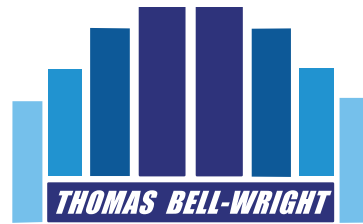


ECO - 500 SLIDING

Certificate of Testing



THOMAS BELL-WRIGHT
INTERNATIONAL CONSULTANTS

Certificate Number: CHF02

Date: 2007, June

Project: Seven Tides Ibn Batuta Complex
at Gardens Mall

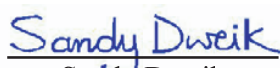
System Supplier: Al Hamad Industries Co.,
(L.L.C.)
Extrusion Division
P.O. Box 6275
Sharjah, U.A.E.

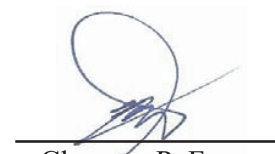
System: ECO - 500 Thermal Break Sliding
Window

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
Quality Manager


Clarence P. Facun
Testing Engineer

Date: 19 June 2007

P.O. BOX 26385 DUBAI, U.A.E. TEL: (+9714) 333-2692 FAX: (+9714) 333-2693 WEB: www.bell-wright.com

a. Air infiltration test

PROJECT NAME:

SEVEN TIDES, IBN BATTUTA COMPLEX

AIR INFILTRATION TEST ASTM E 283

Monday, April 30, 20079:30:00 AMReset Date

AMBIENT CONDITIONS

Air Temperature

37

°C

Wind Speedm/s

Barometric Pressure

10.15

mb

Wind DirectionDeg

Relative Humidity

15

%

TESTING ENGINEER

Clark Facun

SPECIMEN TEST CRITERIA

Width

1.3

m

Height

1.4

m

Test Pressure

300

Pa

Area

1.82

m²

Length of opening joint

0.0

m

Permitted Leakage area

2.00

m³/hr/m²

Permitted Leakage(Meter opening joint)

0.0

m³/hr/m

Total permitted Leakage

3.6

m³/hr

Update Links

Zero Pressure

READINGS

SEAL WITH POLYETHYLENE

Chamber Pressure

300

Pa

Nozzle Pressure

34

Pa

Differential Pressure

0

Pa

Flow

0

m³/hr

Nozzle Flow

62.2

m³/hr

Data Recorded at

9:50:00 AM

READINGS

WITHOUT POLYETHYLENE

Chamber Pressure

300

Pa

Nozzle Pressure

82

Pa

Differential Pressure

266

Pa

Flow

175

m³/hr

Nozzle Flow

96.7

m³/hr

Data Recorded at

10:40:00 AM

SUMMARY RESULTS

Permitted Leakage

4

m³/hr

Specimen Leakage

34.55

m³/hr

Conclusion

Pass

Signature

b. Static water penetration test

PROJECT NAME:

SEVEN TIDES, IBN BATTUTA COMPLEX

STATIC WATER PENETRATION TEST to ASTM E 331

Reset Date

Monday, 30 April 2007

10:55:00 AM

AMBIENT CONDITIONS

Air Temperature

39

°C

Wind Speed

m/s

Barometric Pressure

10.14

mb

Relative Humidity

15

%

TESTING ENGINEER

Clark Facun

Chamber Connection

B- PT L2

SPECIMEN TEST CRITERIA

Width

1.3

m

Height

1.4

m

The spray rack will consist of

3

rows of

3

Nozzles

Test Pressure

240

Pa

Update Links

READINGS

Hours

0

Minutes

15

Seconds

0

Timer

Chamber Pressure

240

Zero

Start

Stop

Start/reset timer

11:00:00 AM

Calculated finishing time

11:15:00 AM

Actual when timer stopped

11:25:00 AM

Conclution

Pass

Signature

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

c. Structural positive 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

Reset Date

Monday, 30 April 2007

11:30:00 AM

Relative Humidity

15

%

TESTING ENGINEER

Clark Facun

SPECIMEN TEST CRITERIA

Update Links

Chamber Connection

C- PT I

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

Diagram

1400

650

650

1300

700

700

LDT 1

LDT 2

LDT 3

LDT 4

LDT 5

LDT 6

LDT 7

LIVE READINGS

POSITIVE WIND LOAD

Chamber Pressure	1211	Pa
Top Center Member LDT 1	4.3	mm
Middle Center Member LDT 2	4.6	mm
Bottom Center Member LDT 3	3.1	mm
Top Right Member LDT 4	3.8	mm
Middle Right Member LDT 5	3.8	mm
Bottom Right Member LDT 6	3.1	mm
Glass LDT 7	0.0	mm
LDT 8	0.0	mm

Data recorded @

11:40:20 AM

Chamber Pressure	1211	Pa				
Actual Mullion Deflection	1	mm				
Chamber Pressure	1211	Pa				
Actual Transom Deflection	0	mm				
Design WL Pressure	1211	Pa				
Actual Mullion Def	1	mm				
Design WL Pressure	1211	Pa				
Actual Transom Def	0	mm				
RESIDUAL	LDT 1	LDT 2	LDT 3	LDT 4	LDT 5	LDT 6

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

13

ECO - 500 SLIDING

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

Reset Date

Monday, 30 April 2007

11:45:00 AM

Relative Humidity

15

%

TESTING ENGINEER

Clark Facun

Chamber Connection

C- PT I

SPECIMEN TEST CRITERIA

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

Update Links

Diagram

LIVE READINGS

NEGATIVE WIND LOAD

Chamber Pressure		1211	Pa
Top Center Member	LDT 1	3.8	mm
Middle Center Member	LDT 2	4.8	mm
Bottom Center Member	LDT 3	3.1	mm
Top Right Member	LDT 4	3.1	mm
Middle Right Member	LDT 5	3.8	mm
Bottom Right Member	LDT 6	3.1	mm
Glass	LDT 7	0.0	mm
	LDT 8	0.0	mm

Data recorded @ 12:07:18 PM

Chamber Pressure		1211	Pa			
Actual Mullion Deflection	1	mm	Pass			
Design WL Pressure	1211	Pa				
Actual Mullion Def.	1	mm	Pass			
Chamber Pressure	1211	Pa				
Design WL Pressure	1211	Pa				
Actual Transom Def	1	mm	Pass			
RESIDUAL	LDT 1	LDT 2	LDT 3	LDT 4	LDT 5	LDT 6

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

Monday, 30 April 2007
12:10:00 PM

AMBIENT CONDITIONS

Air Temperature39 °C

Wind Speedm/s

Barometric Pressure10.16 mb

Relative Humidity18 %

TESTING ENGINEER

Clark Facun

Chamber Connection

B- PT L2

SPECIMEN TEST CRITERIA

The spray rack will consist of3 rows of3 Nozzles

Width1.3 m

Height1.4 m

Test Pressure240 Pa

Update Links

READINGS

Hours0

Minutes15

Seconds0

Timer

0

15

0

Chamber Pressure

240

Zero

Start

Stop

Start/reset timer12:20:00 PM

Calculated finishing time12:35:00 PM

Actual when timer stopped12:40:00 PM

Conclusion

Pass

Signature

f. 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

Monday, 30 April 2007

3:00 PM

AMBIENT CONDITIONS

Air Temperature

38

°C

Wind Speed

m/s

Barometric Pressure

10.06

mb

Relative Humidity

19

%

TESTING ENGINEER

Clark Facun

Chamber Connection

B- PT L2

SPECIMEN TEST CRITERIA

The spray rack will consist of

3

rows of

240

Pa

Nozzles

1.4

m

Width

1.3

m

Height

1.4

m

Test Pressure

240

Pa

Update Links

READINGS

Hours

0

Minutes

15

Seconds

0

Timer

Chamber Pressure

240

Start

Stop

Zero

Start/reset timer

3:50:00 PM

Calculated finishing time

3:05:00 PM

Actual when timer stopped

3:07:00 PM

Conclusion

Pass

Signature

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

g. Structural positive 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

Reset Date

Monday, 30 April 2007 4:10 PM

Relative Humidity

19

%

TESTING ENGINEER

Clark Facun

Chamber Connection

C- PT I

SPECIMEN TEST CRITERIA

Design Wind Pressure

1817

Pa

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

Update Links

Diagram

LIVE READINGS

Chamber Pressure

1817

Pa

Top Center Member

LDT 1

5.6

mm

Middle Center Member

LDT 2

6.4

mm

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

Data recorded @

4:18 PM

POSITIVE WIND LOAD

Chamber Pressure

1817

Pa

Actual Mullion Deflection

2

mm

Pass

Design WL Pressure

1817

Pa

Actual Transom Def

1

mm

Pass

Chamber Pressure

1817

Pa

Actual Mullion Deflection

1

mm

Pass

Design WL Pressure

1817

Pa

Actual Transom Def

1

mm

Pass

RESIDUAL

LDT 1

0.38

LDT 2

0.25

LDT 3

0.25

LDT 4

0.25

LDT 5

0.51

LDT 6

0.64

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

Reset Date

Monday, 30 April 2007

4:25:00 PM

Relative Humidity

19

%

TESTING ENGINEER

Clark Facun

Chamber Connection

C- PT I

SPECIMEN TEST CRITERIA

Design Wind Pressure

1817 Pa

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

Update Links

LIVE READINGS

NEGATIVE WIND LOAD

Chamber Pressure

1817

Pa

Top Center Member

LDT 1

5.6 mm

Middle Center Member

LDT 2

6.6 mm

Bottom Center Member

LDT 3

4.3 mm

Top Right Member

LDT 4

3.3 mm

Middle Right Member

LDT 5

4.8 mm

Bottom Right Member

LDT 6

4.1 mm

Glass

LDT 7

0.0 mm

LDT 8

0.0 mm

Data recorded @

4:38 PM

Chamber Pressure

1817

Pa

Actual Mullion Deflection

2

mm

Pass

Chamber Pressure

1817

Pa

Actual Transom Deflection

1

mm

Pass

Design WL Pressure

1817

Pa

Actual Mullion Def.

2

mm

Pass

Design WL Pressure

1817

Pa

Actual Transom Def

1

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

1400

650

650

700

700

1300

LDT 1

LDT 2

LDT 3

LDT 4

LDT 5

LDT 6

LDT 7

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

i. Post Structural - Air infiltration test

PROJECT NAME:
POST STRUCTURAL - AIR INFILTRATION TEST ASTM E 283

SEVEN TIDES, IBN BATTUTA COMPLEX

Ambient Conditions

Air Temperature41 °C

Wind Speedm/s

Barometric Pressure

Wind Direction

Relative Humidity14 %

Reset Date

Testing Engineer

Clark Facun

Specimen Test Criteria

Width1.3 m

Height1.4 m

Test Pressure75 Pa

Area1.82 m²

Length of opening joint0.0 m

Permitted Leakage area5.00 m³/hr/m²

Permitted Leakage(Meter opening joint)0.0 m³/hr/m

Total permitted Leakage9.1 m³/hr

Update Links

Zero Pressure

Readings

Seal with Polyethylene

Chamber Pressure75 Pa

Nozzle Pressure11 Pa

Differential Pressure61 Pa

Flow83 m3/hr

Nozzle Flow35.3 m3/hr

Data Recorded at2:45 PM

Without Polyethylene

Chamber Pressure75 Pa

Nozzle Pressure14 Pa

Differential Pressure0 Pa

Flow0 m3/hr

Nozzle Flow39.8 m3/hr

Data Recorded at2:53 PM

Summary Results

Permitted Leakage9 m³/hr

Specimen Leakage4.54 m³/hr

ConclusionPass

Signature

ECO - 500 SLIDING

19

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

j. Post Structural - Air infiltration test

PROJECT NAME:

SEVEN TIDES, IBN BATTUTA COMPLEX

POST STRUCTURAL - AIR INFILTRATION TEST ASTM E 283

AMBIENT CONDITIONS

Air Temperature

41

°C

Wind Speed

m/s

Barometric Pressure

10.02

mb

Wind Direction

Deg

Relative Humidity

14

%

Reset Date

Tuesday, May 15, 2007

2:30:12 PM

TESTING ENGINEER

Clark Facun

SPECIMEN TEST CRITERIA

Width

1.3 m

Height

1.4 m

Test Pressure

100 Pa

Area

1.82 m²

Length of opening joint

0.0 m

Permitted Leakage area

5.00 m³/hr/m²

Permitted Leakage(Meter opening joint)

0.0 m³/hr/m

Total permitted Leakage

9.1 m³/hr

Update Links

Zero Pressure

READINGS

SEAL WITH POLYETHYLENE

WITHOUT POLYETHYLENE

Chamber Pressure

100 Pa

Nozzle Pressure

11 Pa

Differential Pressure

0 Pa

Flow

0 m3/hr

Nozzle Flow

35.3 m3/hr

Data Recorded at

2:45 PM

Display 1

Stop 1

Chamber Pressure

100 Pa

Nozzle Pressure

17 Pa

Differential Pressure

0 Pa

Flow

0 m3/hr

Nozzle Flow

43.9 m3/hr

Data Recorded at

2:53 PM

Display 2

Stop 2

SUMMARY RESULTS

Permitted Leakage

9 m³/hr

Specimen Leakage

8.61 m³/hr

Conclusion

Pass

Signature

THOMAS BELL-WRIGHT INTERNATIONAL CONSULTANTS

Test Certificate of Sliding Window

20

11

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

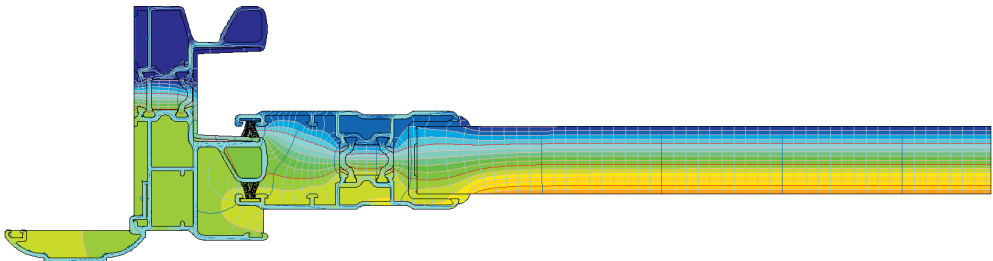
input data:	$q_{l,tot}$ =	16.738 W/m	R_{se} =	0.04 m ² K/W
	θ_e =	0.0 °C	R_{si} =	0.13 m ² K/W
	θ_i =	20.0 °C		
	d_p =	0.0241 m		
	λ_p =	0.035 W/m*K		
	U_p =	1.165 W/m ² K		
	l_p =	0.190 m		
			calculation results:	L_{2D} = 0.84 W/mK
	l_f =	0.1163 m	U_f =	5.29 W/m ² K

- $q_{l,tot}$: 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:

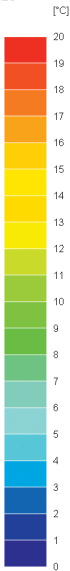
$$U_p = \left[\frac{1}{h_e} + \sum \frac{d_p}{\lambda_p} + \frac{1}{h_i} \right]^{-1}$$

- 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



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

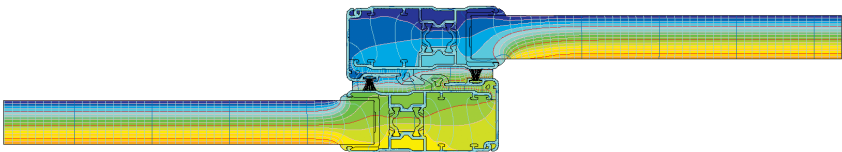
input data:	$q_{l,tot} =$	17.246 W/m	$R_{se} =$	0.04 m ² K/W
	$\theta_e =$	0.0 °C	$R_{si} =$	0.13 m ² K/W
	$\theta_i =$	20.0 °C		
	$d_p =$	0.0241 m		
	$\lambda_p =$	0.035 W/m*K		
	$U_p =$	1.165 W/m ² K		
	$l_p =$	0.380 m		
			calculation results:	$L_{2D} =$ 0.86 W/mK
	$l_f =$	0.0841 m		$U_f =$ 4.99 W/m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

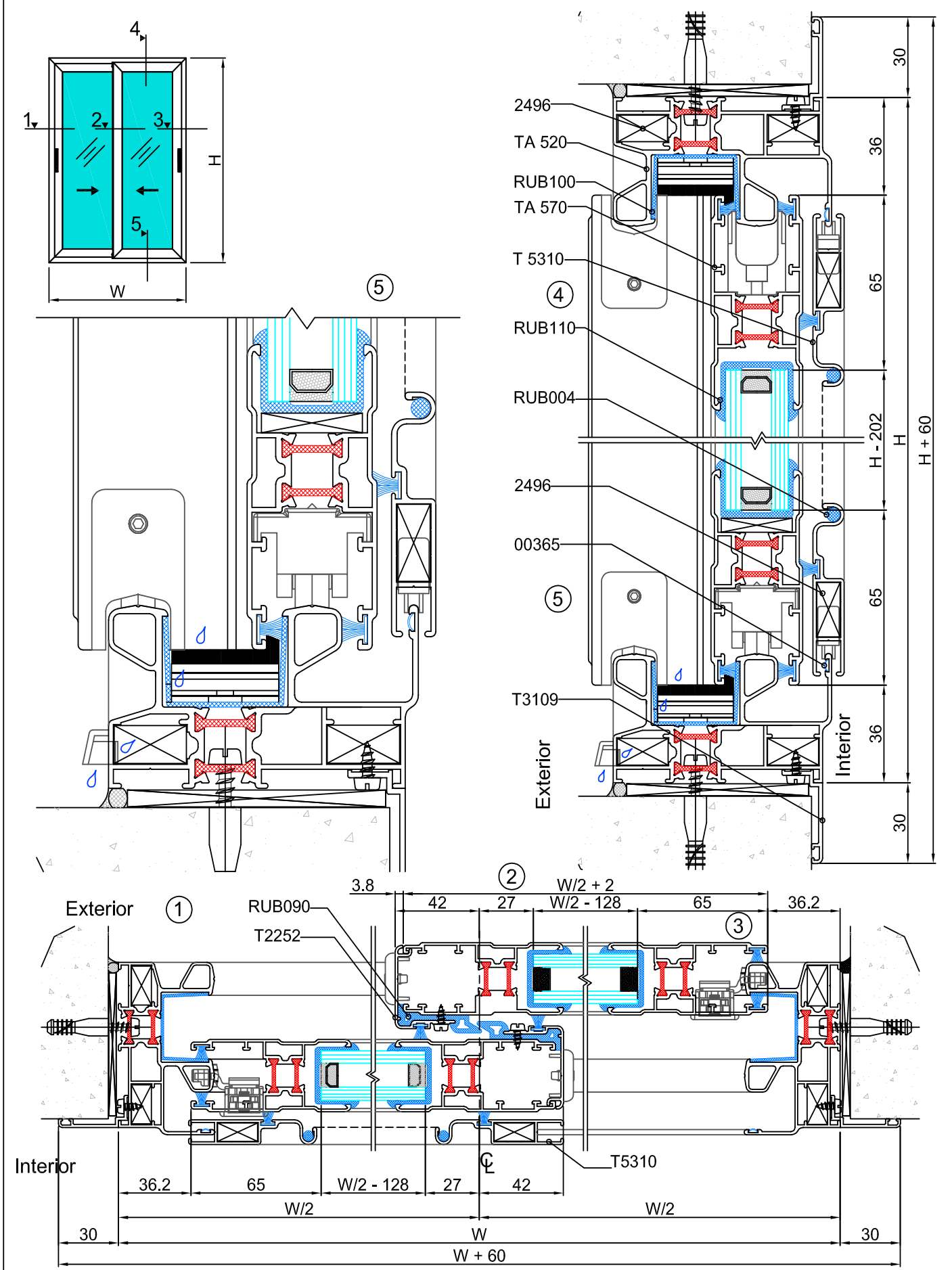
- l_p / l_f : input data: dimensions of the item



POWERED BY
TECHNOFORM BAUTEC

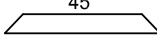
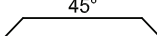
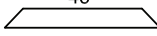
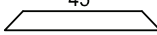
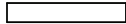
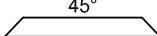
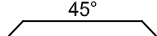
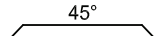
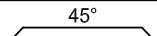
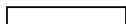
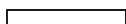
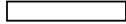
SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500



THERMAL BREAK
DOUBLE SLIDING WINDOW

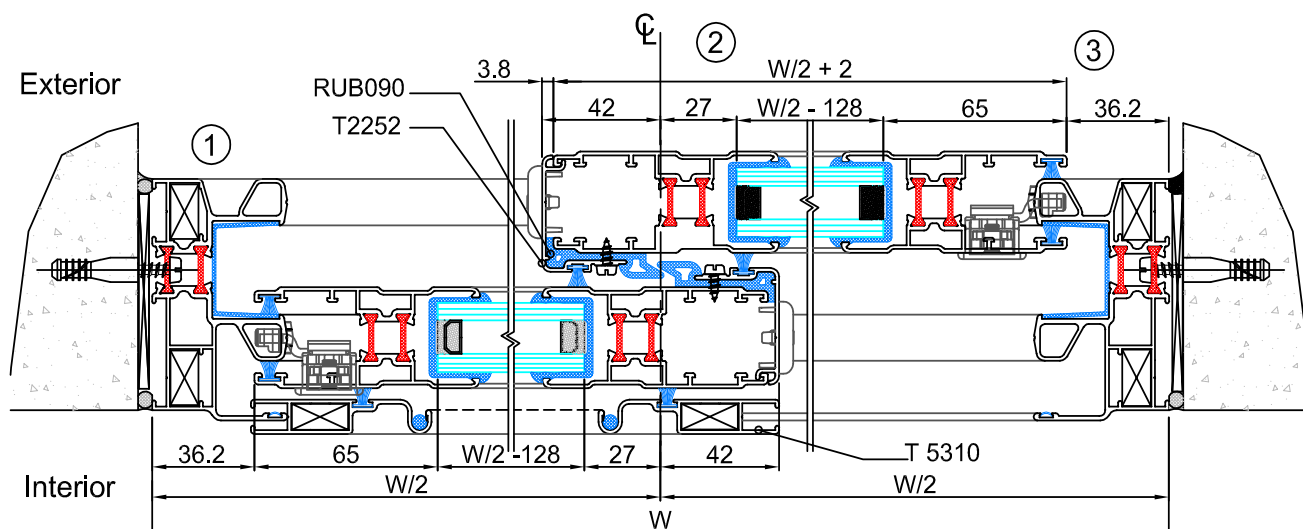
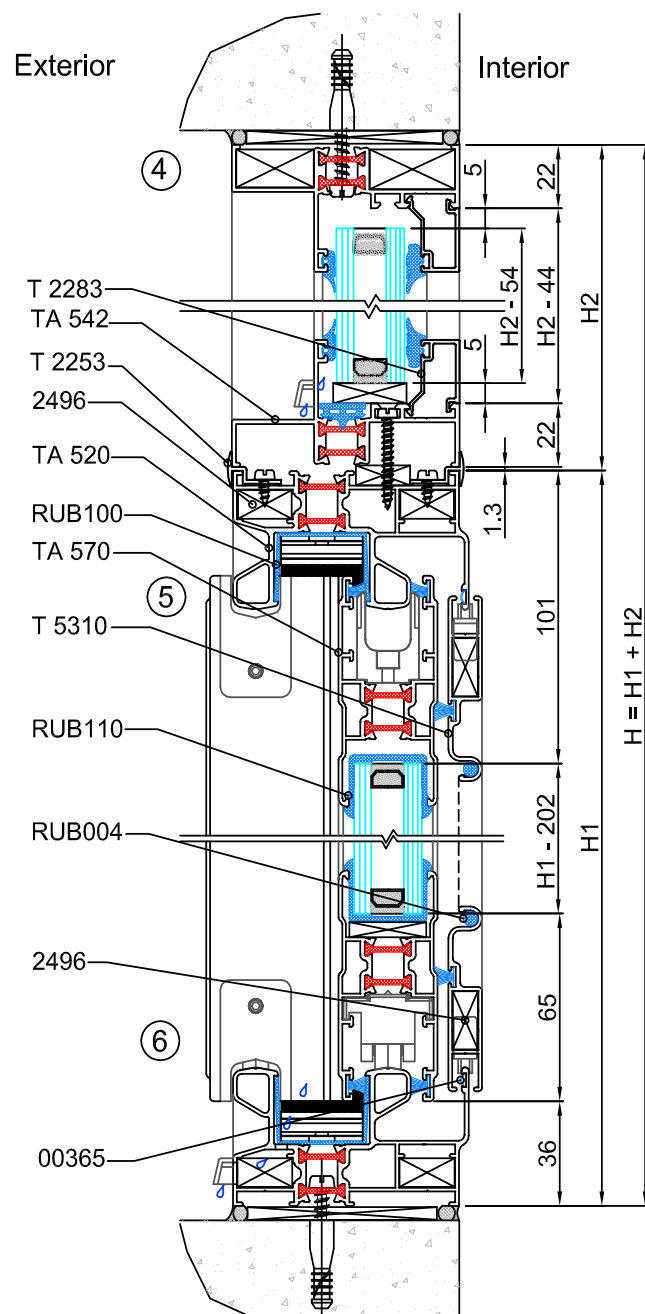
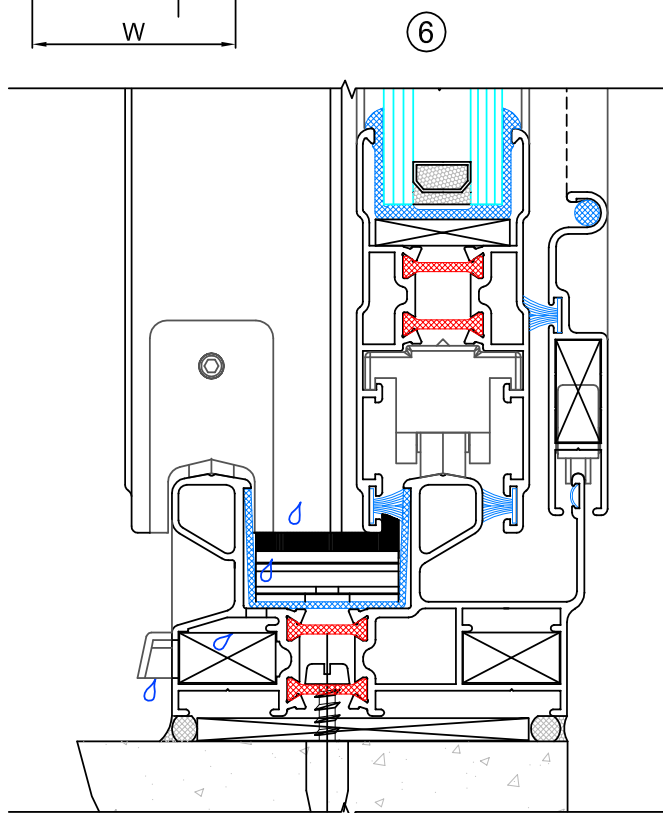
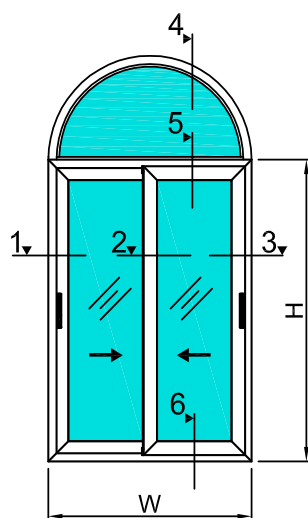
ECO - 500

PROFILE CUTTING LIST								
ITEM No.	DESCRIPTION & SECTION SHAPE		PROFILE No.	PROFILE CUTTING ANGLE	CUTTING SIZE	No. OF PIECES	REMARKS	
1.		FRAME WIDTH	TA 520		W	02		
2.		FRAME HEIGHT	TA 520		H	02		
3.		SASH WIDTH	TA 570		W/2 + 2	04	W/2 + 2	
4.		SASH HEIGHT	TA 570		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.		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					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

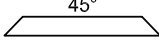
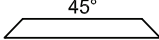
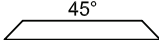
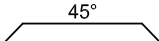
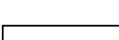
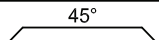
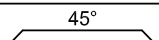
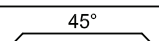
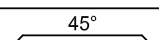
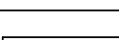
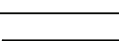
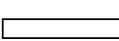
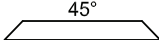
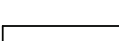
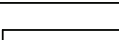
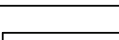
SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500



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	W/2 + 2
4.		SASH HEIGHT	TA 570		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.		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	
13.		FIXLITE FRAME WIDTH	TA 542		W	01	
14.		(T4) ARCH FRAME	TA 542		(3.14 X D)/2	01	(3.14 X D)/2
15.		GLASS BEAD FOR FIXLITE	T 2283		W - 44	01	
16.		(T4) GLASS BEAD FOR FIXLITE	T 2283		(3.14 X D)/2	01	(3.14 X D)/2
17.		ADOPTER	T 2253		W	02	
18.		CORNER CLEAT FOR FIXLITE FRAME	2261		28	02	MILL FINISH
					27	02	

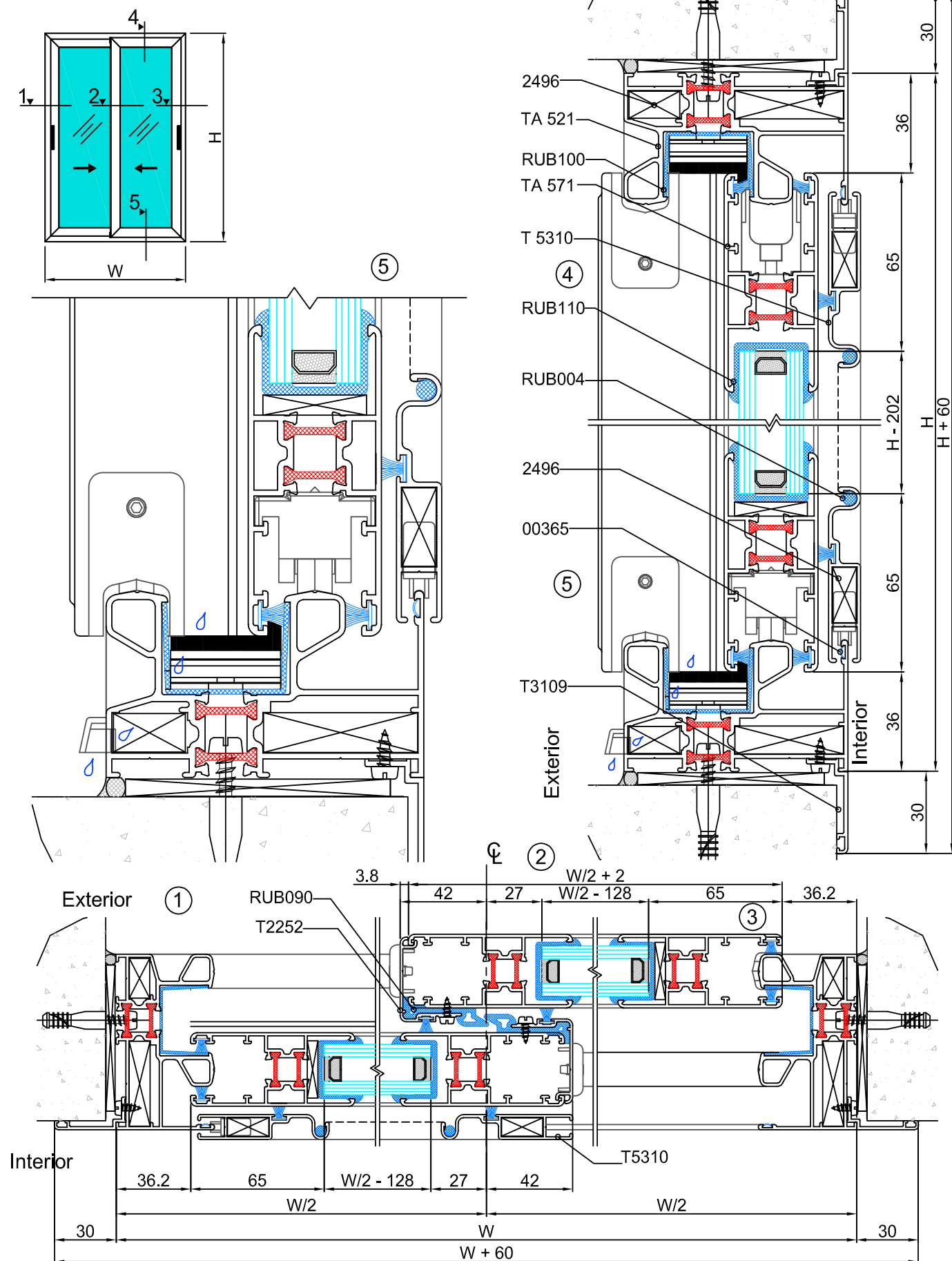
ACCESSORIES LIST					E.P.D.M. GASKET LIST		
ITEM No.	ACCESSORY CODE No.	DESCRIPTION	FINISH	QTY	ITEM No.	GASKET CODE No.	SINGLE LEAF
1.	00365	ALIGNMENT CORNER	M. F	04	1.	RUB 110	24mm U GASKET
2.	A1500	NYLON CORNER FOR SASH	M. F	08	2.	RUB 100	SLIDING FRAME GASKET
3.	2314	DRAIN HOLE COVER	M. F	04	3.	RUB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

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

SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

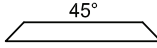
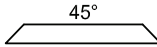
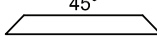
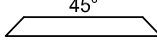
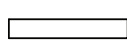
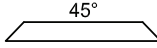
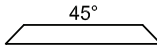
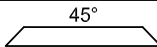
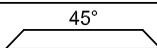
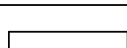
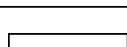
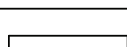
ECO - 500

STRAIGHT EDGE FRAME AND SASH



THERMAL BREAK DOUBLE SLIDING WINDOW
STRAIGHT EDGE FRAME AND SASH

ECO - 500

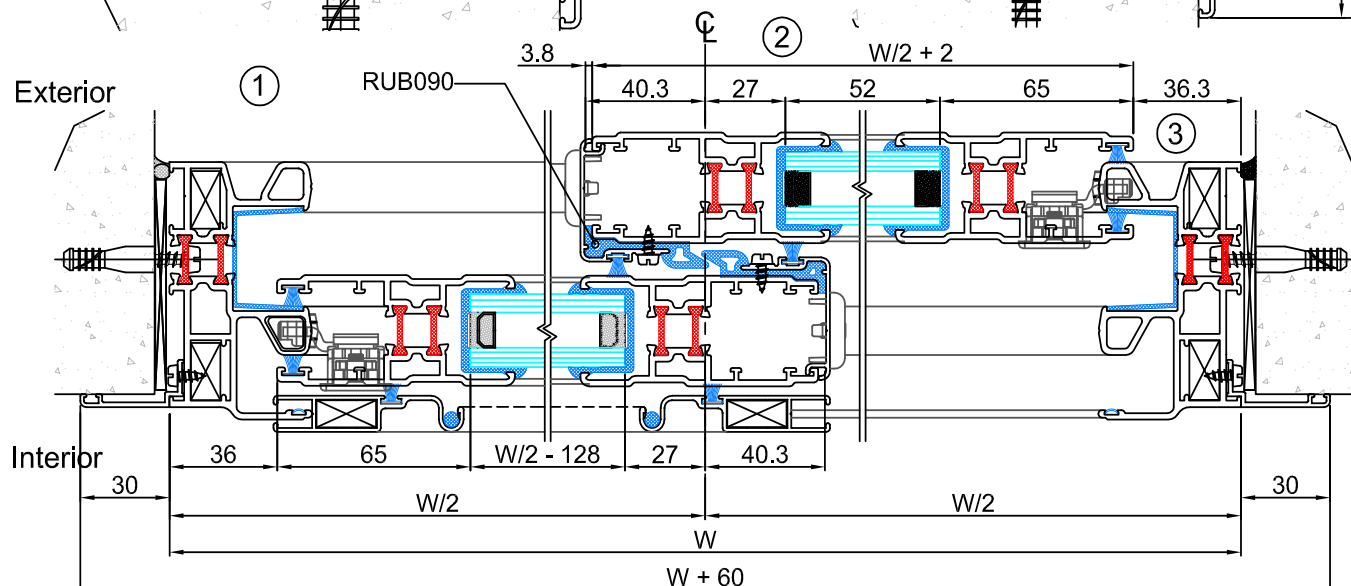
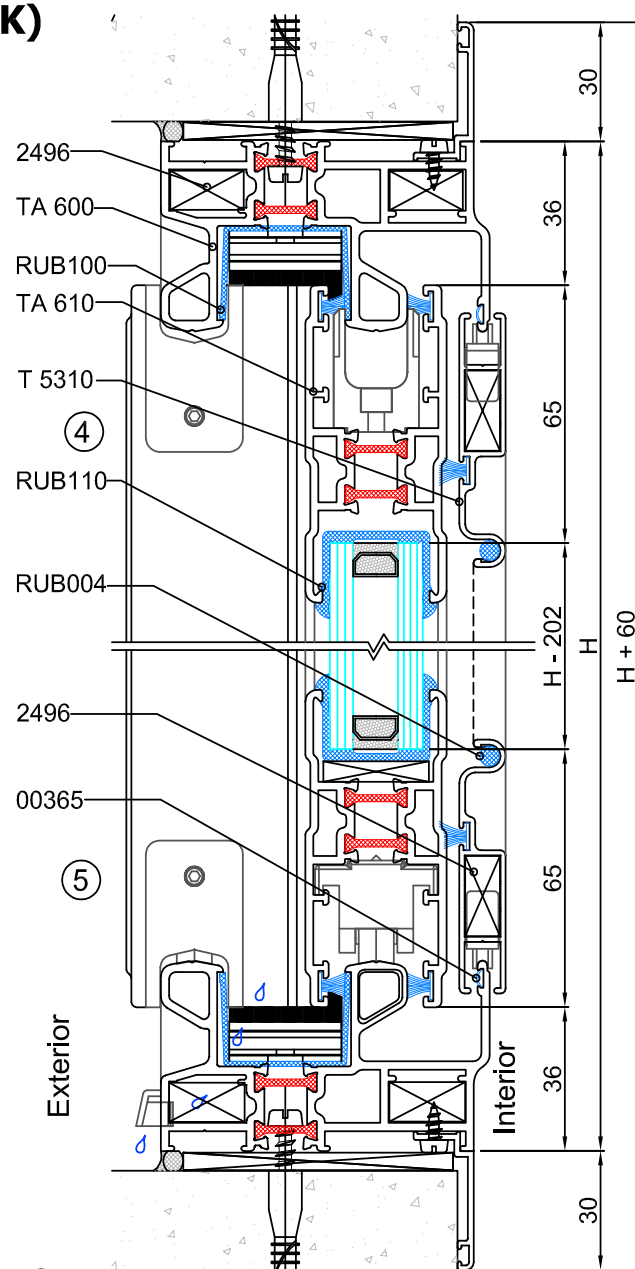
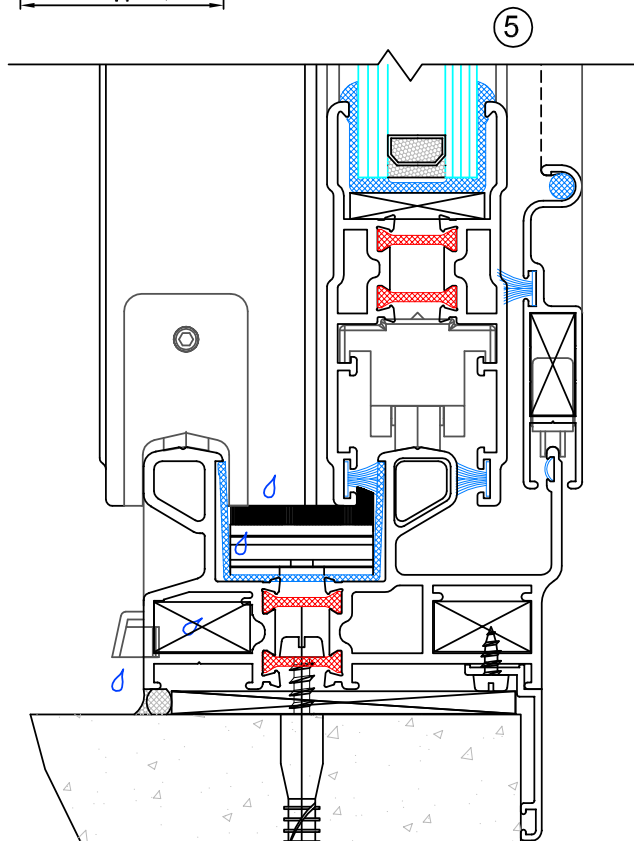
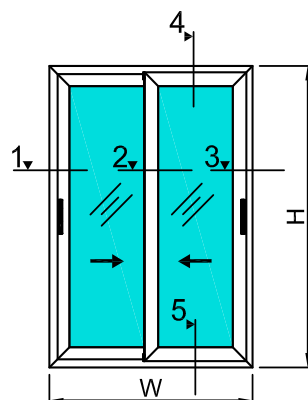
PROFILE CUTTING LIST								
ITEM No.	DESCRIPTION & SECTION SHAPE		PROFILE No.	PROFILE CUTTING ANGLE	CUTTING SIZE	No. OF PIECES	REMARKS	
1.		FRAME WIDTH	TA 521		W	02		
2.		FRAME HEIGHT	TA 521		H	02		
3.		SASH WIDTH	TA 571		W/2 + 2	04	W/2 + 2	
4.		SASH HEIGHT	TA 571		H - 72.6	04	H - 72.6	
5.		INTER LOCK 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.		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					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.	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

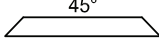
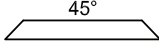
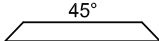
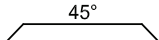
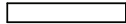
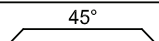
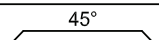
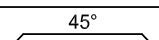
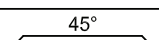
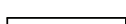
ECO - 500

HEAVY DUTY PROFILES (2.1mm THICK)

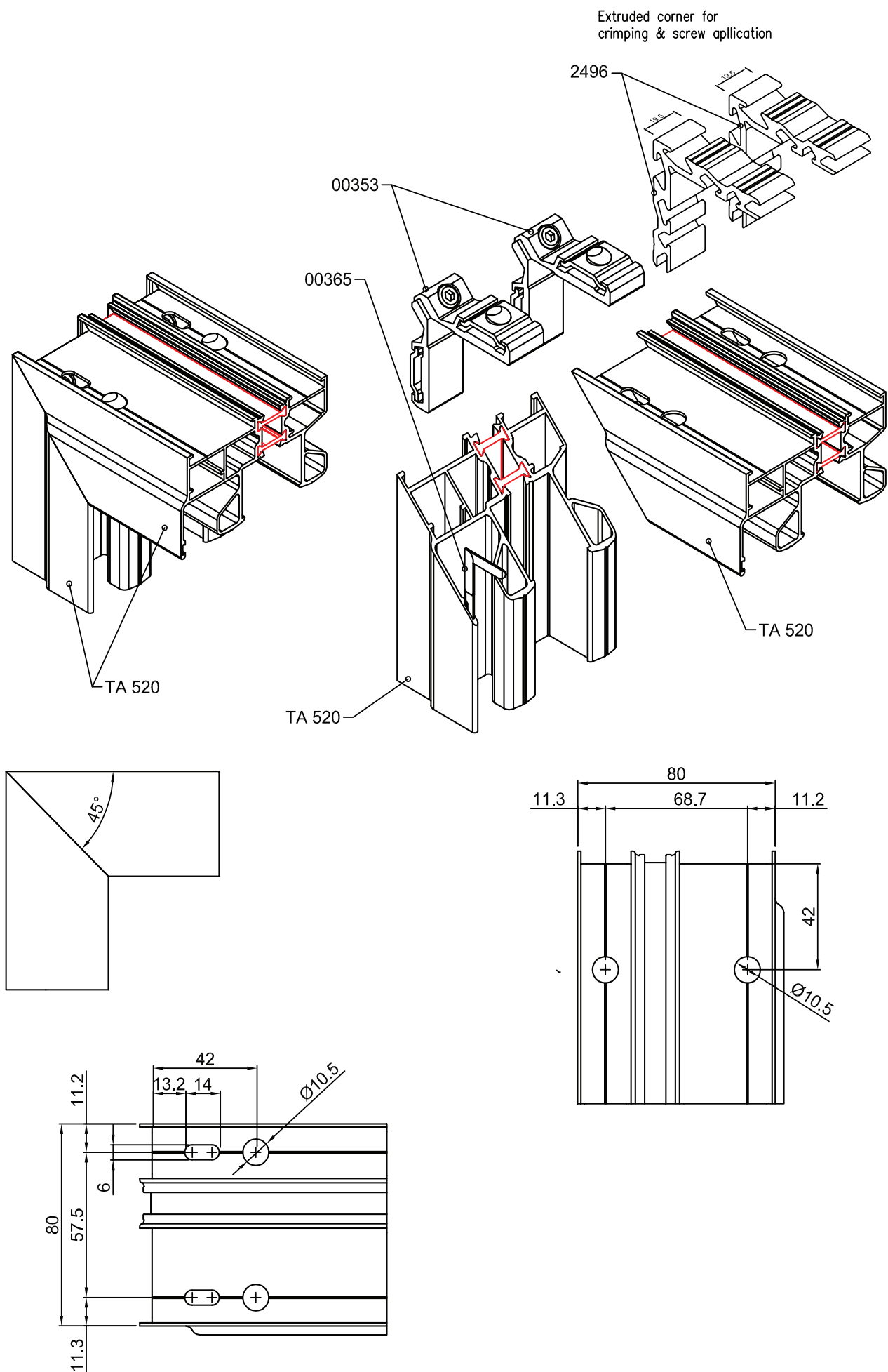


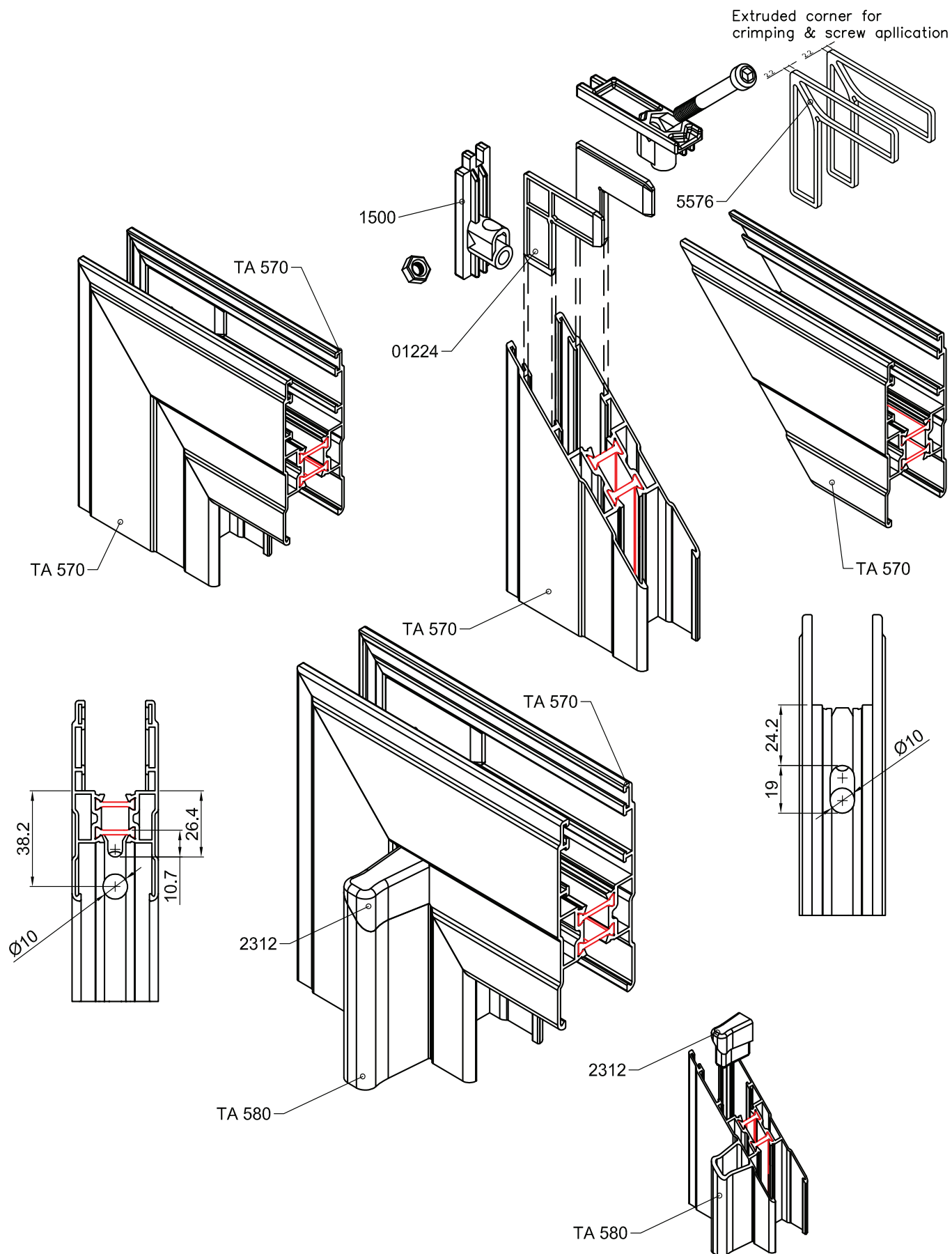
THERMAL BREAK DOUBLE SLIDING WINDOW
HEAVY DUTY PROFILES (2.1mm THICK)

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.		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					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				

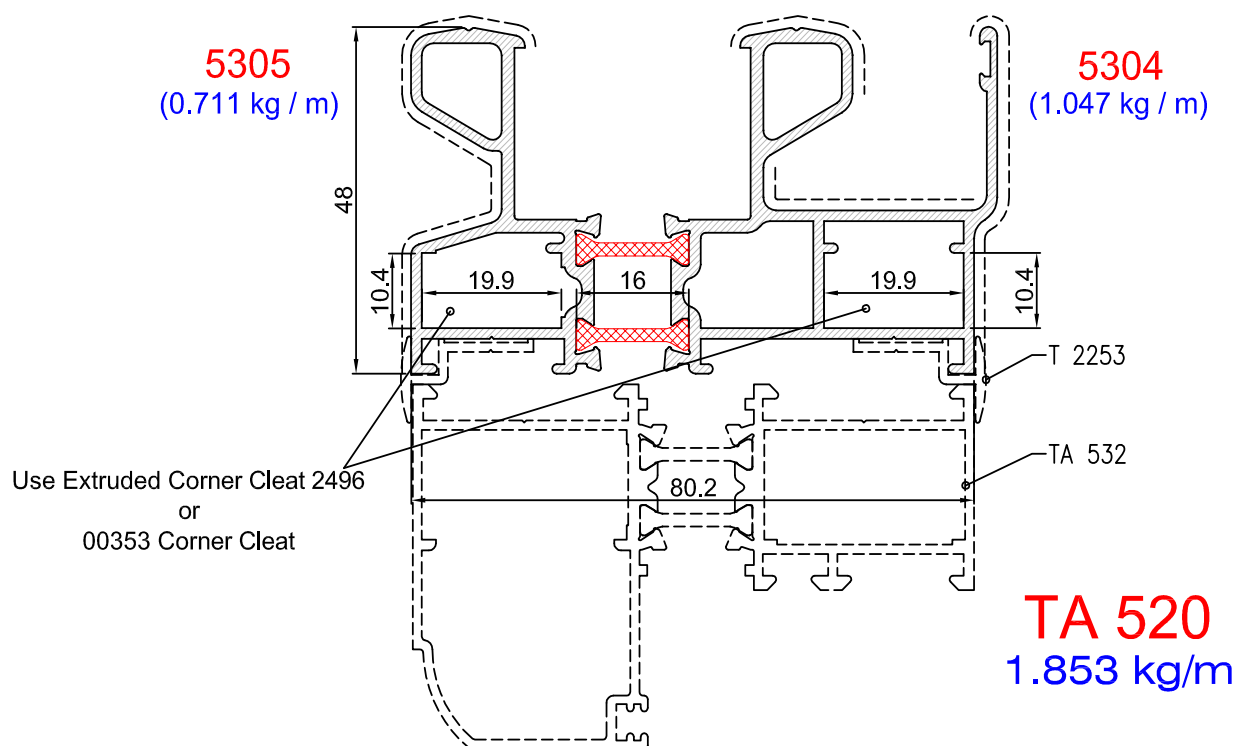
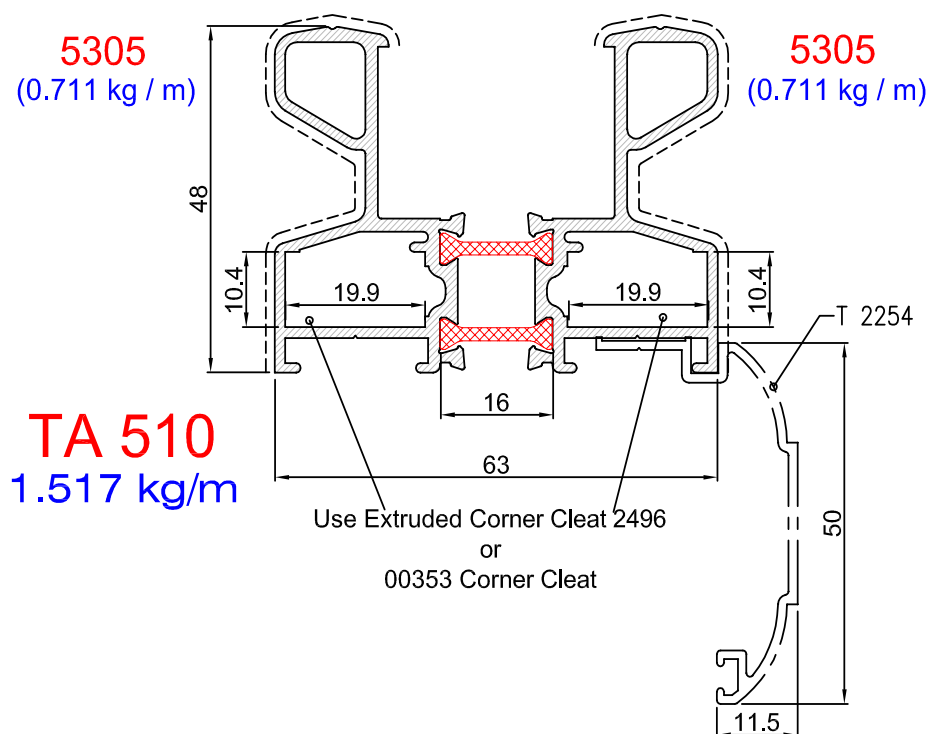
NOTE: SCREWS, FLY SCREEN ROLLER, ALUMINIUM MESH, SILICON & GLASS ARE NOT INCLUDED IN THE CUTTING LIST

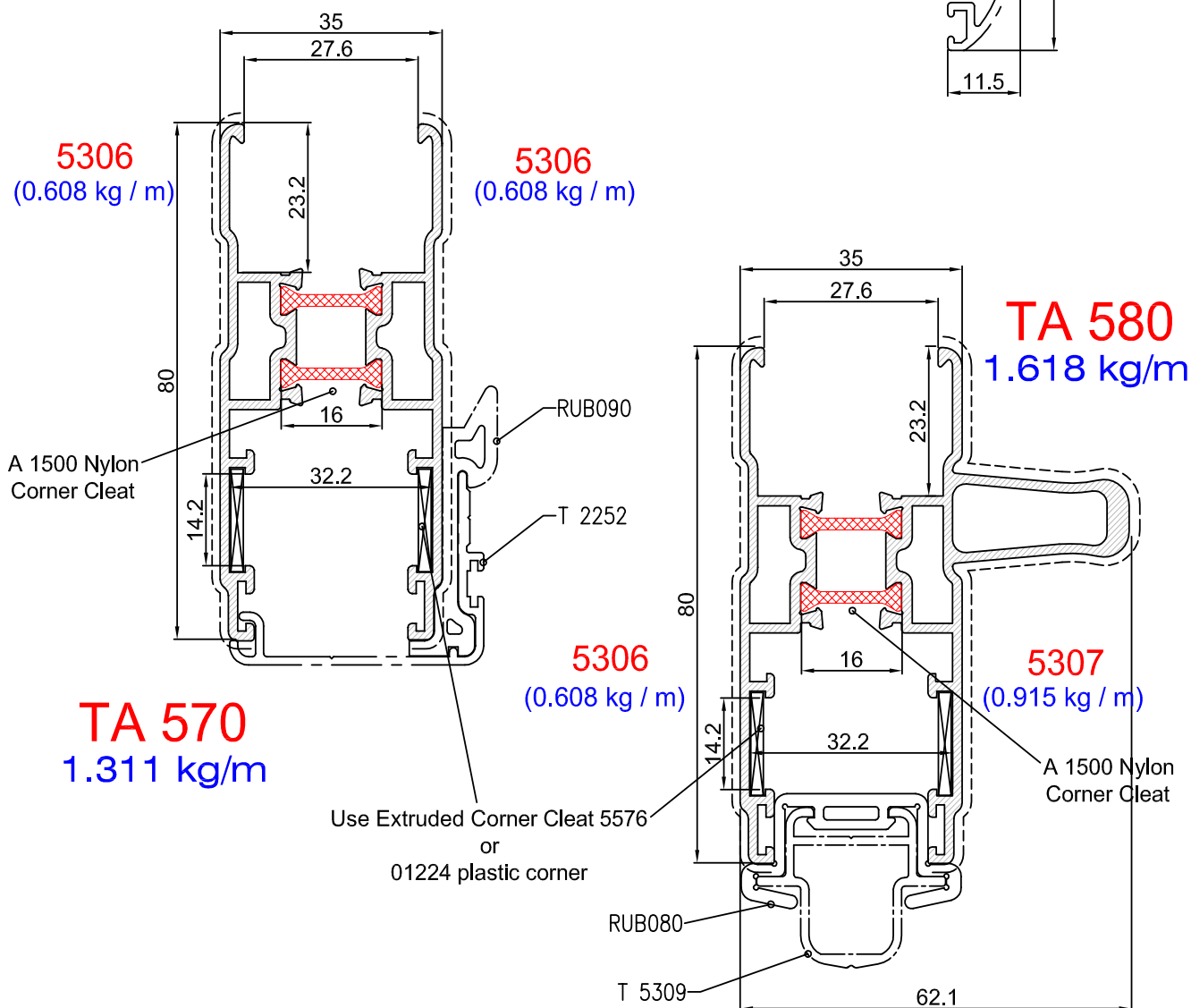
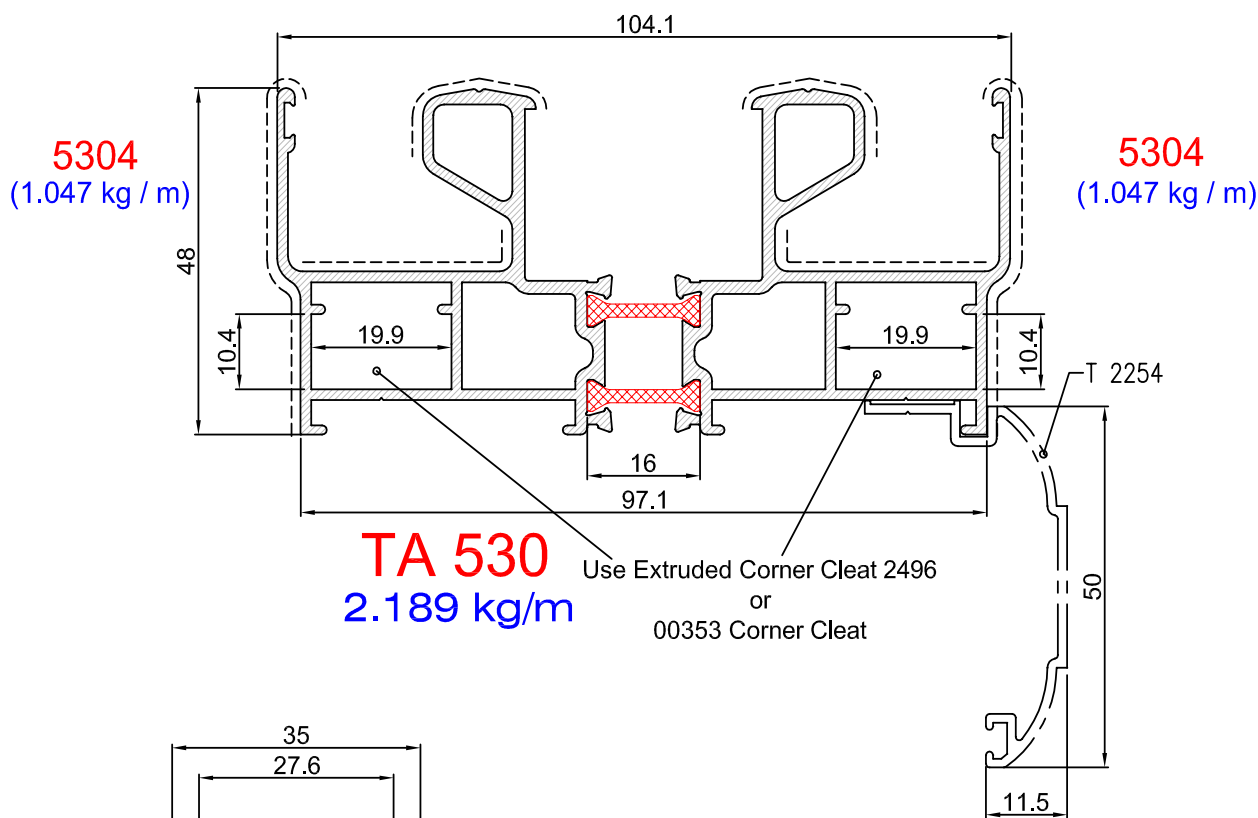




SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

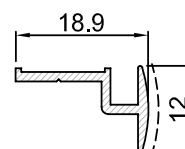
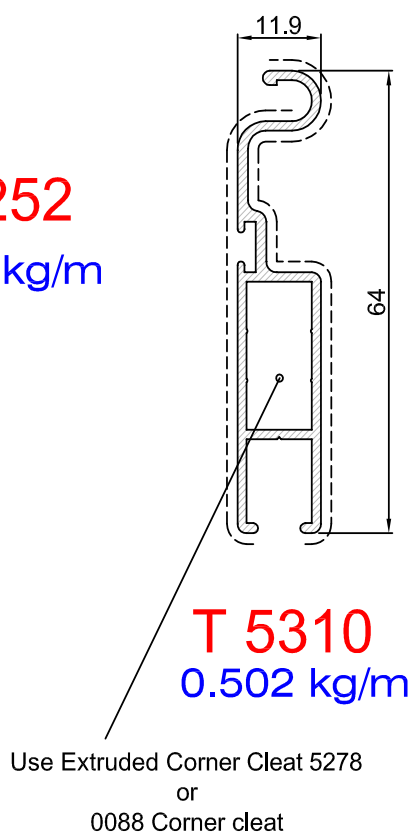
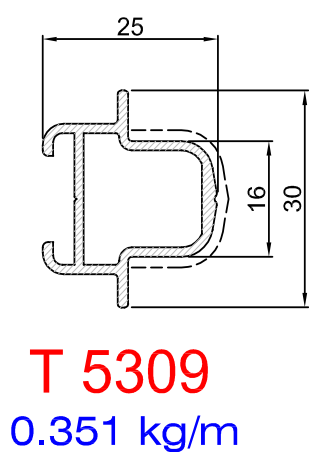
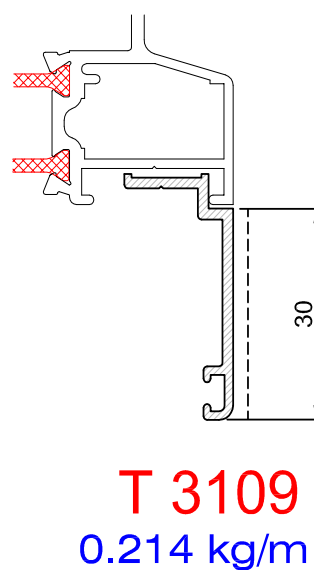
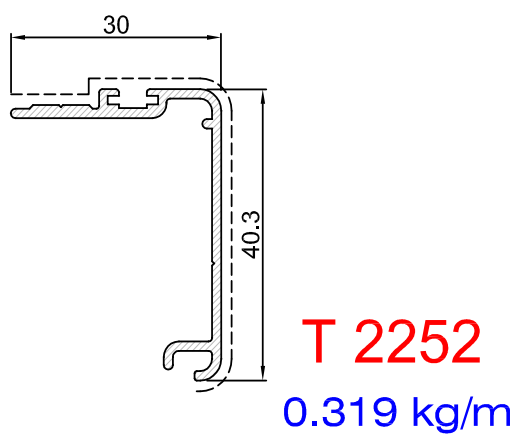
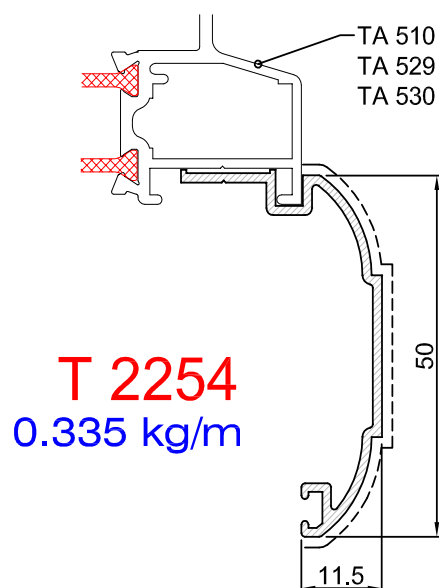
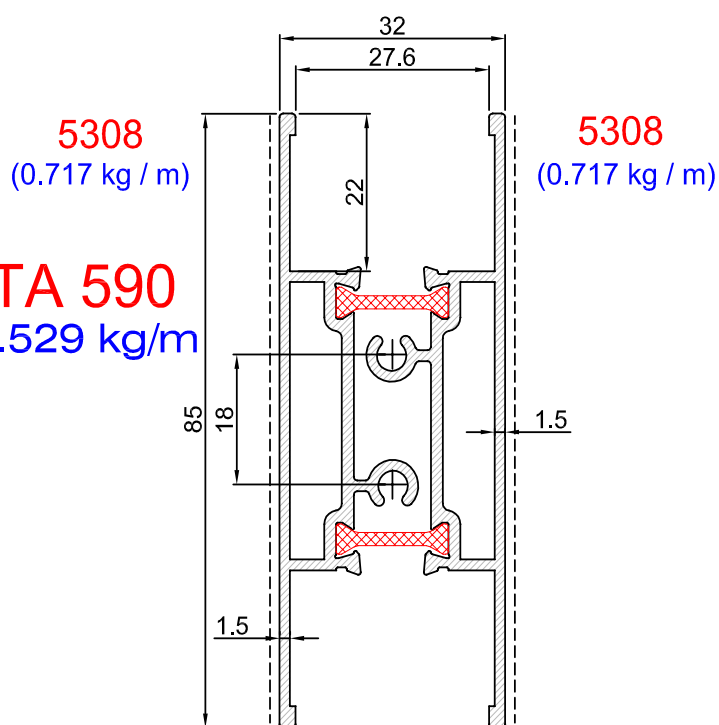
ECO - 500

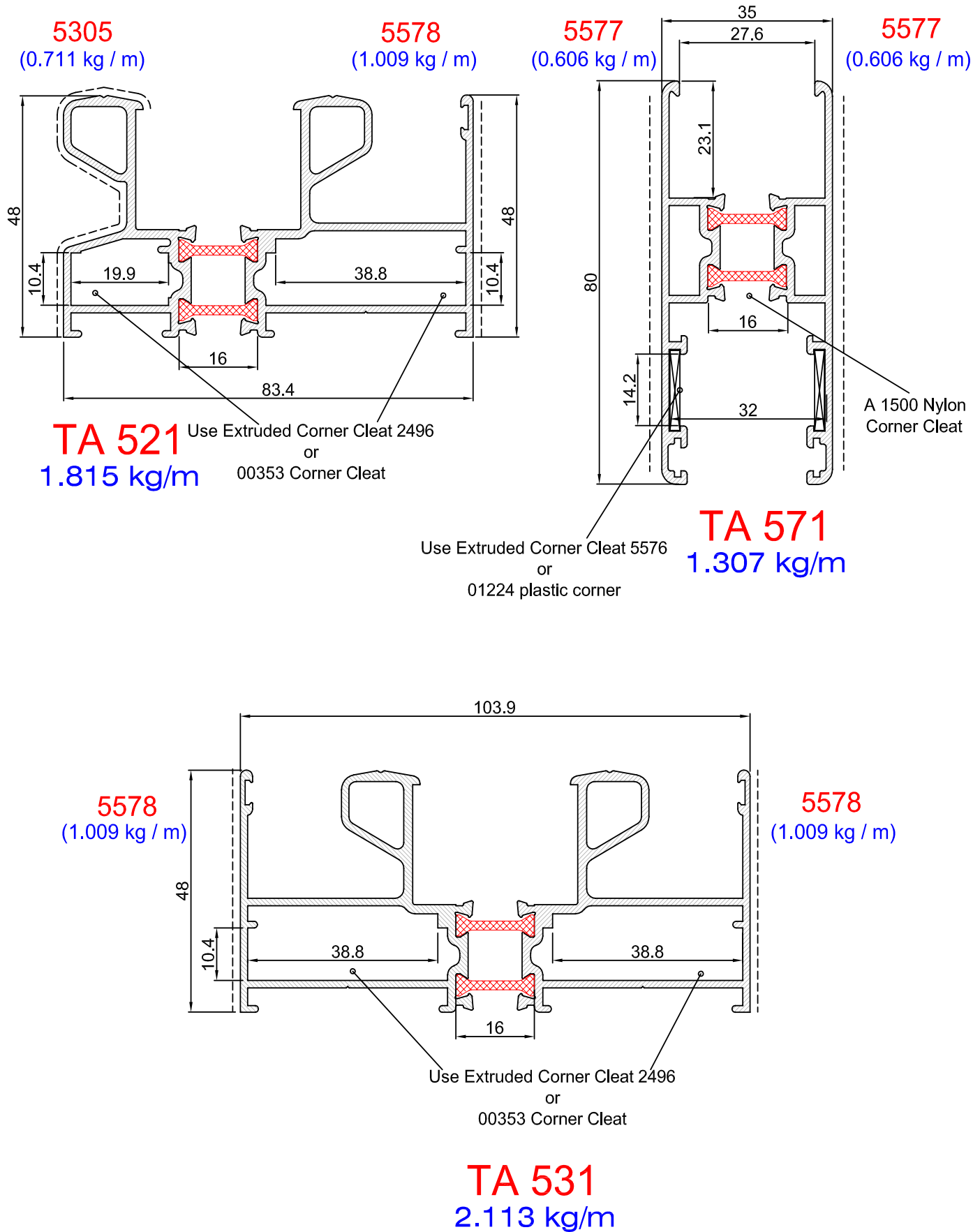




SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500

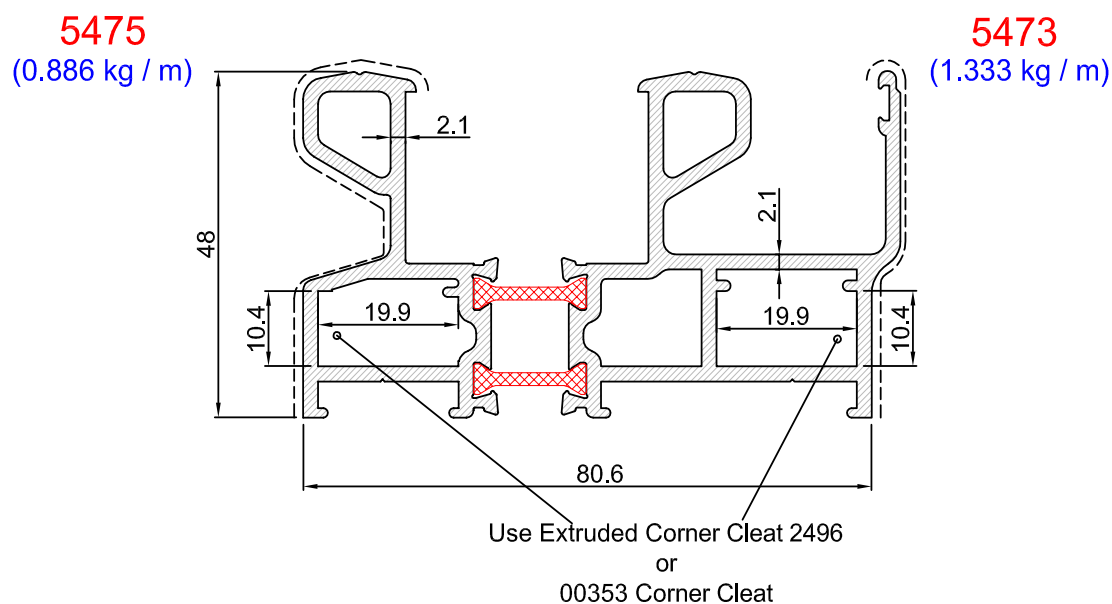




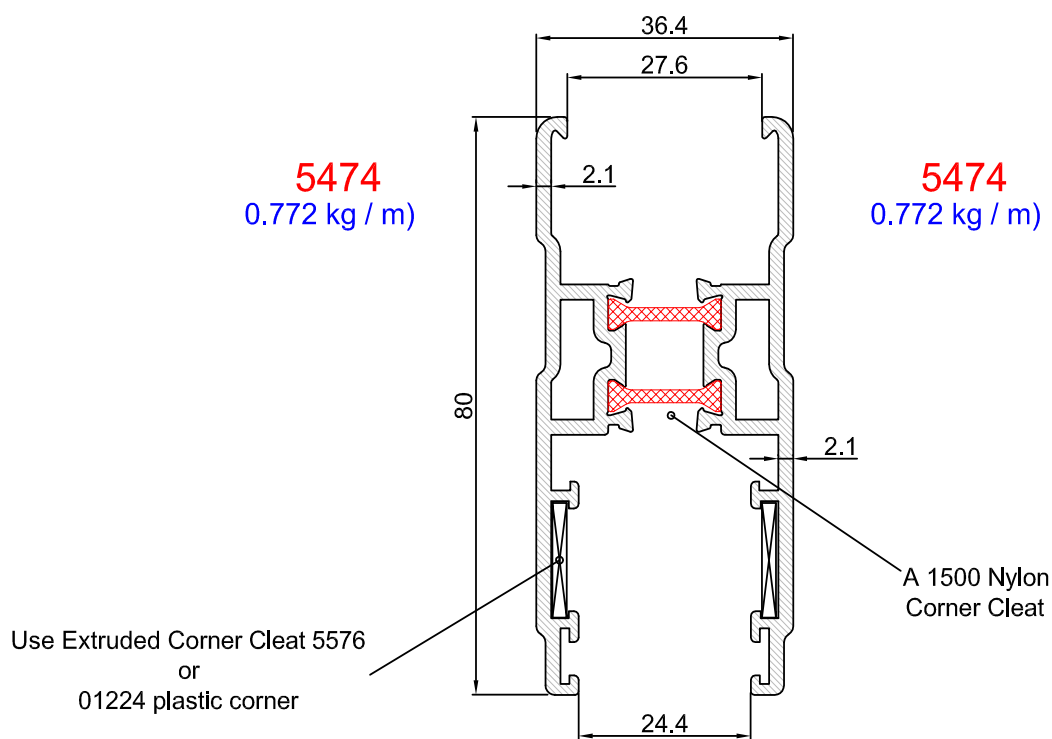
SLIDING SERIES THERMAL BREAK WINDOWS AND DOORS SECTIONS

ECO - 500

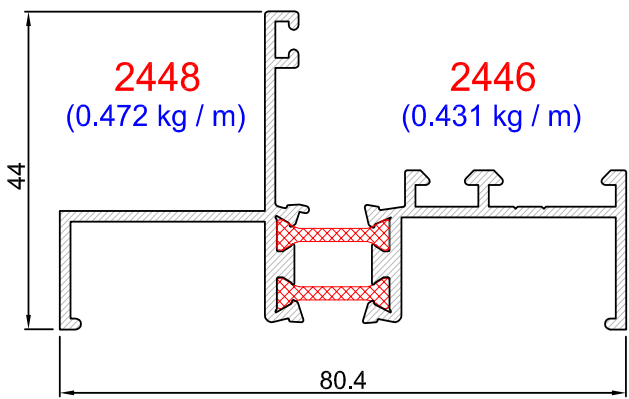
HEAVY DUTY PROFILES (2.1mm THICK)



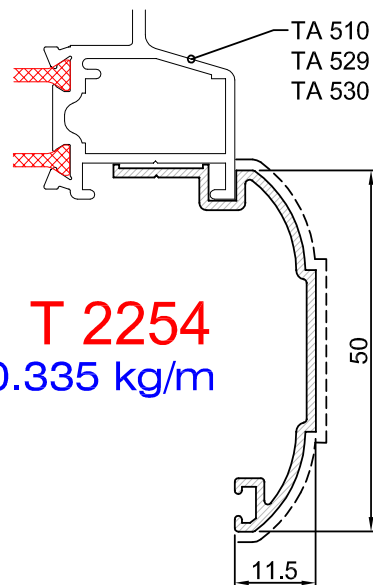
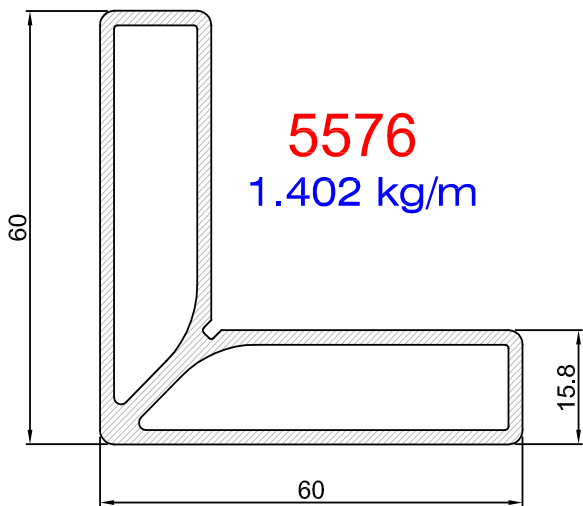
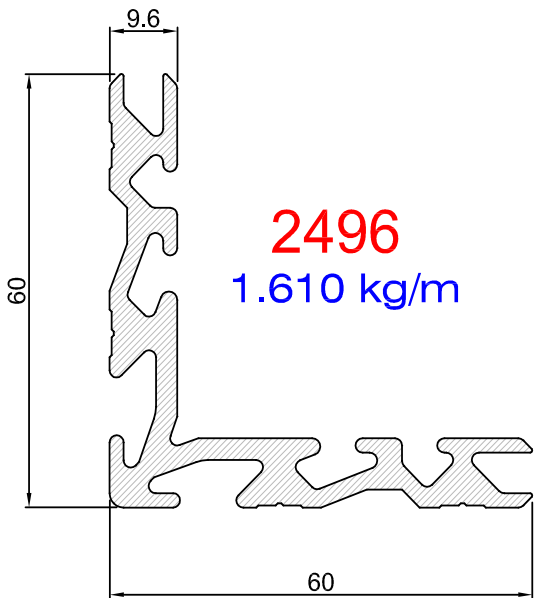
TA 600
2.314 kg/m



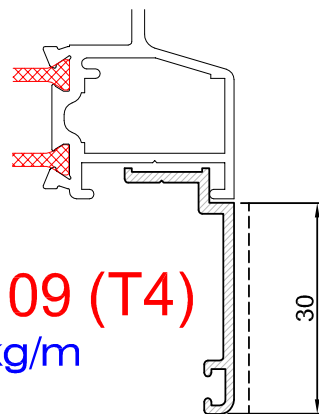
TA 610
1.639 kg/m



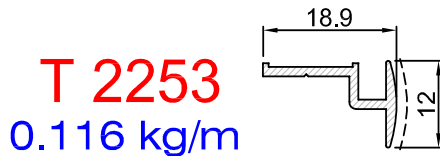
T 542 (T4)
0.998 kg/m



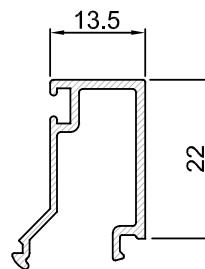
T 2254
0.335 kg/m



T 3109 (T4)
0.214 kg/m



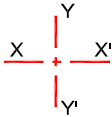
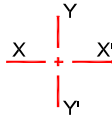
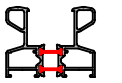
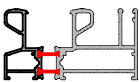
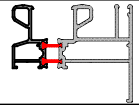
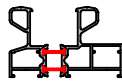
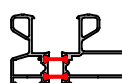
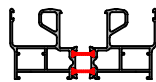
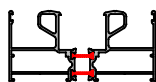
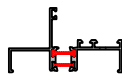
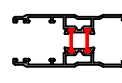
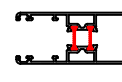
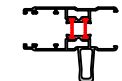
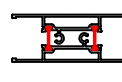
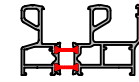
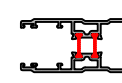
T 2253
0.116 kg/m



T 2283 (T4)
0.235 kg/m

THERMAL BREAK SLIDING SERIES
SECTIONS MOMENT OF INERTIA

ECO - 500

	Sec. No.	Ixx' (CM ⁴)	Iyy' (CM ⁴)			Sec. No.	Ixx' (CM ⁴)	Iyy' (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						



