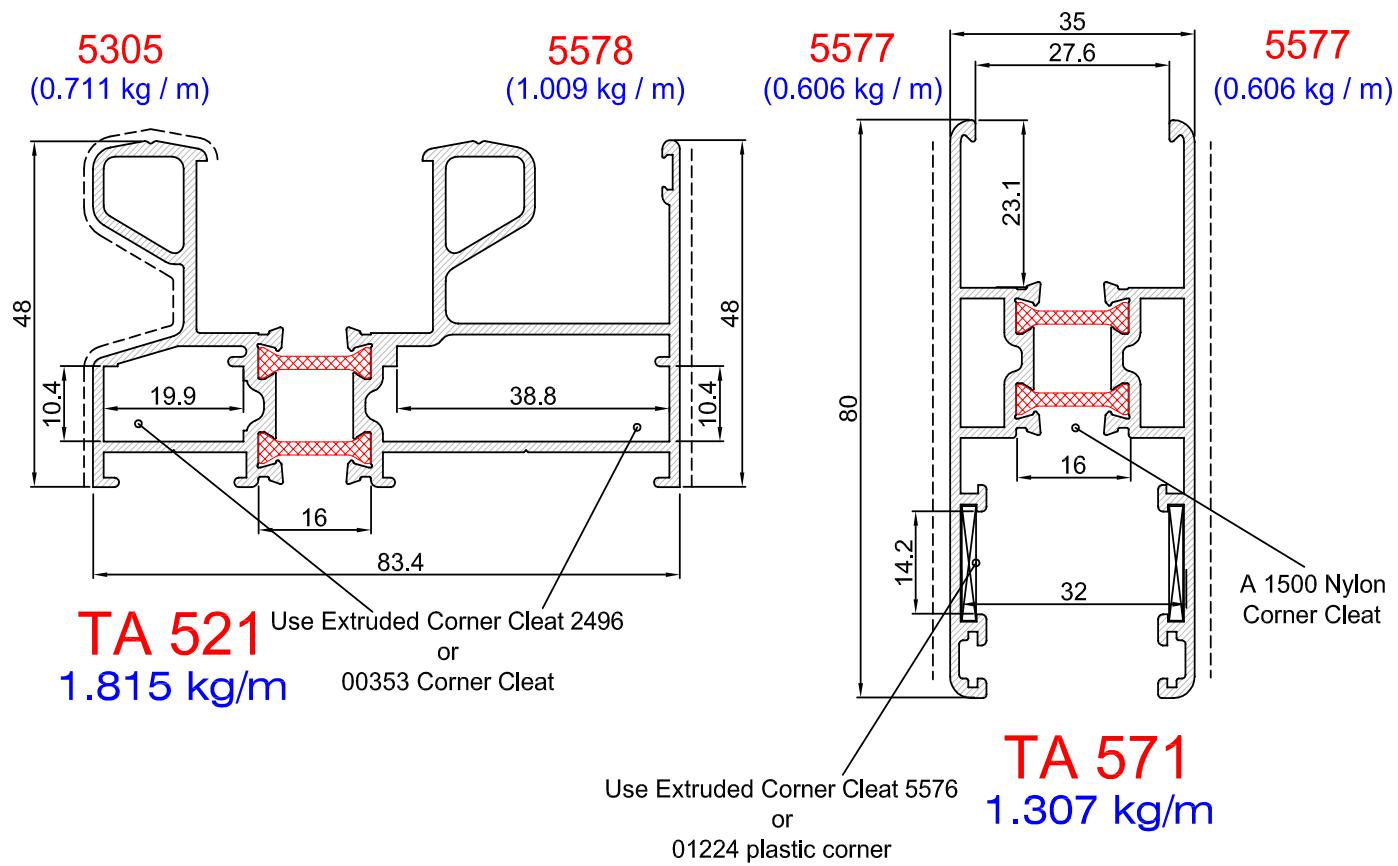
T 3109
0.214 kg/m



T 2253
0.116 kg/m

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500



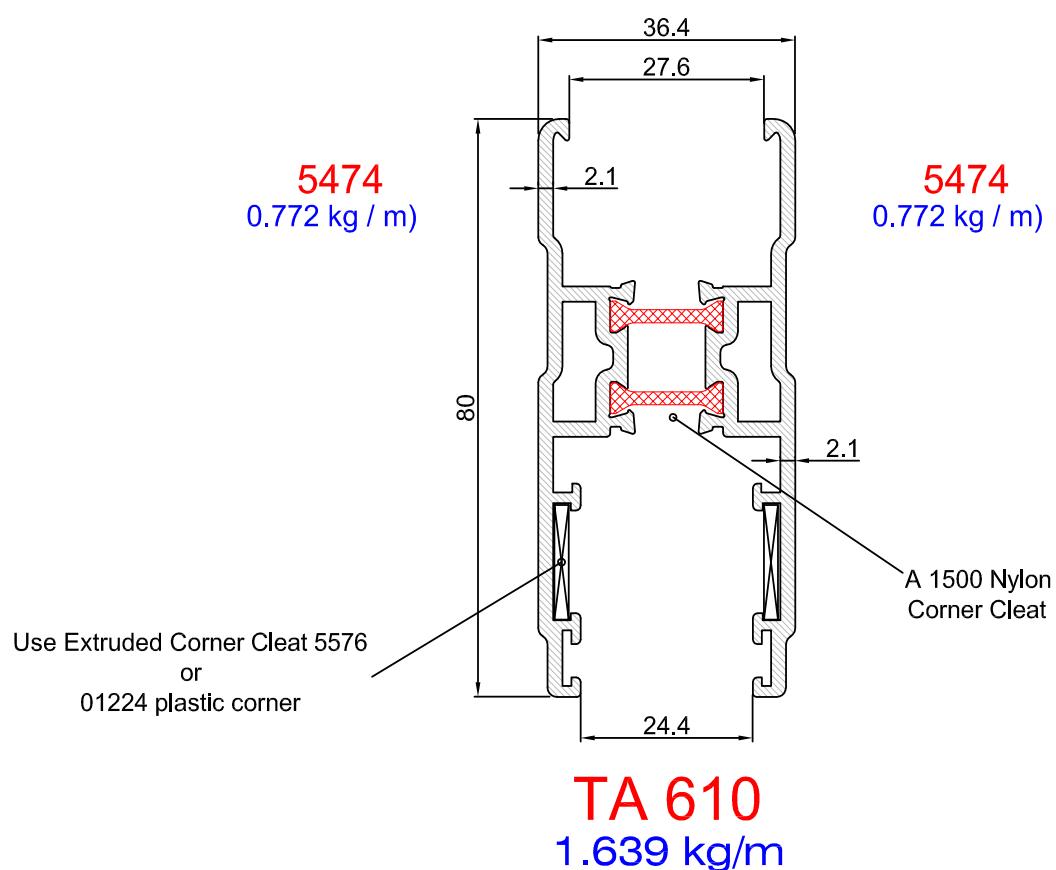
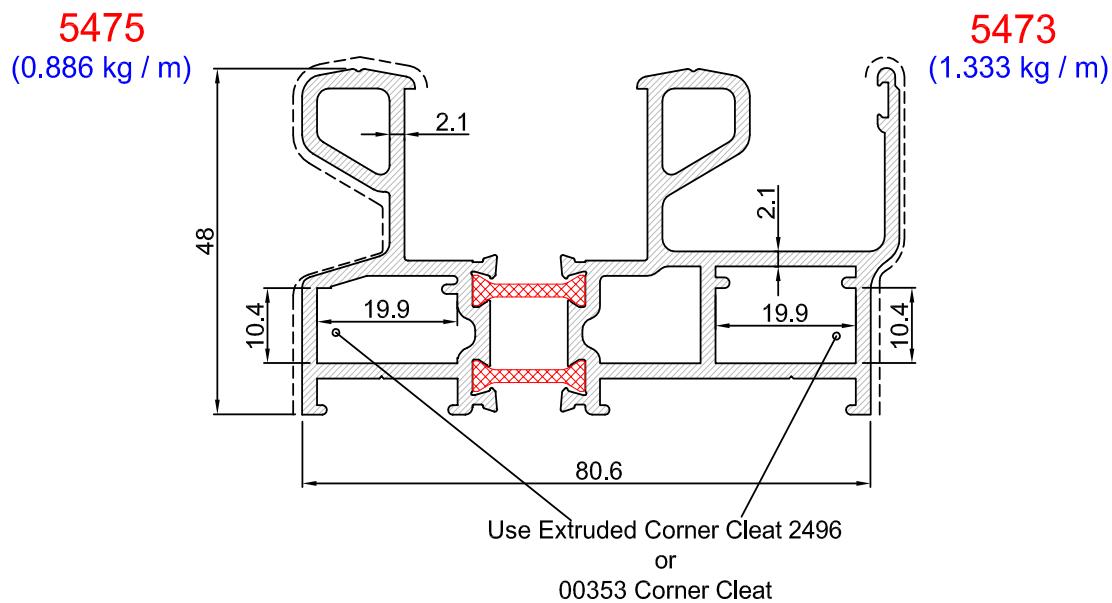
TA 531
2.113 kg/m

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500

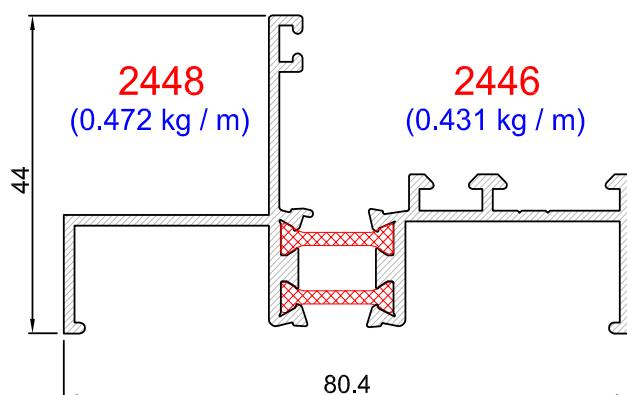
HEAVY DUTY PROFILES (2.1mm THICK)

Sections (Profiles) Drawings

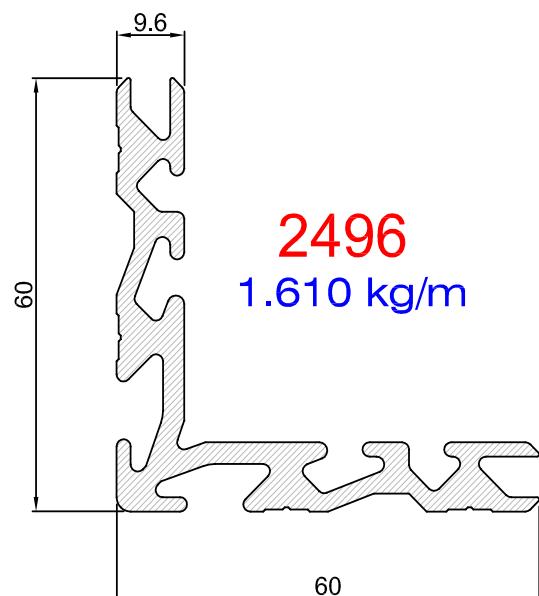


**SLIDING WINDOWS AND DOORS
SECTIONS TOP FIXLITE**

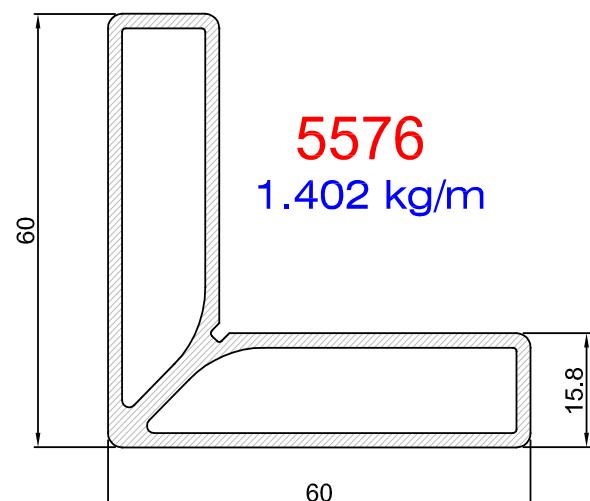
ECO - 500



T 542 (T4)
0.998 kg/m



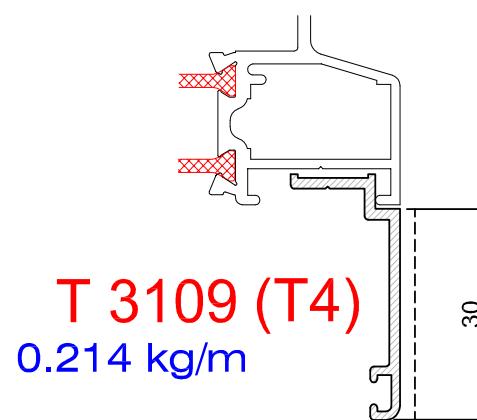
2496
1.610 kg/m



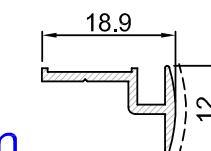
5576
1.402 kg/m



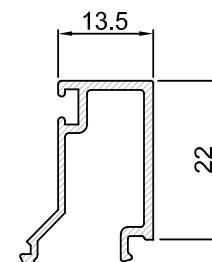
T 2254
0.335 kg/m



T 3109 (T4)
0.214 kg/m



T 2253
0.116 kg/m

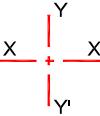
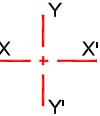
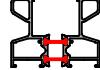
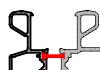
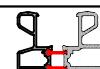
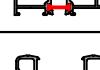
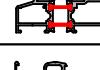
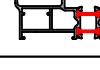
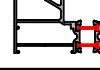
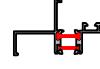
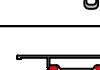
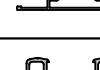


T 2283 (T4)
0.235 kg/m

**THERMAL BREAK SLIDING SERIES
SECTIONS MOMENT OF INERTIA**

ECO - 500

Sections Moment of Intertia Details

	Sec. No.	I_{xx}^l (CM^4)	I_{yy}^l (CM^4)		Sec. No.	I_{xx}^l (CM^4)	I_{yy}^l (CM^4)
	TA 510	11.51	22.20				
	TA 511	14.64	64.74				
	TA 512	19.61	72.83				
	TA 520	13.29	44.07				
	TA 521	13.24	45.12				
	TA 530	15.06	76.12				
	TA 531	14.96	77.66				
	TA 542	17.71	03.50				
	TA 570	19.09	08.84				
	TA 571	19.13	08.96				
	TA 580	20.97	19.43				
	TA 590	21.98	07.64				
	TA 600	16.34	58.83				
	TA 610	24.40	12.09				

Project Pictures

