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2030

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وقادرون على تنفيذ رؤية المملكة 2030 بكل اقتدار

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رسالتنا

رسالتنا تتمثل في تقديم مشاريع فريدة عالية الجودة تلبي احتياجات وتطلعات عملائنا , نسعى جاهديين لتحقيق رضا العملاء من خلال توفير بيئات سكنية وتجارية مبتكرة ومريحة تعكس أحداث الاتجاهات وتضمن لهم أسلوب حياة متميز ومريح .

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نتطلع إلى التوسع في المشاريع المستقبلية المتطورة تماشيا مع رؤية المملكة 2030 التي تسعى إلى تطبيق التكنولوجيا والطاقة البديلة صديقة البيئة وتنفيذ الأفكار الذكية في مشاركة الشركات الناجحة لكي نصل لمستوى عالمي في تقديم الخدمات بأعلى جودة واحترافية .

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في كل مشروع نقوم بتنفيذه سواء في التصميم
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في كل جانب من جوانب عملنا , لنكون عامليين إيجابيين
في المجتمع والبيئة

المهنية

نضع المهنية في صميم عملنا , من خلال تعاملنا
الشفاف والمحترف مع عملائنا وشركائنا

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التسويق marketing	المخازن والمستودعات stores and are houses	المخاطر Risks		الديكور personnel affairs
المكتب الفني technical office	متابعة التكاليف follow up costs			

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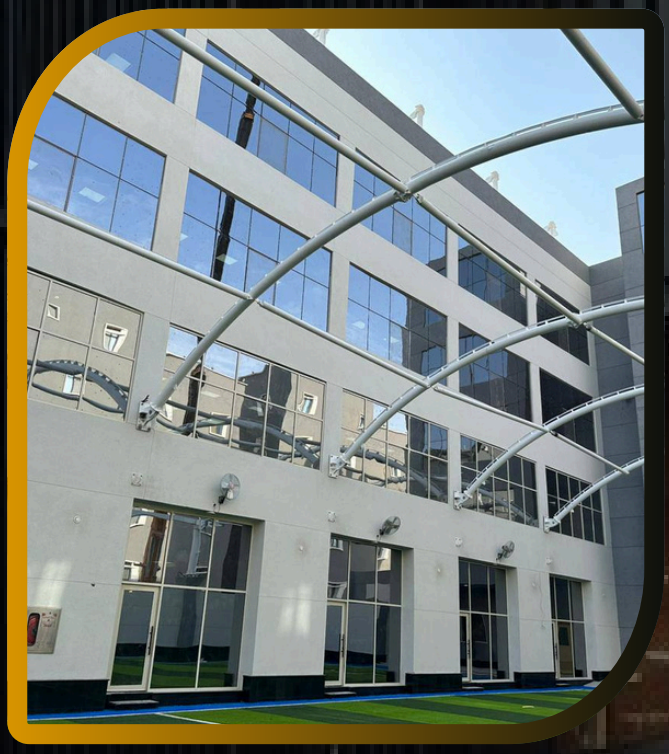

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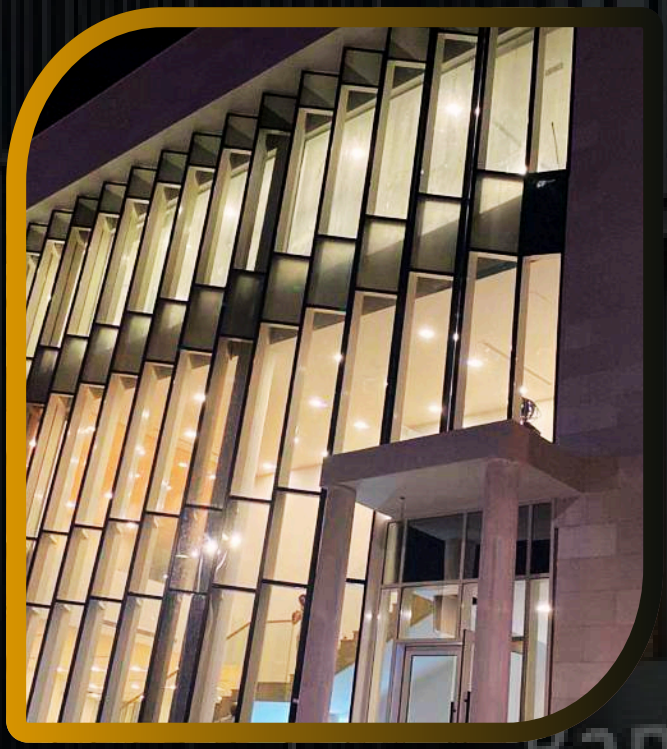

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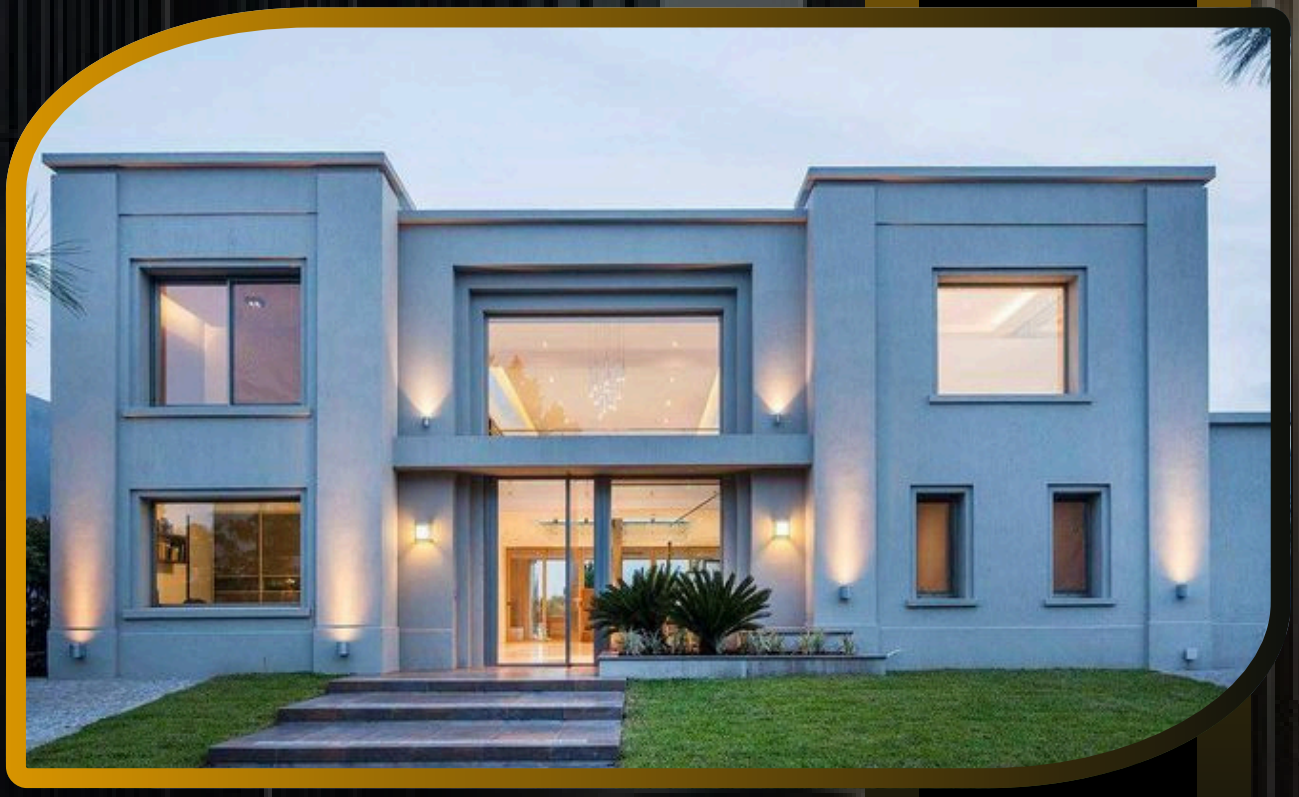

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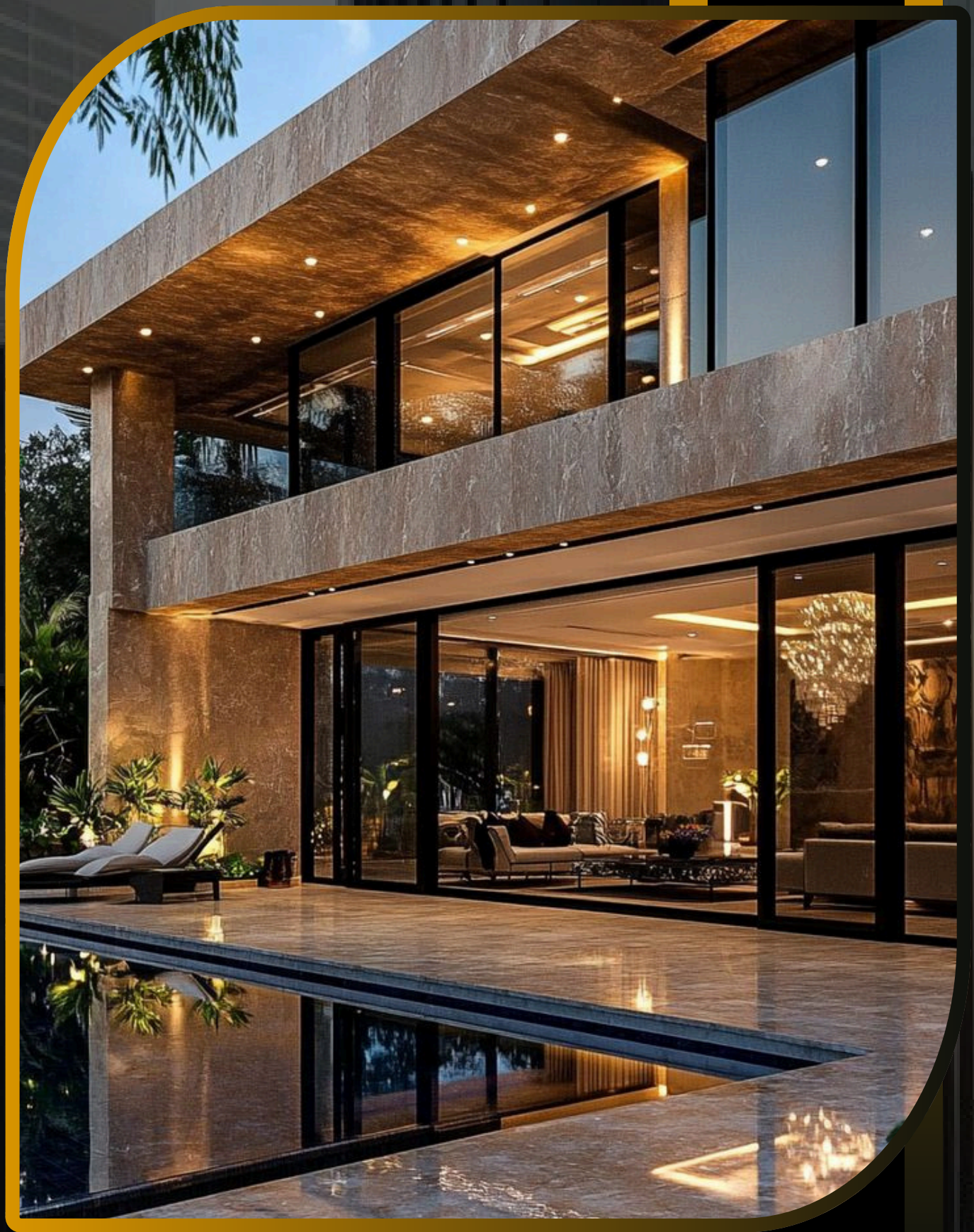

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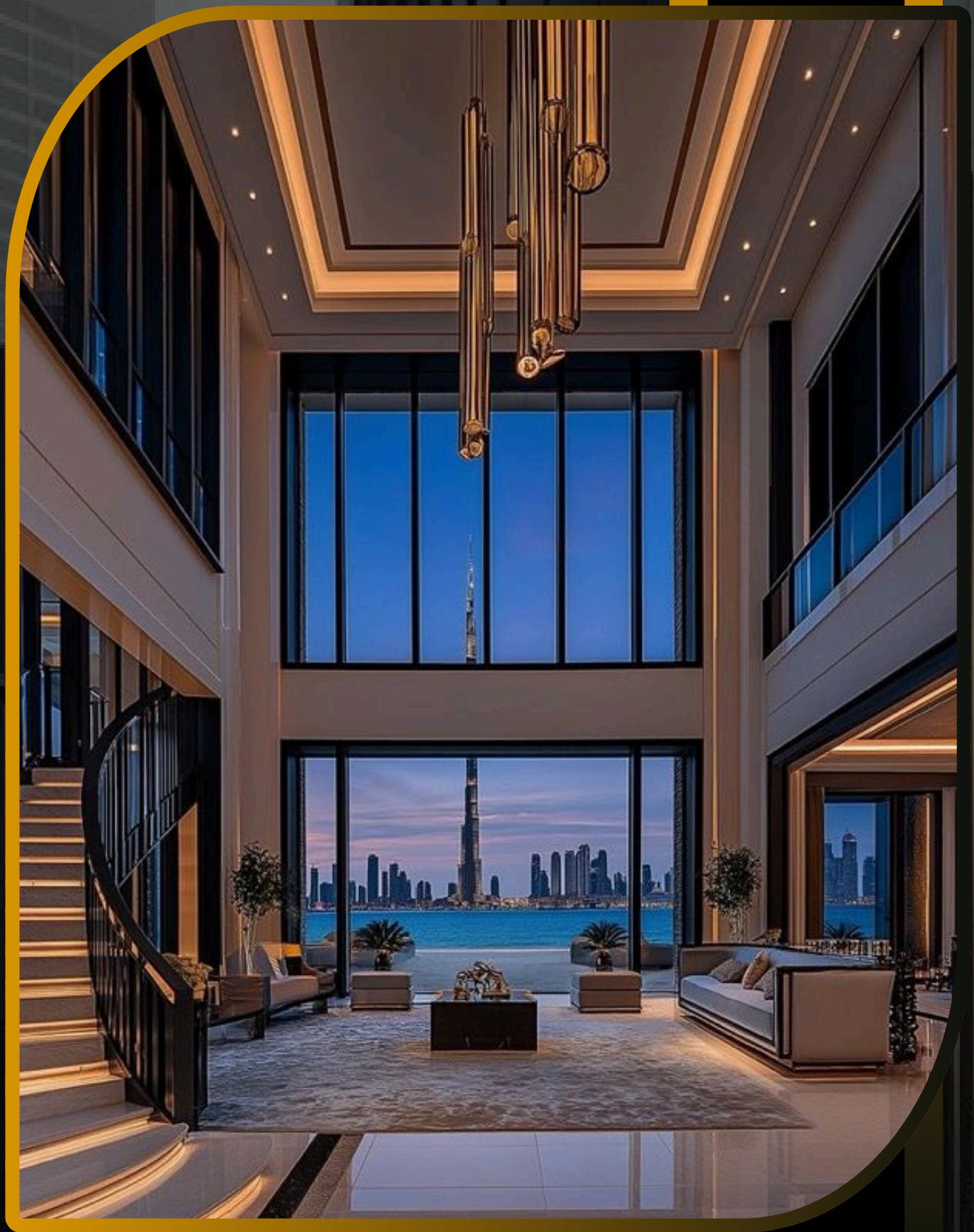

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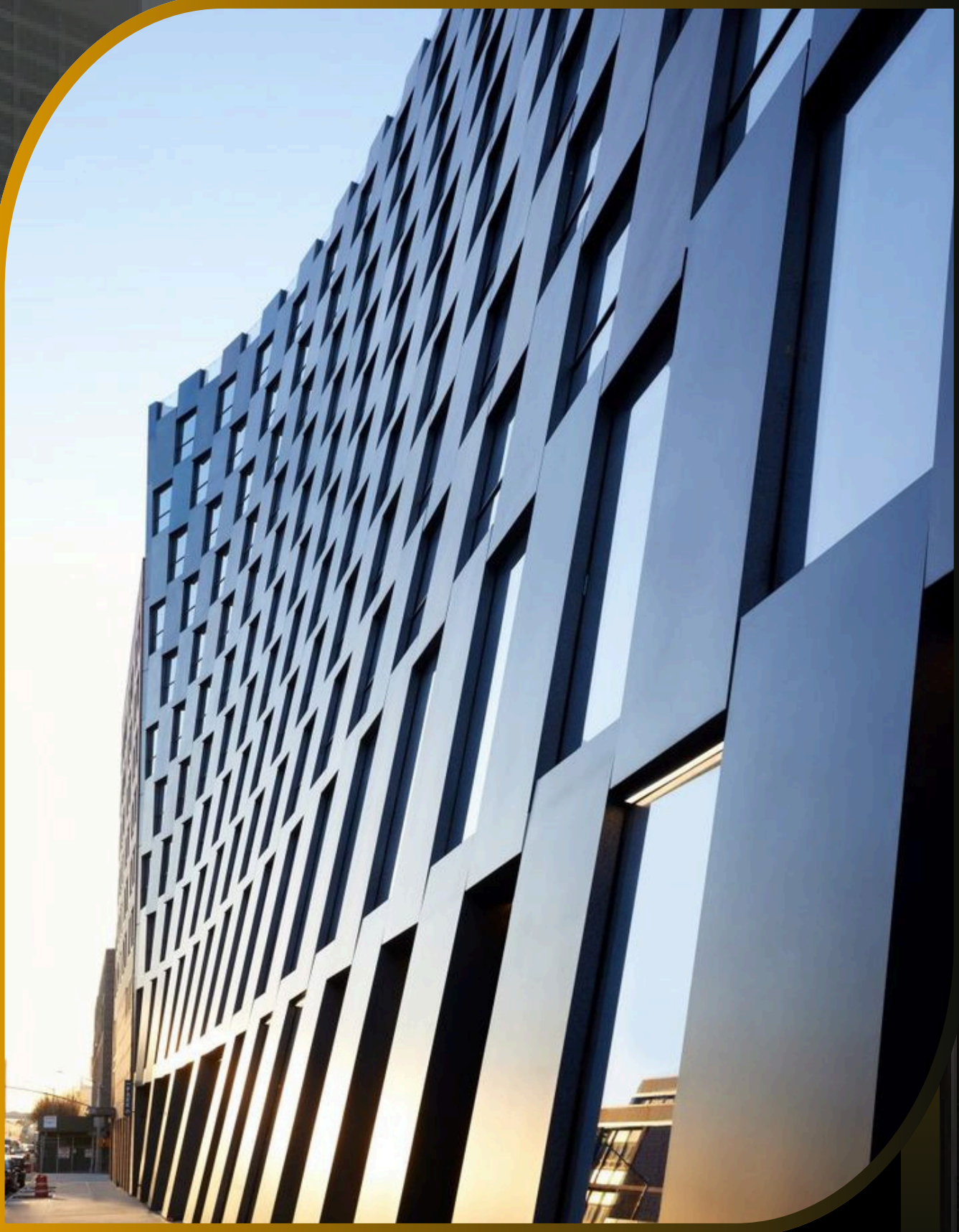

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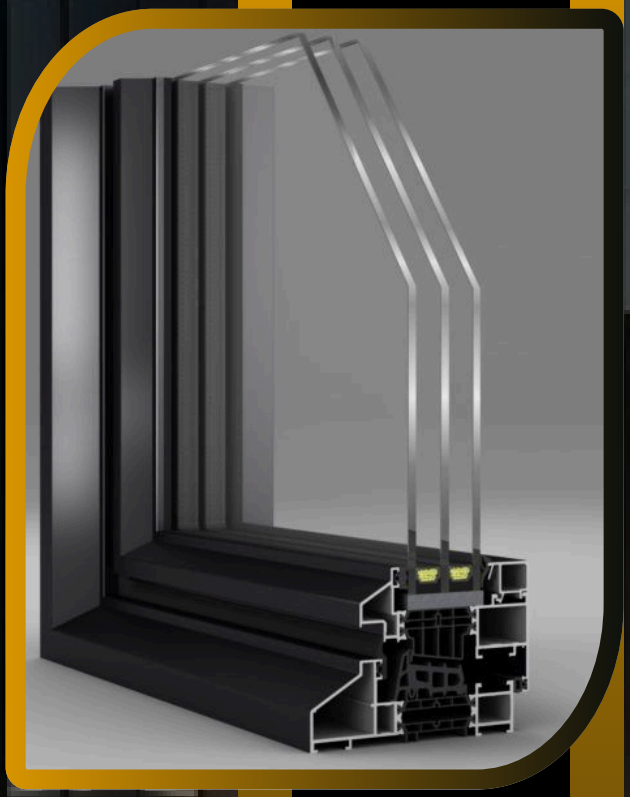

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Used machine

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SL.NO:1

Machine Name :

Company : Elumatec

Purpose : Alum Taping

SL.NO:2

Machine Name : End Miller

Company : Fomindustris

Purpose : Alum

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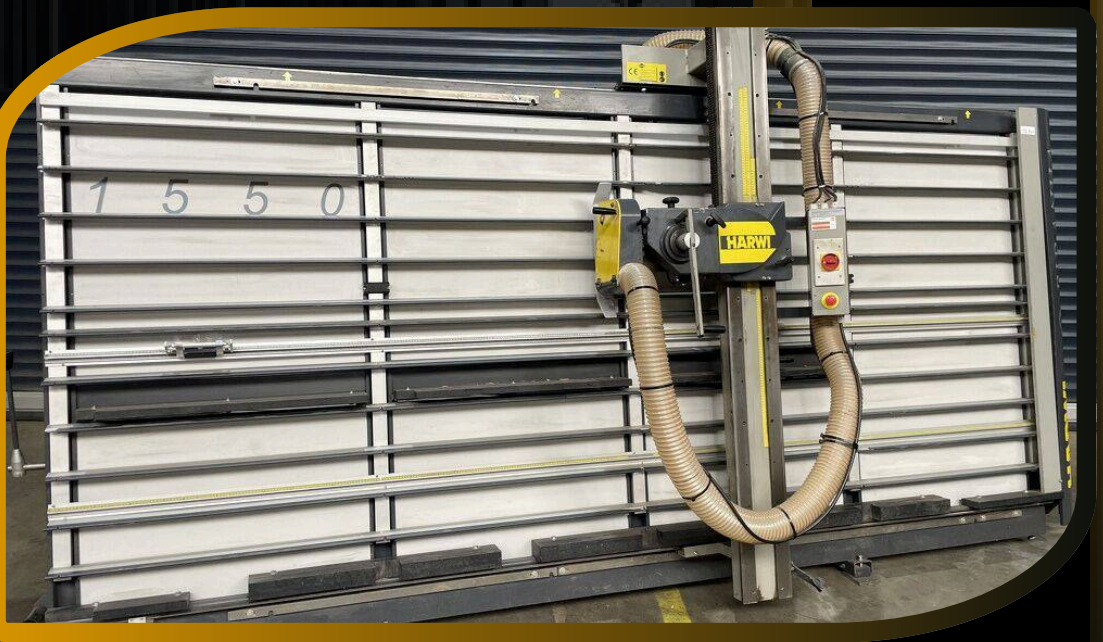
SL.NO:3

Machine name : single head
company : Aletch
Purpos : Alun Javiya Cutting



SL.NO:4

Machine Name : Vertical Machine
Company : Harwi
Purpos : Cladding Cutting

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SL.NO:5

Machine name : Router Machine
Company : Makita
Purpos : Alu crimping

SL.NO:6

Machine Name : single head
Company : alumatec
Purpos : Alu

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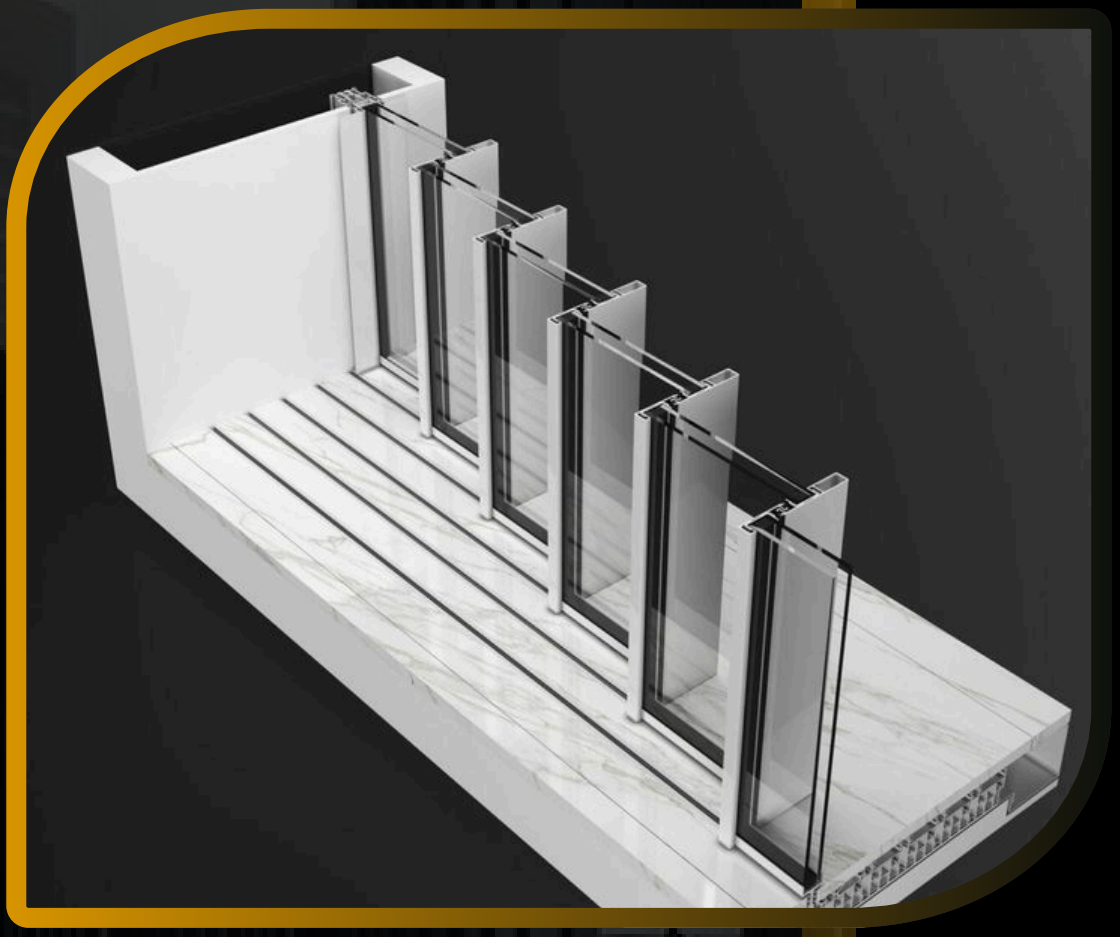

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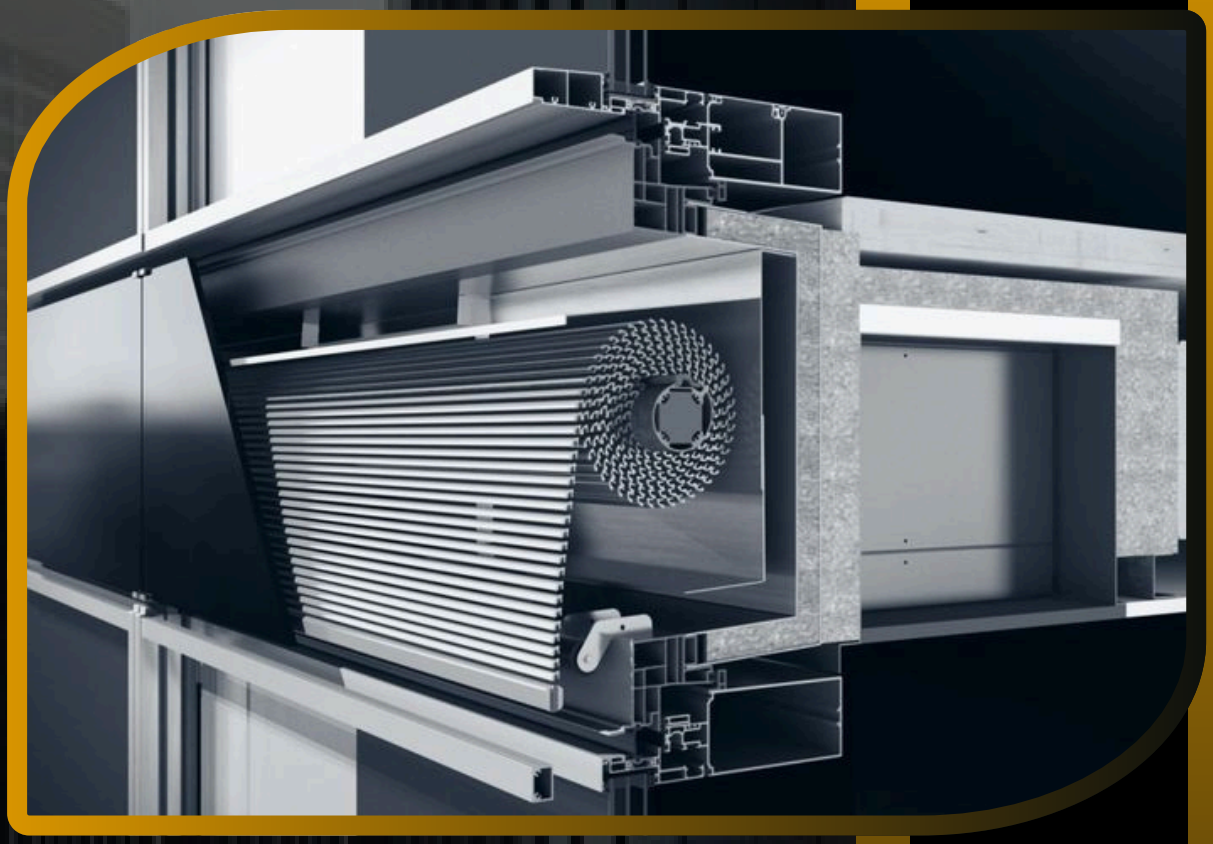

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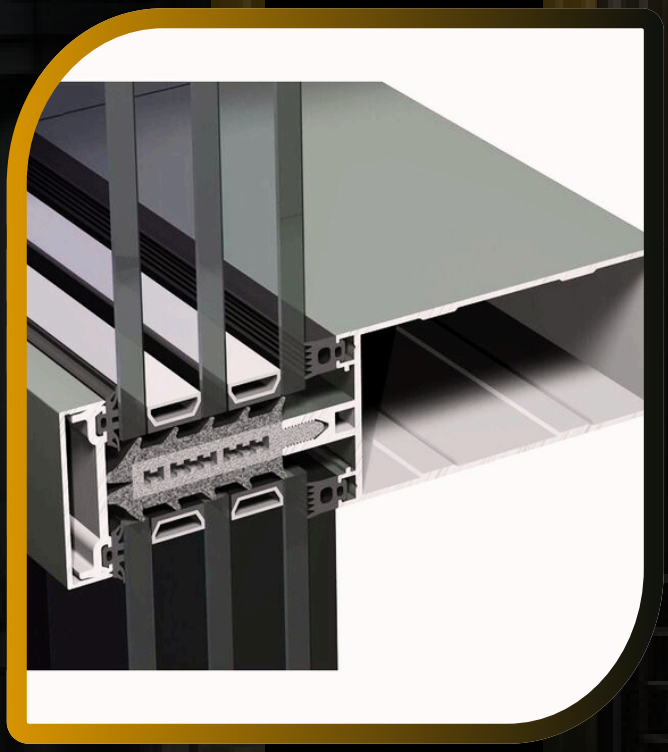

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Technical Services:

With the **local presence** of Guardian global TAC experts, the team is able to provide more value in the region to the entire value chain. We strive to provide technical services to our direct and indirect customers, which includes but are not limited to the glass processors, fabricators, glaziers, and architects through offerings such as:

1. Guardian Select™ Fabricator Program (from limited, to advantage, up to elite)

As **SunGuard** has grown, the Guardian Select Fabricator network has also grown. To provide resources, service and support more specifically aligned with the business needs of each fabricator, Guardian has introduced tiers within the Select program; Guardian **Select Advantage** and Guardian **Select Elite**.

We offer a program of certification for our most advanced coated products. Our team of experienced "Field Certification Engineers" can support the glass processor in becoming a "SunGuard Select™ Fabricator."

Guardian Select Fabricators who have been previously certified through the outgoing program become Guardian **Select Advantage Fabricators**. The **Guardian Select Advantage** Fabricator has medium to high capabilities when it comes to glass processing covering a range of processes from cutting, IGU, Heat Treatment, etc. while those companies with advanced capabilities and quality standards that can meet the Elite program parameters have the opportunity to become **Guardian Select Elite Fabricators**.

Guardian Select Elite Fabricator

The Elite program goes a few steps further. Open to all Guardian Select Fabricators who commit to the program parameters and meet the certification criteria and have the capacity to meet and maintain capability and quality standards, is the Guardian Select Elite Fabricator program.
Learn more: ***www.guardianglass.com/me/en/our-glass/become-our-partner/fabricator-program***

Guardian Select Optical Quality (SOQ)

The new specification has been developed, Select Optical Quality (SOQ), that mirrors Elite fabrication quality requirements.

GUARDIAN® GLASS
Select Optical Quality Specification

Find out more on guardianglass.com

GUARDIAN SUNGUARD
ADVANCED ARCHITECTURAL GLASS

PERFORMANCE CALCULATOR

January 5, 2017
By Alsheikh, Saeed
salsheikh@guardian.com

6mm Neutral 70 -16mm AS- 6mm Clear Glass

Make-up Name	Make-up Icon	Outboard Substrate & Coating	Inboard Substrate & Coating	Transmittance		Reflectance			U-Value	Shading Coefficient (sc)	Solar Heat Gain Coefficient (SHGC)	Color Rendering Index (R_a)
				Visible (τ_v %)	Solar (τ_e %)	Visible		Solar	Summer Day (W/m²·K)			
						ρ_v % out	ρ_v % in	ρ_e % out				
Default Make-up 01		ClimaGuard® HP Neutral 70 (Middle East) on Clear (Middle East)	Clear (Middle East)	67	46	12	12	16	1.73	0.62	0.54	94.7

Calculation Standard: NFRC 2010

Default Make-up 01

Outdoors

LITE	Clear (Middle East) Thickness = 6mm	#1 ----- #2 ClimaGuard® HP Neutral 70 (Middle East)
GAP	100% Air, 16mm (.630")	
LITE	Clear (Middle East) Thickness = 6mm	#3 ----- #4 -----

Total Unit (Nominal) = 1 3/32 in / 28 mm Slope = 90° Window Height = 1 meter

Estimated Nominal Glazing Weight: 28.74 kg/m²

Indoors

Important Notes

The performance values shown above represent NOMINAL VALUES for the center of glass with no spacer system or framing. Slight variations may occur due to manufacturing tolerances, point of manufacture, and type of instrumentation used to measure the optical properties. For configurations that include non-specular (diffuse) components, performance results cannot be verified and should only be used as a general indication of performance. For configurations which include ceramic frit coating, the actual values may vary significantly based upon the thickness and composition of the frit. For configurations with coatings laminated facing the PVB, there may be a noticeable color change. Guardian recommends a full size mock-up be approved. Calculations and terms in this report are based on NFRC 2010.

Please note that the THERMAL STRESS GUIDELINE is only a rough reference to the thermal safety of a glazing. Other factors such as the size of glass areas, shapes and patterns, glass thickness, glass damaged during shipping, handling or installation, orientation of the building, exterior shading, overhangs/fins that reduce wind speed, and areas with high daily temperature fluctuations can all increase the probability of thermal breakage. The results shown are not for any specific glazing installation and do not constitute a warranty against glass breakage.

Explanation of Terms

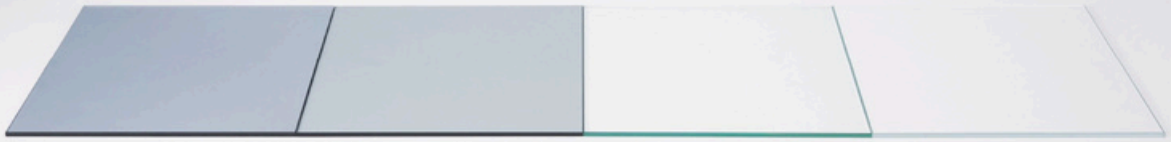
% Transmittance Visible or Light Transmittance (τ_v %) is the percentage of visible light at normal incidence (90° to surface) that is transmitted by the glass.

% Ultraviolet (UV) Transmittance (τ_{uv} %) is the percentage of ultraviolet light at normal incidence directly transmitted by the glass. Ultraviolet Light is defined as radiant energy from the sun having a wavelength range of 300 nm to 380 nm.

% Solar Energy Direct Transmittance (τ_e %) is the percentage of solar energy at normal incidence directly transmitted by the glass. Solar Energy is the radiant energy from the sun having a wavelength range of 300 nm to 2500 nm.

% Reflectance Visible Outdoors or Light Reflectance Out (ρ_v % out) is the percentage of visible light at normal incidence directly reflected by the glass back outdoors.

% Reflectance Visible Indoors or Light Reflectance In (ρ_v % in) is the percentage of visible light at normal incidence directly reflected by the glass back indoors.



GUARDIAN SUNGUARD
Advanced Architectural Glass

How To View & Evaluate Glass Samples

Coated glass is normally selected based on reflected color, as this is typically seen in outdoor/natural lighting conditions. To see the reflected color of glass, it is best to view samples with a black background. Position the sample so that someone can look at an image that is reflected from the glass surface. This is the true reflected color of the sample.

Example: Place a piece of black paper, or other low-gloss black material, on a desktop or other flat surface. Position the glass sample on the paper with the exterior side up, so that you can see the image of the overhead lights being reflected from the glass surface. To view the transmitted color, it is best to view samples using a white background. Evaluating glass samples with a white background will not give a true indication of the exterior appearance of the sample. This instead projects the transmitted color and is not what you will see once the glass is installed in the building.

Guardian recommends that samples be viewed in outdoor/natural lighting conditions, preferably in a slightly overcast condition, for the most accurate rendering of transmitted and reflected color. Also, architects are encouraged to consider angle of observation, interior lighting conditions and potential effects of glare when choosing glazing products.

When evaluating samples outdoors, we recommend viewing them during various time of the day and under varying lighting conditions, e.g., cloudy versus sunny conditions. This will provide a truer indication of what the glass will look like, as well as give you the opportunity to see how varying light conditions impact your design intent. After removing the glass from the sample box, place it in a vertical or slightly angled position. Viewing the glass with a black background in the distance is preferred to replicate lighting once installed in the structure. Then look through the glass to provide the best indication of the appearance of installed glass.

Our comprehensive range of coatings, colors and design solutions allows architects to explore fully the aesthetic and functional possibilities of light — both interior and exterior — while meeting complex energy and performance requirements.

To learn more, call us at
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GUARDIAN GLASS

Laminated Glass Product Specification

QF031

CONTROLLED DOCUMENT
Copy No:

Version. Revision	Date	Revision Description	Approved Trainer/SME	Checked (QM)	Approved (OM)
.3	9 August 2006	Sec 5.3 revised			
.2	14 July 2004	Misalignment Tolerances added			
.1	25 June 2003				
_.0	27 February 1998	First issue	Sales Manager / Factory Manager		

Review date	9 August 06	Effective	9 August 06

1. Product Name

DMS Laminated Safety Glass - AS/NZS 2208:1996 (Safety glazing materials in buildings). Also trading as ENVIROLAM^{tm}.

2. General Description

Laminated glass consists of two or more glass lites bonded together by a sheet of polyvinyl butyral (PVB) plastic interlayer between each glass lite. The PVB interlayer between the glass lite provides numerous advantages for its used and in particular, its safety aspect. The PVB holds together the dangerous glass splinters and sharp edges of fractured glass, thus minimizing the risk of injury.

3. Intended Applications

DMS Laminated Safety Glass is used in applications where safety is important against impact.

4. Raw Material Specification

4.1 Input Glass

Pre-Laminated Glass is supplied to the minimum Glass Standard for Clear, Tint, Reflective or Figured Rolled as manufactured by local or overseas manufacturers.

5. Physical Characteristics

5.1 Tolerances

5.1.1 Size Limitations

The limitations on size on the laminating line are:

Maximum Size	5000 x 2200 mm
Minimum Size	900 x 600 mm

For sizes outside these limitations, technical approval is required, refer to Operations Manager.

5.1.2 Dimension Tolerances

All dimensions $\pm$ 2mm unless otherwise specified. The thickness of glass substrate shall be within $\pm$ 0.2mm of nominal for 4-6mm glass, $\pm$ 0.3mm of nominal for 8-12mm glass, $\pm$ 0.5mm of nominal for 15mm glass and $\pm$ 1.0mm of nominal for 19mm glass, unless otherwise specified.

The thickness of interlayer shall be within $\pm$ 0.03mm per 0.38mm interlayer.

5.1.3 Squareness

Difference in diagonals of panel to be no more than 4mm. The overall shape of the glass must fit within a box ± 2mm of the true nominal size.

5.1.4 Overall Bow

The following standards for bow are in accordance with AS/NZS2208:1996. Bow and Warpage shall be checked on the long edge using a straight edge with the panel standing within 5° of vertical.

Substance	Standard Laminating	Laminated For Multi Glazing	Laminated Toughened Glass
5 & 6mm	1 in 350, 6mm maximum	1 in 400, 5mm maximum	1 in 400, 5mm maximum
8, 10 & 12mm	1 in 400, 5mm maximum	1 in 450, 4mm maximum	1 in 450, 4mm maximum
15, 19mm	1 in 500, 5mm maximum	1 in 600, 4mm maximum	1 in 600, 4mm maximum

5.1.5 Edge Quality

Laminated glass shall have a minimum standard of edgework such that:-

(a) Flared or splayed edges are not acceptable - except for the end of score up to a maximum size of 3mm.

(b) Scallops, flakes, shells and chips are permitted up to a maximum of 3mm.

(c) 'Shark's teeth' are not to extend to more than 50% of the thickness of the glass substrate.

(d) Shells are not acceptable on Flat Polish, Flat Smoothed or Mitred processed edges.

(e) Broken corners and corners on/off are not permitted

(f) Vented edges are not permitted

5.1.6 Localised Warp

Localised bow or kinks is not to exceed 1 in 200 for nominal thickness 5, and 6mm and 1 in 300 for substances greater than 6mm.

5.1.7 Misalignment

Edge misalignment between panels shall be no more than 2mm. Misalignment in holes shall be no more than 2mm for heat strengthened or toughened laminates.

5.2 Standards Requirements

Laminated Safety Glass for Buildings is tested in accordance with AS/NZS 2208:1996, the Australian / New Zealand Standard for Safety Glazing Materials in Buildings. Every production run of laminated glass is sampled to Appendix A and tested to clause 3.2 & 3.4 using the procedure outlined in Appendix D & F of AS/NZS 2208 :1996.

Laminated Safety Glass is supplied to conform to AS/NZS 4667:2000, the Australian / New Zealand Standard for Quality Requirements for Cut-to-Size and Processed Glass.

5.2.1 Traceability and Standards Markings

Laminated Safety Glass is marked with a tradesticker using a temper proof sticker which is removed from the glass when identified. This tradesticker contains information necessary for the standards requirements as well as traceability information as follows:

Traceability Code:

- Batch Numbering

xxx - yyy - zzz

xxx - refers to the day of manufacture

yyy - refers to the year of manufacture

zzz - refers to the autoclave run number

Example:

051-98-83

Means: manufactured on the 51st day of 1998 in the 83rd autoclave run.

5.3 Performance Characteristics

5.3.1 Visual Distortion and Surface Quality

The standard for laminated glass is based on the faults being not readily visible at 3 meters when viewed perpendicular to the surface and as the glass would normally be viewed. The following guide-lines assist in the inspection of the glass when it can not be viewed from 3 meters.

5.3.1.1 Digs

Digs are not permitted.

5.3.1.2 Scratches

- Scratches less than 75mm in length and less than 0.5mm in width are allowable.
- Heavy scratches less than 75mm in length and less than 0.75mm in width are permissible if within 100 mm of the glass edge.

5.3.1.3 Stones

- No stones greater than 2mm is permitted.
- Stones 1mm to 2mm in size, one stone allowed in $4m^2$.
- Up to 3 stones below 1mm in diameter are allowed in $4m^2$.

Where the glass is coated, a different set of guide-lines apply.

5.3.1.4 oeam and Other Linear Distortion

- oeam and other linear distortion are not permitted.

5.3.1.5 Surface Vent and Blisters

- Surface vent and blisters are not permitted.

5.3.1.6 Stains

- Stains are not permitted.

5.3.2 Spot Defects in the Vision Area

Inspect the laminated glass held in a perpendicular position and in front of and parallel to a matt grey screen, lit by diffuse daylight or equivalent at a distance of 2m from the glass. The spot defects in the vision area when viewed from 2m shall not exceed the number of the permissible defects in table below.

Defects less than 0.5mm are not considered and defects greater than 3mm are not permitted.

Size of defect d in mm		$0.5 < d \leq 1.0$	$1.0 < d \leq 3.0$			
Size of pane A in m^2		for all sizes	$A \leq 1$	$1 < A \leq 2$	$2 < A \leq 8$	$A > 8$
Number of permissible defects	2 panes	No limitation, however no accumulation of defects	1	2	$1/m^2$	$1.2/m^2$
	3 panes		2	3	$1.5/m^2$	$1.8/m^2$
	4panes		3	4	$2/m^2$	$2.4/m^2$
	≥ 5 panes		4	5	$2.5/m^2$	$3/m^2$

Note: An accumulation of defects occurs if four or more defects are at a distance of < 200mm from each other. This distance is reduced to 180mm laminated glass consisting of three panes, to 150mm laminated glass consisting of 4 panes and to 100mm laminated glass consisting of five or more panes.

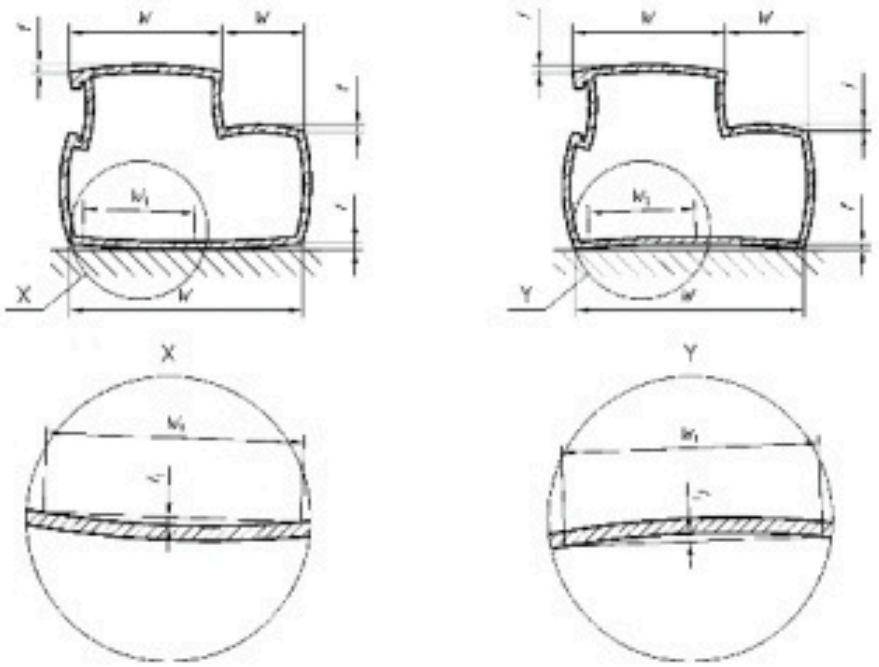
5.3.3 Defects in the edge area for framed edges

Inspect the laminated glass according to Section 5.3.2, defects which do not exceed 5mm in diameter are permitted in the edge area. For panes sizes $\leq 5m^2$ the width of the edge area is 15mm. The edge area width is increased to 20mm for pane sizes $> 5m^2$. If bubbles are present, the bubbled area shall not exceed 5% of the edge area.

5.3.4 Defects on edge which will not be framed

Bubbles, interlayer defects and retractions are permissible if they are not readily visible at 2m when viewed according to Section 5.3.2.

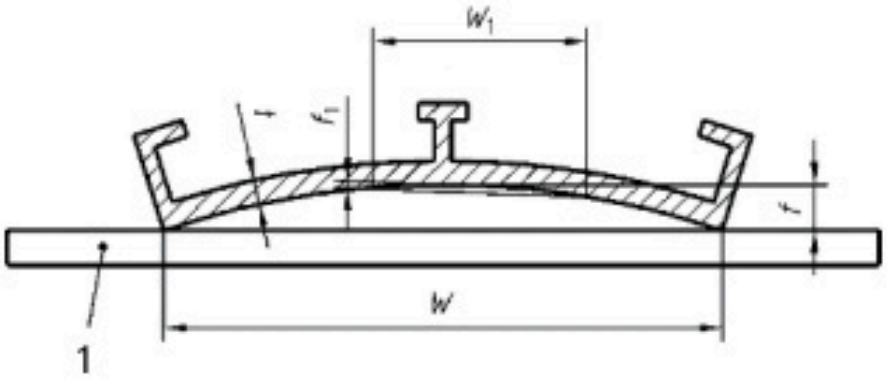
BRITISH STANDARD TOLERANCES: BS EN 755-9:2016



Key

W	width
f	deviation
W_1	100 mm
f_1	local deviation per any 100 mm

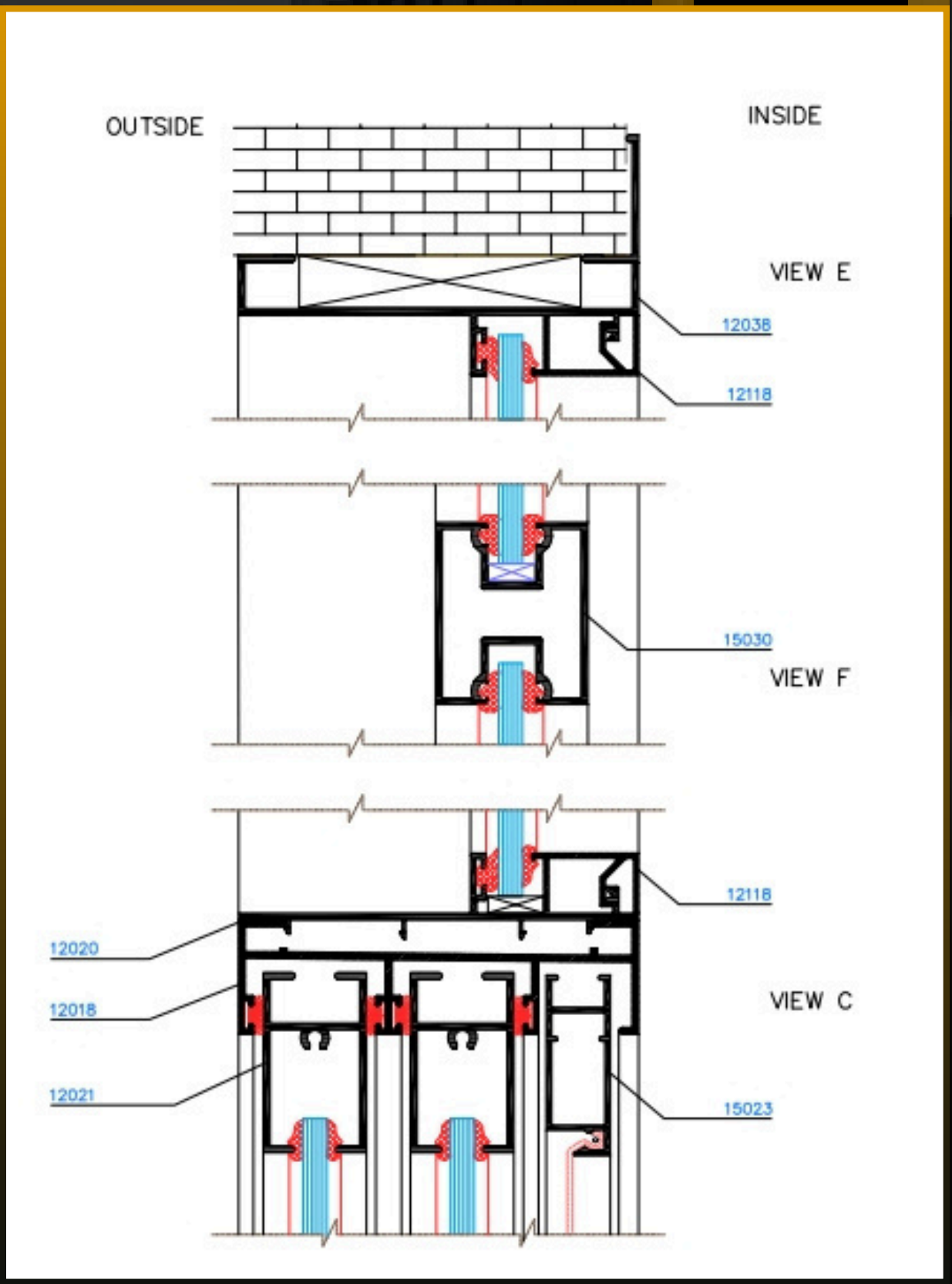
Figure 6 — Measurement of convexity - concavity for hollow sections

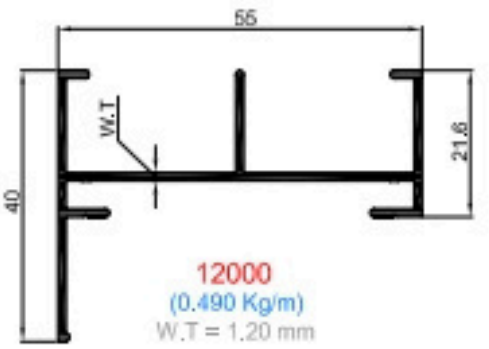


Key

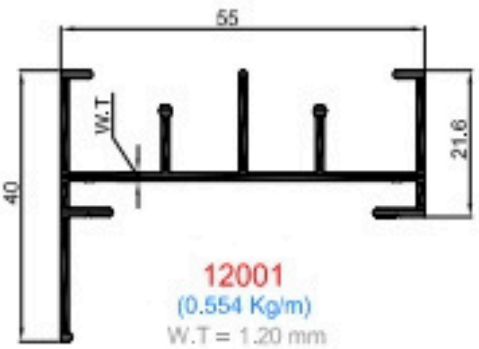
1	base plate
W	width
f	deviation
W_1	100 mm
f_1	local deviation per any 100 mm

Figure 7 — Measurement of convexity – concavity for open section

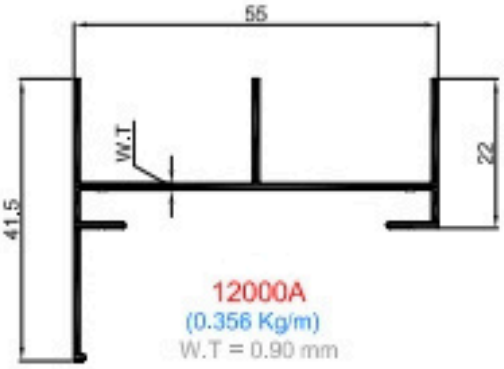




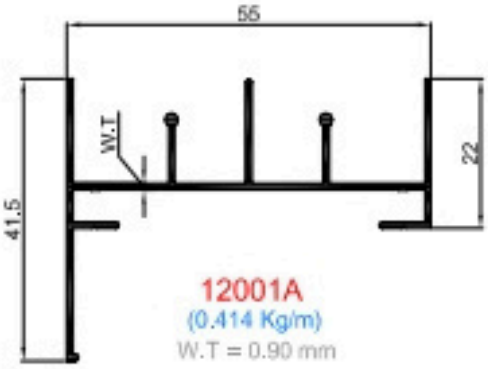
12000
(0.490 Kg/m)
W.T = 1.20 mm



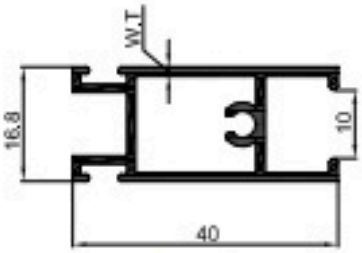
12001
(0.554 Kg/m)
W.T = 1.20 mm



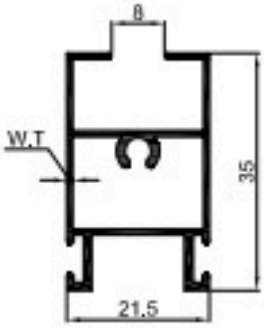
12000A
(0.356 Kg/m)
W.T = 0.90 mm



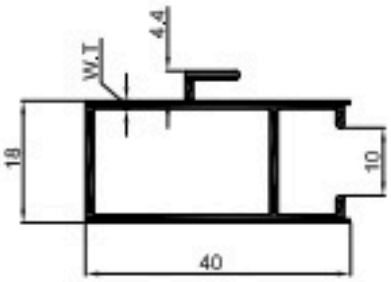
12001A
(0.414 Kg/m)
W.T = 0.90 mm



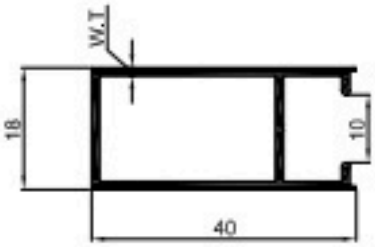
15000
(0.456 Kg/m)
W.T = 1.30 mm



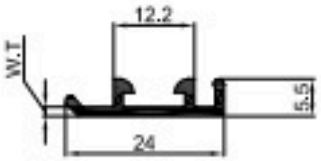
15000A
(0.360 Kg/m)
W.T = 0.85 mm



15001
(0.411 Kg/m)
W.T = 1.20 mm



15002
(0.373 Kg/m)
W.T = 1.20 mm



12002
(0.152 Kg/m)
W.T = 1.40 mm

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