WINDLOCH

WS 75

Innovation with the environment in mind
Building a cleaner future

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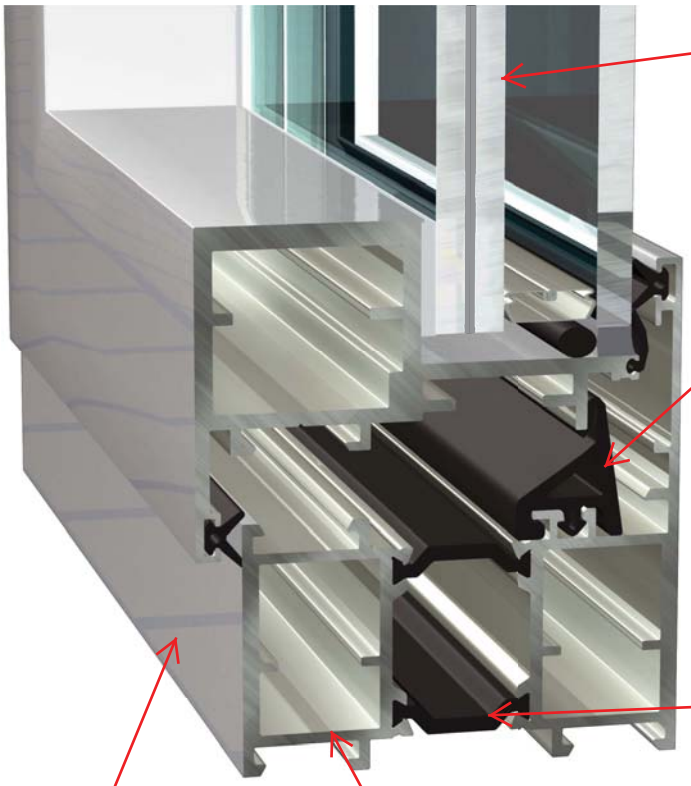
WS 75 Quality in every detail



From impact to acoustical to thermal requirements, we offer a solution for every challenge.

Trelleborg Sealing material developments from Trelleborg Sealing Solutions include an EPDM that provides a unique combination of outstanding elasticity with unrivaled compatibility in hydraulic fluids, a perfluoroelastomer that offers best in class thermal stability and an innovative lightweight silicone material.

Insulating strips made of polyamide PA 66 are made to absorb moisture from the environment during the lifetime of the windows. This thermal break enhancement meets the most demanding requirements.

Keymark's 2 step automated anodizing system as it is one of the most advanced aluminum anodizing systems in the industry. Keymark is also a certified member of PPG's distinguished Certified Applicator Program (CAP) and their powder coating capabilities are unmatched in the industry.

Our profiles are extruded by Keymark Corporation, an american premier full service aluminum extrusion company. Keymark meets and exceeds the specifications required by the Aluminum Association. To ensure the strength and consistent quality of our profiles, the aluminum we used is a 6063 Alloy - T6 extrusion temper grade.

WS 75

The next generation of window performance.

Even though WINDLOCH LLC just formed in 2012 as a company, we have developed an aluminum profile systems that meet the highest standards. Our window systems are designed to meet architectural and technological demands well as the needs of any builder, for new or existing structures. It was imperative to WINDLOCH to create a system that meets requirements in all aspects from aesthetic, weather performance, durability, stability, acoustical and high thermal insulation. We offers a range of different surfaces, colors, glass, thermal, and acoustic insulation, as well as the possibility to customize the dimensions to fit your construction demands. Furthermore, our window systems include a full range of high quality fittings and accessories to complete any design.

Elegance and Style.
We designed this system with an invisible exterior sash frame, as a result the large glass area makes the exterior appearance very elegant. The WINDLOCH system leaves no wish regarding form, color, and size of your window unfulfilled.

Outstanding stability.
Aluminium is a one of the best materials for architectural glazing products, it has practical advantages over other materials, exceeding in; high stability, light weight, resistance to corrosion and because of low maintenance, very cost efficient

Exceptionally economical.
The frame and sash have multiple chambers and are thermally separated. Combined with a high thermal performance glass makes the WINDLOCH WS 75 a very energy-efficient window system.

FROM START TO FINISH

Our services are designed to provide a high level of support at every stage of your project

Consulting Services:
Evaluate job specific conditions.
Make recommendations of solutions.

Support:
Suppy detail drawings, specs, and engineering.
Provide rough estimates

Planning
Supply shopdrawings.
Guide customer through permit process.

Customer Service 24/7
Assist with placing material order.
Assist with material and color selections.
Help find solutions for field conditions.

Customer Care
Assist with warranty issues.

OUR PARTNERING COMPANIES

ATI - Testing Institute

Aluminum Extrusions

Keymark CORPORATION

Hardware

GIESSE®

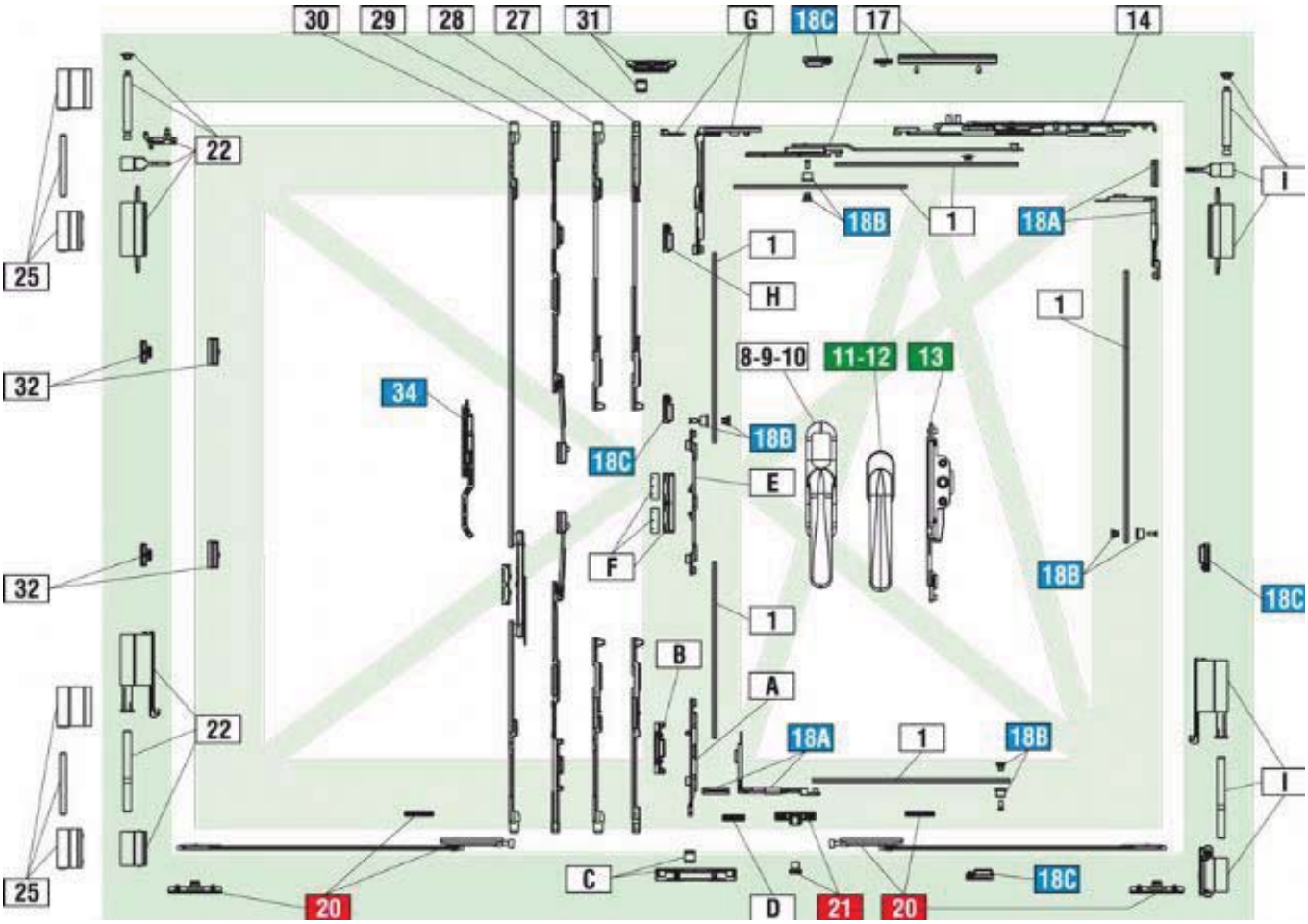
Rubber Gaskets

TRELLEBORG

VHB Tape

3M

Hardware Components



1	Connection Rod
A	Pin
B	Antifall Striker
C	Double Striker
D	Sash Supporting Element
E	Drive Rod
F	Mishalding Device Safety Striker
8	Cremone
13	M180 Mechanism
11	Window Handle
G	Corner Cleat
H	Adjustable Striker
14	Tilt and Turn Arm
I	Futura Tilt and Turn Window Hinges
17	Additional Arm
18A	Secondary Corner Cleat
18B	Fixed Pawl
18C	Adjustable Striker
19	Anti-Intrusion Device
20	Limiter Stay
21	Sash Holding Device
22	Hinges for Adjacent Side Hung Window
25	Flash Base Hinges
27	GIAP Bolt
28	Adjustable Bolt
29	INCA Bolt
30	Two Way Bolt
31	Single Striker
32	Burglar Bolt
34	Micro-Ventilation

Quality solid, durable mechanisms, designed to enhance the performance of our windows.

Bridge 2 Hinge

Suitable for installation where there is extra crosswise stress on the pin axis. BRIDGE 2 has a removable pin (burglar proof)

Capacity: 2 Hinges: 198 lbs
3 Hinges: 220 lbs

3rd Leaf Flash Hinge

Adjustable hinge for aluminum frame open joint doors and windows. Equipped with a forged stainless steel burglar-proof pin.

Capacity: 2 Hinges: 165 lbs
3 HingesL 187 lbs

3D Tilt & Turn Hinge

The Futura 3D 130 Tilt & Turn is classified for 287 lbs. Windows weighing up to 309 lbs can in any case be prepared.

Prima Key Capture Cremone Tilt & Turn

Specific cremone handle for opertaing tilt & turn mechanisms, in login version. The key provided allows the user to select only bottom-hung opening of the window but not complete opening. 90° and 180° rotation of the handle with snap positioning.

LGC Arm T2 130 Micro Ventilation

T2 tilt & turn arm with dedicated micro - ventilated pawl and striker. Operation is extremely simple. With the cremone handle at:

- 0 degree the pawl is released (window-closed).
- 90 degree the pawl is released & bottom hung operation is possible (arm released).
- 135 degree the pawl is retained by the micro-ventilation striker (arm locked).
- 180 degree the pawl is released & window can be opened (arm locked).

Restrictor / Additional Arm Tilt & Turn

The additional arm is used on sashes wider than 1,000 mm (39.37”) and fitted to the upper cross beam on the opposite side to the arm (corner drive side), preventing an excessive leverage during tilt opening which could otherwise impair window operation.

Fixed Connecting Joint & Adjustable Single Striker

Fixed connection joint, to be coupled to the adjustable striker, necessary to create a locking point.

Our windows are built to withstand the elements of nature and noise pollution.

Acoustical sound and noise barrier
More than ever before we are experiencing noise disturbances in our work and personal lives. As a result, noise pollution has become one of the main causes of many illnesses. Not only can noise cause hearing damage but it can also have long term effects on our psyche. We came to realize that a peaceful and undisturbed environment is an important part of our daily lives and because of this we designed our windows to have outstanding protection against noise pollution. To achieve this we seal our windows air tight by using three layers of gaskets.

Peace and Comfort
Thermal comfort is important both for one's well-being and for productivity. Rooms need to encourage emotional well being and the temperature of a room directly affects our feeling of comfort and protection.

TEST RESULTS

	U-Factor	SHGC	VT
Casement	0.38	0.31	0.56
Tilt&Turn	0.38	0.31	0.56
Total Combined Product	0.38	0.31	0.56

	Casement CRF	Tilt&Turn CRF	Overall Opening CRF
Frame	60	60	--
Glass	71	71	--
Total Product	60	60	60

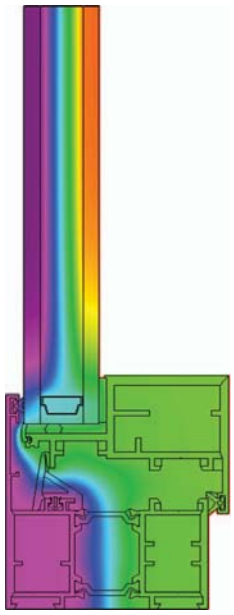
Test Institute: ATI

Thermal Test Report:

Report No.:C4735.01-116-45
Test Date:12/10/12

Simulation Specimen Description

System: WS 75
Type: Casement and Tilt/Turn Assembly
Glazing Description: $1\frac{1}{8}$" Overall IG Unit Consisting of:
$\frac{1}{4}$" PPG Solarban 60 (#2,e 0.035) Outer Layer
$\frac{5}{8}$" Gap - 90% Argon Filled with aluminum spacer
$\frac{1}{4}$" Clear Inner Layer



Modeling Conditions:

	U-Factor Calculation:	CRF Analysis:
Exterior Air Temperature:	-0.4F°	-0.4F°
Exterior Wind Velocity:	12.3 mph (Perpendicular Flow)	15 mph (Perpendicular Flow)
Interior Air Temperature:	69.8F°	69.8F°

Acoustical Test Report:
Report No.:C4711.01-113-11
Test Date:01/14/13 and 01/15/13

Summary of Test Reports			
Data File No.	**Glazing Option (Nominal Dimensions)**	**STC**	**OITC**
C4711.01A	$1\frac{1}{16}$" IG ($\frac{1}{4}$" Heat Strengthened exterior, $\frac{1}{2}$" air space, $\frac{5}{16}$" Heat Strengthened interior)	**38**	**33**
C4711.01C	$1\frac{7}{16}$" IG ($\frac{1}{4}$" Heat Strengthened exterior, $\frac{5}{8}$" air space, $\frac{9}{16}$" Laminated interior) Glass temperature 75F°	**41**	**35**
C4711.01D	$1\frac{1}{8}$" IG ($\frac{1}{4}$" Heat Strengthened exterior, $\frac{5}{8}$" air space, $\frac{1}{4}$" Heat Strengthened interior)	**35**	**28**

City of New York Department of Health, Fall Prevention Program:
Chapter 12-11, Specifications for Window Guard Other Than Double Hung Windows.
Compliance Statement: Results obtained are tested values and were secured by using the designated test method.
City of New York Department of Health, Fall Prevention Approval Number: HDLD #04-06-2013

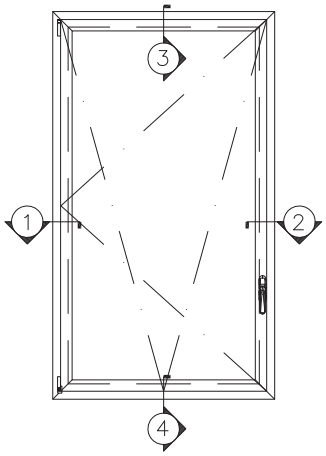
Title of Test	Basics	Results	Allowed
Life Cycle 1 (Test Specimen #1)			
Operating Force	ASTM E 2068	Maintained motion: 22 N (5 lbf)	135 N (30 lbf) max
Air Leakage, infiltration at 300 Pa (6.27 psf)	ASTM E 283	<0.01 cfm / ft2	<0.10 cfm / ft2 max
Water Penetration, at 960 Pa (20.05 psf)	ASTM E 331	Passed	No Leakage
Sash / Vent Cycling, 1250 cycles	AAMA 910	Casement: Passed Dual Action: Passed	No Damage
Locking Hardware Cycling, 1250 cycles	AAMA 910	Casement: Passed Dual Action: Passed	No Damage
Misuse Testing			
Ventilator Vertical Load Test, at 445 N (100 lbf)	AAMA 910	Passed	No Damage
Stabilizing Arm Load Test, at 890 N (200 lbf)		Passed	No Damage
Cleaning Position Vertical Load Test, at 445 N (100 lb)		Passed	No Damage
Life Cycle 2			
Sash / Vent Cycling, 1250 cycles	AAMA 910	Casement: Passed Dual Action: Passed	No Damage
Locking Hardware Cycling, 1250 cycles	AAMA 910	Casement: Passed Dual Action: Passed	No Damage
Operating Force	ASTM E 2068	Maintained motion: 58 N (13 lbf)	135 N (30 lbf) max
Air Leakage, Infiltration at 300 Pa (6.27 psf)	ASTM E 283	<0.01 cfm / ft2	<0.10 cfm / ft2 max
Water Penetration, at 720 Pa (15.04 psf)	ASTM E 547 ASTM E 331	Passed	No Leakage
Uniform Load Deflection, taken at horizontal impost + 1920 Pa (+40.10 psf) - 1920 Pa (-40.10 psf)	ASTM E 330	9.1 mm (0.36”) 8.9 mm (0.35”)	10.9 mm (0.43”) max 10.9 mm (0.43”) max
Uniform Load Deflection, taken between locks + 1920 Pa (+40.10 psf) - 1920 Pa (-40.10 psf)	ASTM E 330	<0.3 mm (0.01”) <0.3 mm (0.01”)	2.3 mm (0.09”) max 2.3 mm (0.09”) max
Uniform Load Structural, taken at horizontal impost + 2880 Pa (+60.15 psf) - 2880 Pa (-60.15 psf)	ASTM E 330	<0.3 mm (0.01”) <0.5 mm (0.02”)	5.8 mm (0.23”) max 5.8 mm (0.23”) max
Uniform Load Structural, taken between locks + 2880 Pa (+60.15 psf) - 2880 Pa (-60.15 psf)	ASTM E 330	<0.3 mm (0.01”) <0.3 mm (0.01”)	1.3 mm (0.05”) max 1.3 mm (0.05”) max

Title of Test	Basics	Results	Allowed
Forced Entry Resistance, Type B – Grade: 10	ASTM F 588	Passed	No Entry
Sash / Leaf Torsion, 90 N (20 lbf)		31.8 mm (1.25”)	96.0 mm (3.78”) max
Sash Vertical Deflection, 270 N (60 lbf)		<0.3 mm (0.01”)	20.1 mm (0.79”) max
Sash / Leaf Concentrated Load, Test on Latch Rail (Horizontal) 270 N (60 lbf)		0.8 mm (0.03”)	1.5 mm (0.06”) max
Sash / Leaf Concentrated Load, Test on Latch Rail (Vertical) 400 N (90 lbf)		4.6 mm (0.18”)	6.4 mm (0.25”) max
Vertical Concentrated Load, 270 N (60 lbf)		0.8 mm (0.03”)	1.0 mm (0.04”) max
Stabilizing Arm Load Test, 1780 N (400 lbf)		Passed	No Damage
Optional Performance (Test Specimen #1)			
Uniform Load Deflection, taken at horizontal impost +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)	ASTM E 330	 10.4 mm (0.41”) 10.7 mm (0.42”)	10.9 mm (0.43”) max 10.9 mm (0.43”) max
Uniform Load Deflection, taken between locks +2160 Pa (+45.11 psf) -2160 Pa (-45.11 psf)		 <0.3 mm (0.01”) <0.3 mm (0.01”)	 2.3 mm (0.09”) max 2.3 mm (0.09”) max
Uniform Load Structural, taken at horizontal impost +3240 Pa (+67.67 psf) -3240 Pa (-67.67 psf)		 1.3 mm (0.05”) 1.0 mm (0.04”)	 5.8 mm (0.23”) max 5.8 mm (0.23”) max
Uniform Load Structural, taken between locks +3240 Pa (+67.67 psf) -3240 Pa (-67.67 psf)		 <0.3 mm (0.01”) 0.3 mm (0.01”)	 1.3 mm (0.05”) max 1.3 mm (0.05”) max
Optional Performance (Test Specimen #2)			
Uniform Load Deflection, taken at horizontal impost +3360 Pa (+70.18 psf) -3360 Pa (-70.18 psf)	ASTM E 330	 10.4 mm (0.41”) 8.4 mm (0.33”)	 10.9 mm (0.43”) max 10.9 mm (0.43”) max
Uniform Load Deflection, taken between locks +3360 Pa (+70.18 psf) -3360 Pa (-70.18 psf)		 <0.3 mm (0.01”) <0.5 mm (0.02”)	 2.3 mm (0.09”) max 2.3 mm (0.09”) max
Uniform Load Structural, taken at horizontal impost +5040 Pa (+105.26 psf) -5040 Pa (-105.26 psf)		 2.5 mm (0.10”) 1.5 mm (0.06”)	 5.8 mm (0.23”) max 5.8 mm (0.23”) max
Uniform Load Structural, taken between locks +5040 Pa (+105.26 psf) -5040 Pa (-105.26 psf)		 <0.3 mm (0.01”) 0.3 mm (0.01”)	 1.3 mm (0.05”) max 1.3 mm (0.05”) max

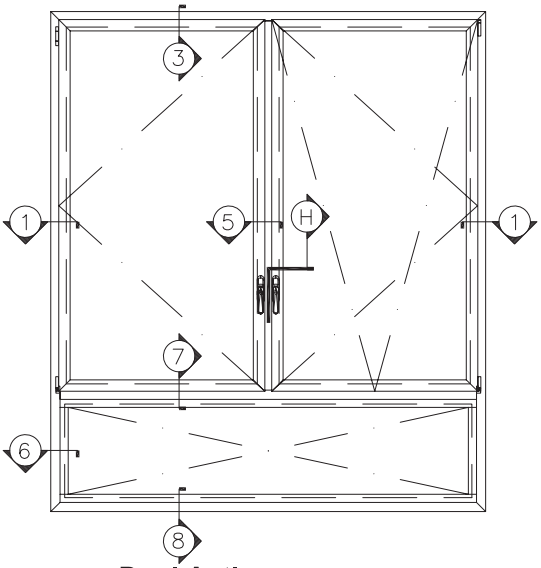
Test Specimen 1: No reinforcement was utilized
Test Specimen 2: Horizontal impost

Report No.: C5191.01 – 109 - 44
Test Dates: 01/18/13

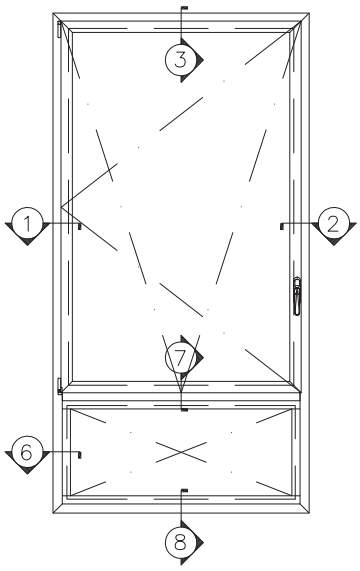
WINDOW SYSTEM 75 IS AVAILABLE IN THE FOLLOWING ASSEMBLY COMBINATIONS



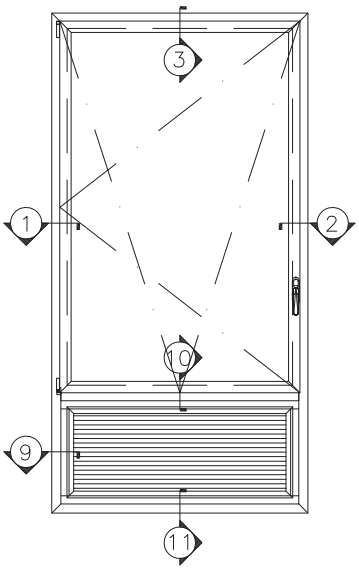
Casement/Tilt&Turn



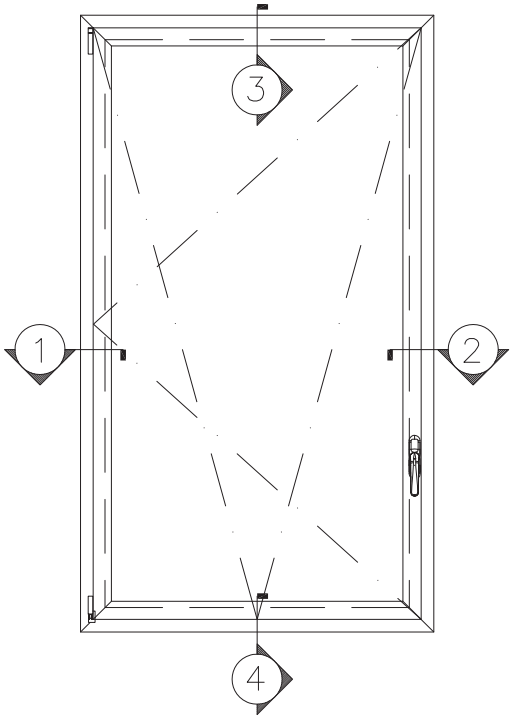
Dual Action
With Fixed below



Casement/Tilt&Turn
With Fixed below

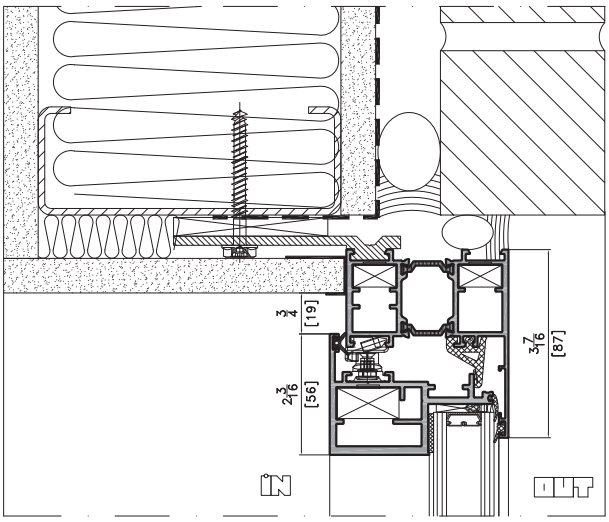


Casement/Tilt&Turn
With Louver below



Casement/Tilt&Turn

Section 3



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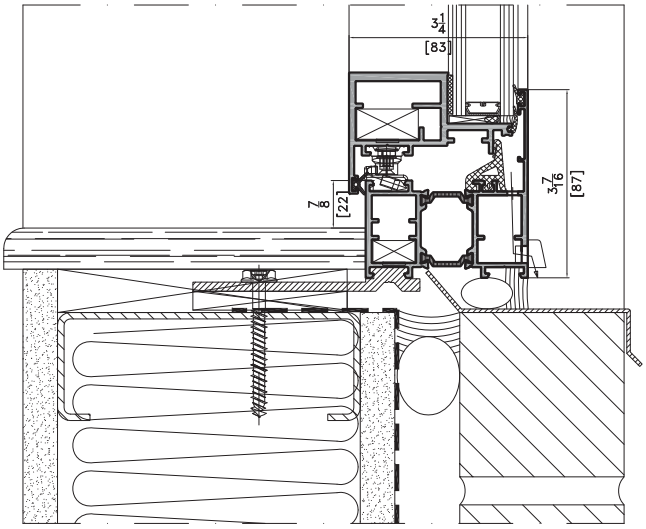

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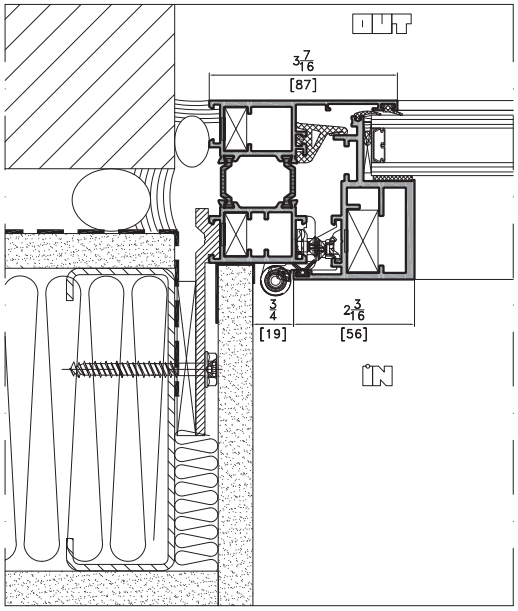

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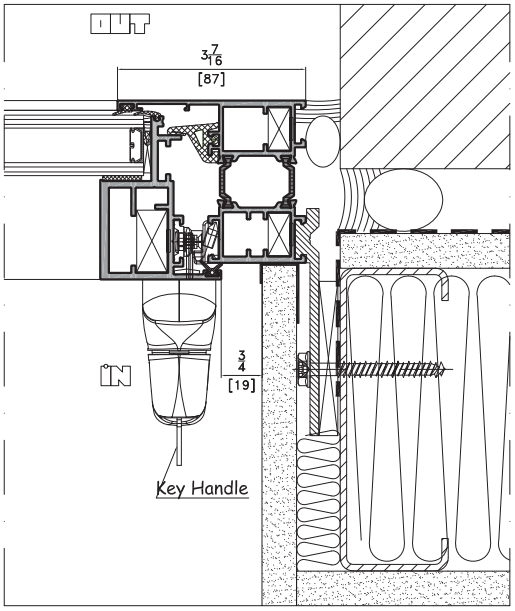
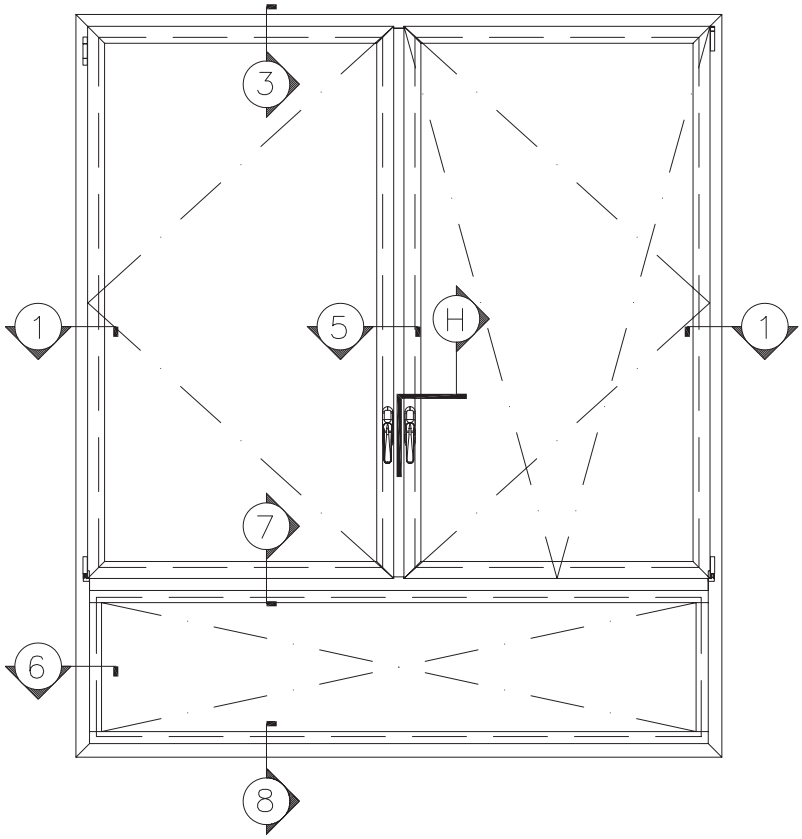
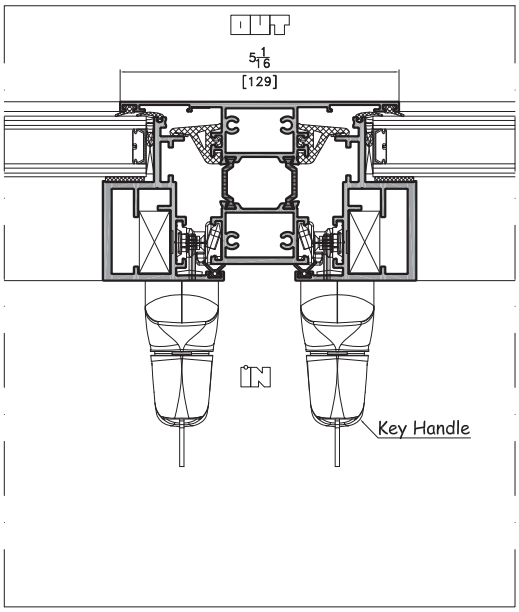




Dual Action
With Fixed below

Section 5



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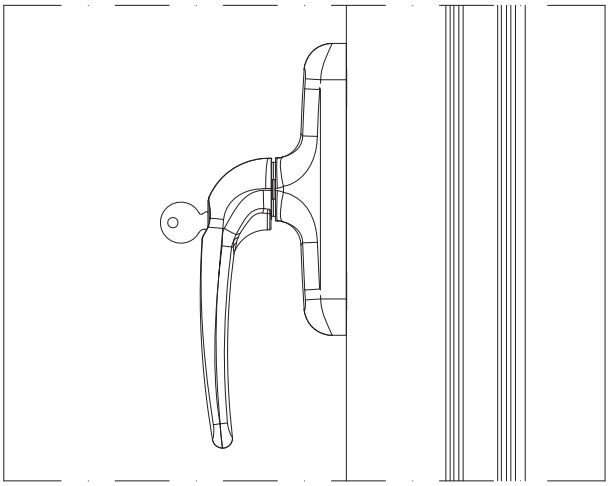

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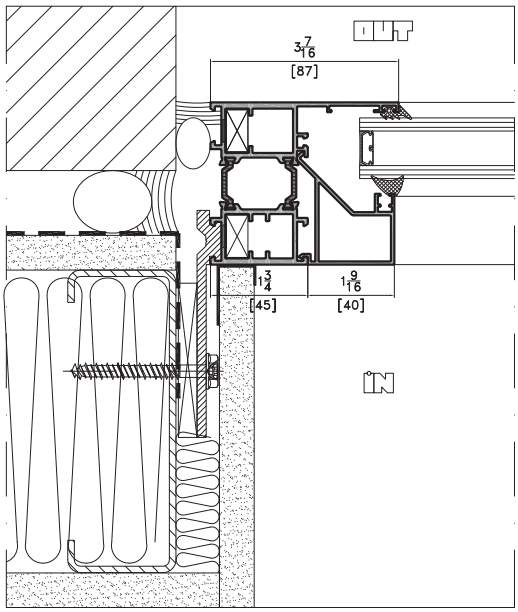

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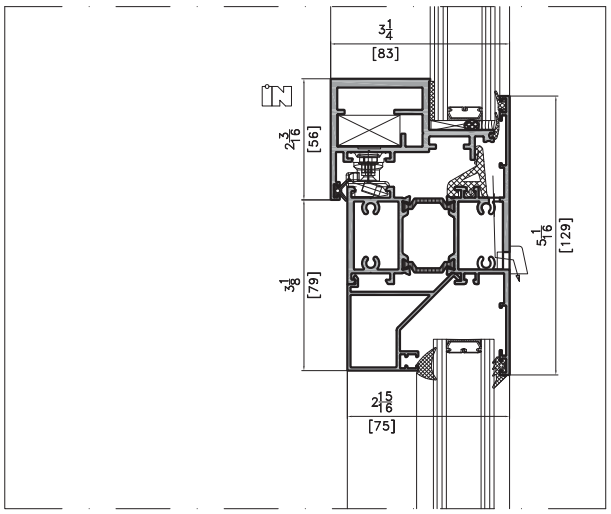

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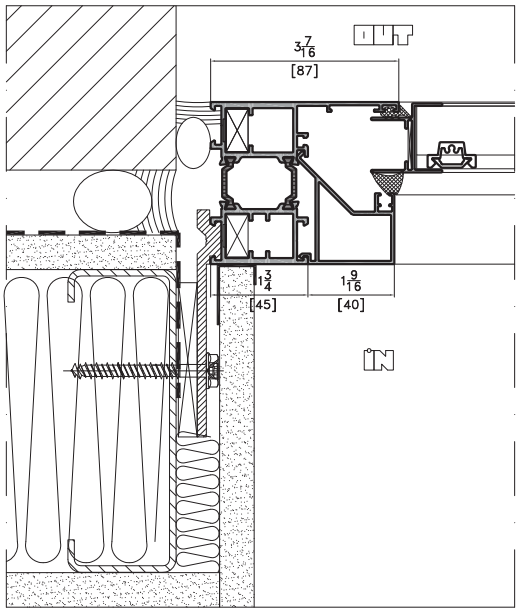
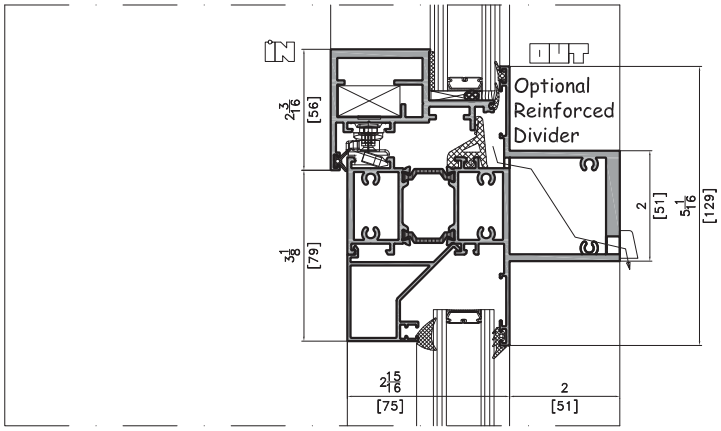


Section 7a



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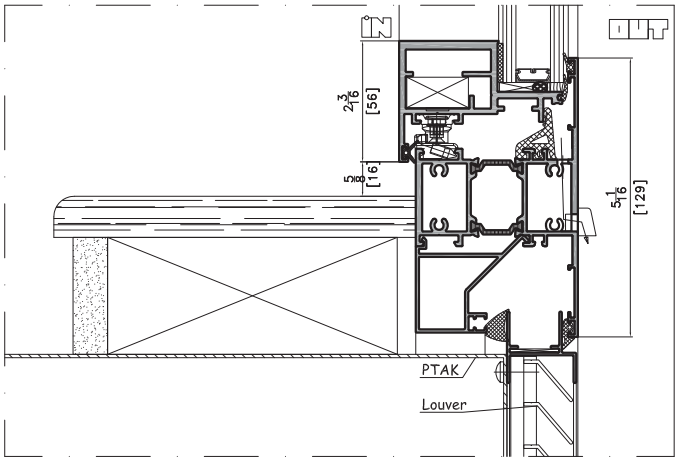

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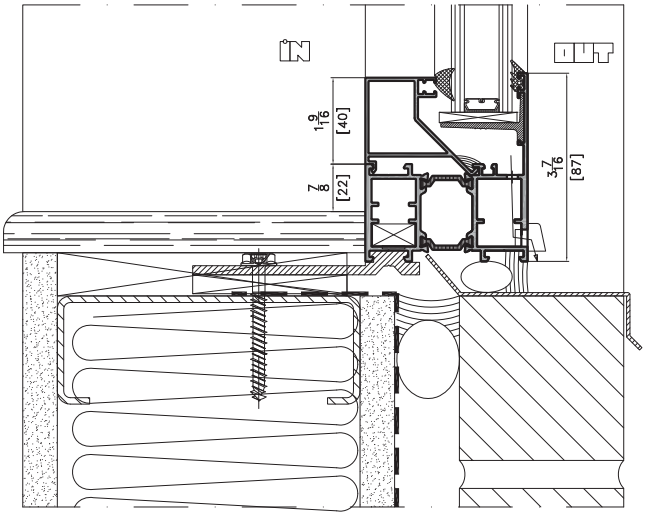

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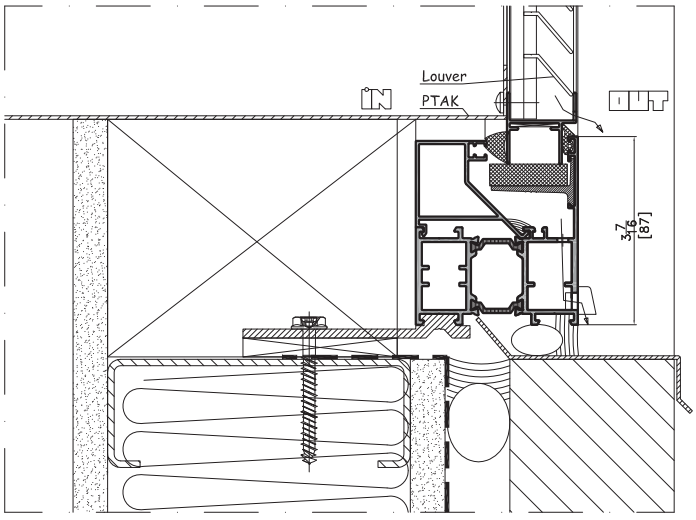
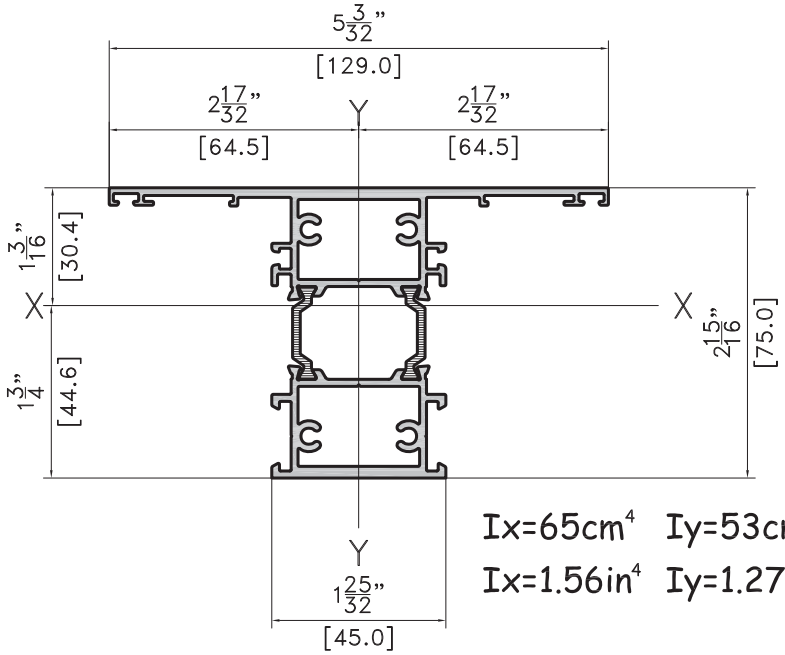


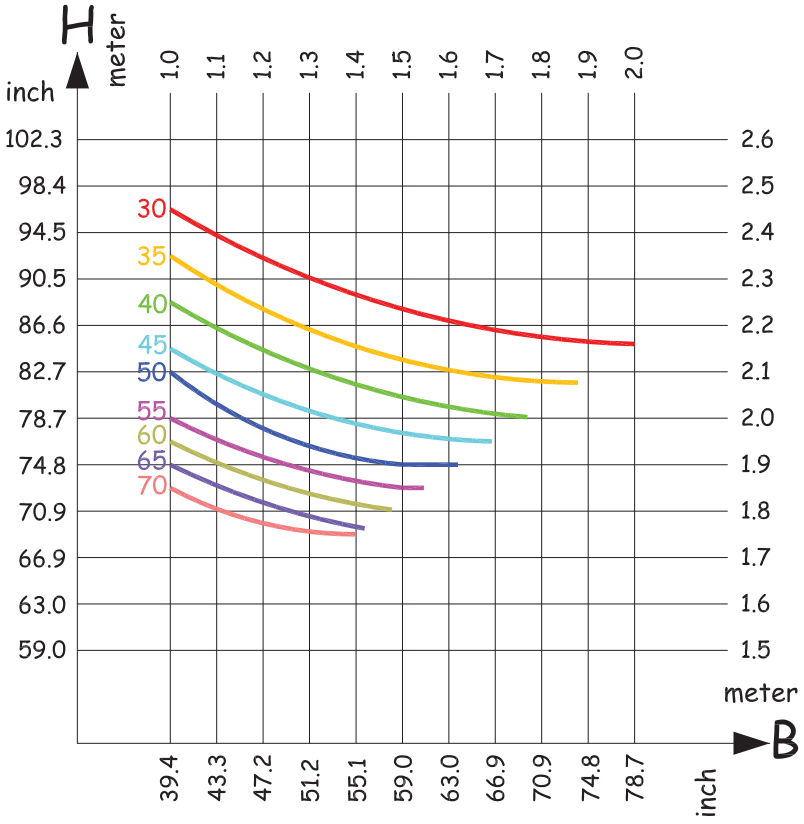
Wind Load Charts

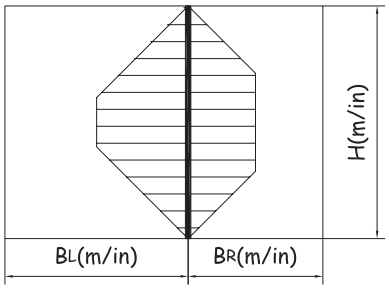


$I_x=65cm^4$ $I_y=53cm^4$

$I_x=1.56in^4$ $I_y=1.27in^4$

744551

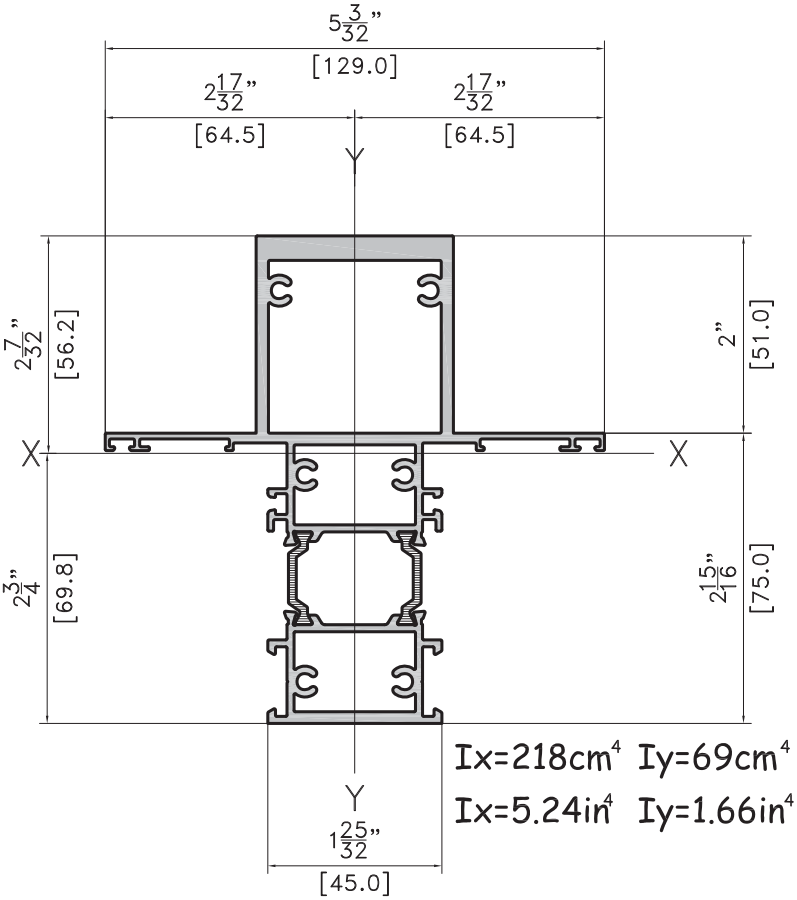




psf	N/m²
30	1436
35	1676
40	1915
45	2155
50	2394
55	2633
60	2873
65	3112
70	3352

Note:
All values are based of deflection of L/175 or $\frac{3}{4}$"max.

$$B=\frac{B_L+B_R}{2}$$



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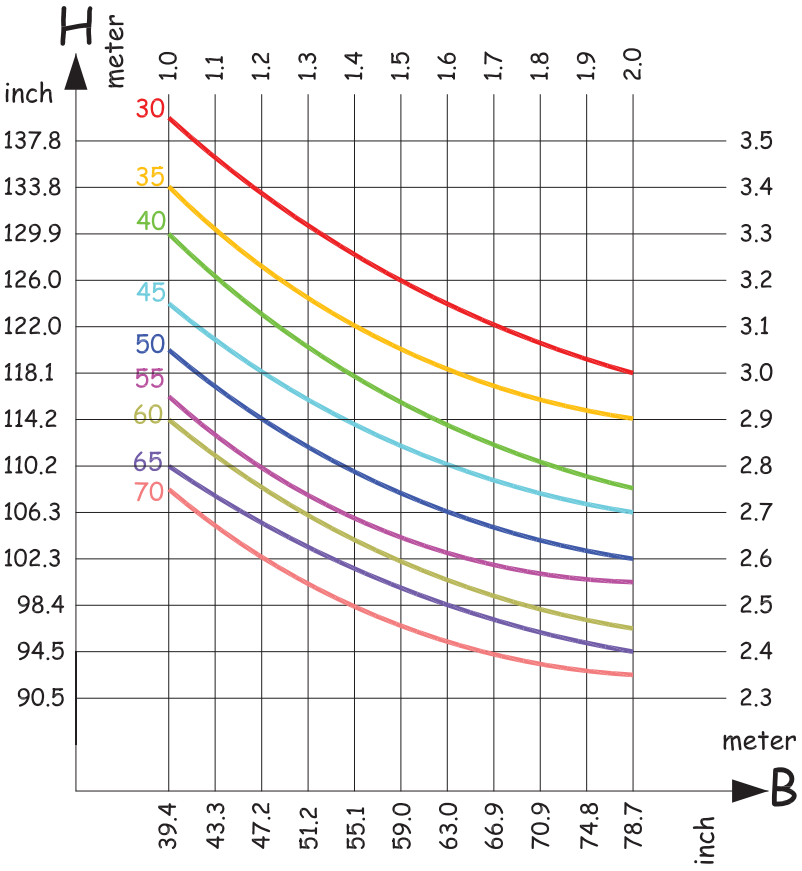

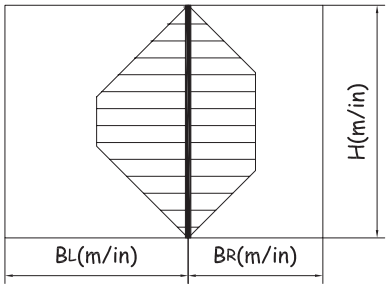

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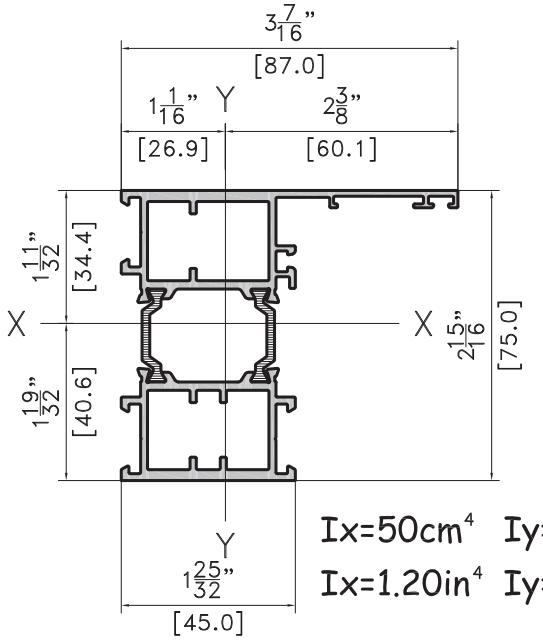
All values are based of deflection of L/175 or $\frac{3}{4}$"max.

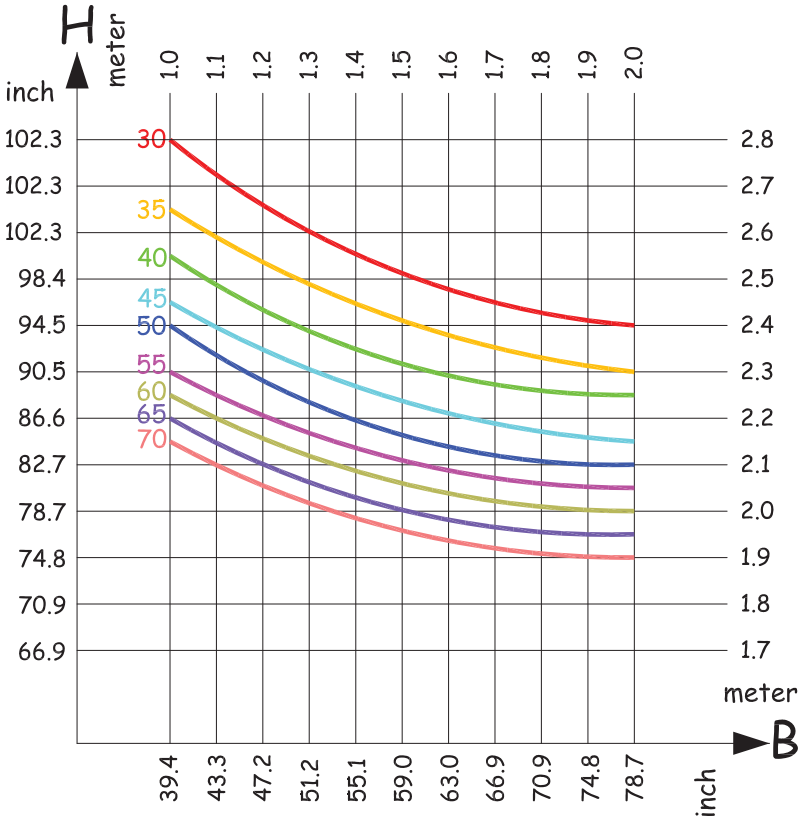
$$B=\frac{B_L+B_R}{2}$$

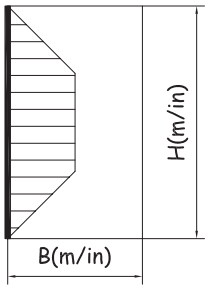


Ix=50cm^4 Iy=29cm^4

Ix=1.20in^4 Iy=0.70in^4

754501





psf	N/m²
30	1436
35	1676
40	1915
45	2155
50	2394
55	2633
60	2873
65	3112
70	3352

Note:
All values are based of deflection of L/175 or $\frac{3}{4}$"max.

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