HULAMIN

BUILDING SYSTEMS

HulaBond

Aluminium Composite Panel

Contents

Hulamin Building Systems..... 2

Aluminium Composite Panel..... 3

Specifications..... 4

Panel Construction..... 5

Physical Properties..... 7

Coating test..... 8

Examples of attachment systems..... 9

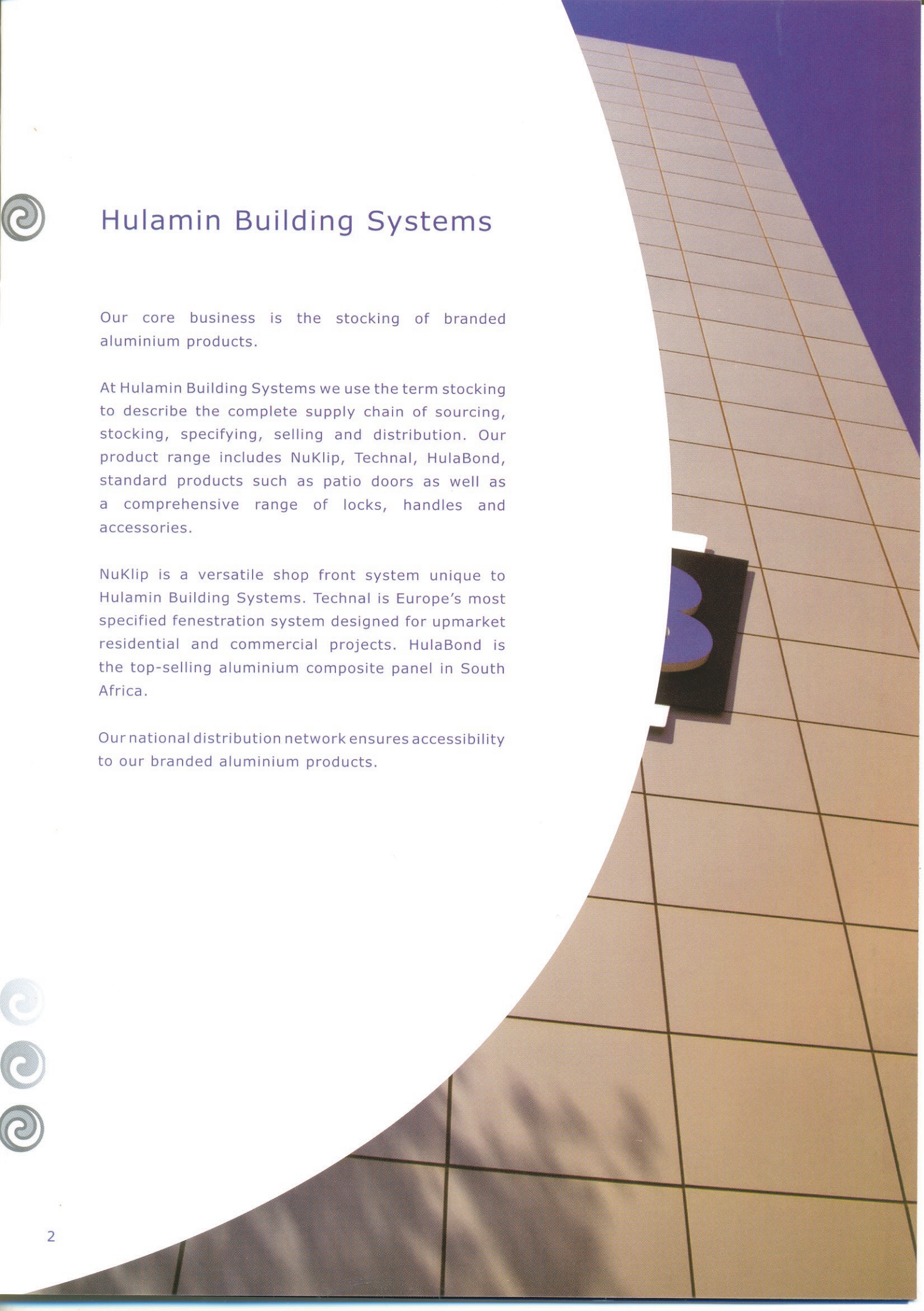
Hulamin Building Systems

Our core business is the stocking of branded aluminium products.

At Hulamin Building Systems we use the term stocking to describe the complete supply chain of sourcing, stocking, specifying, selling and distribution. Our product range includes NuKlip, Technal, HulaBond, standard products such as patio doors as well as a comprehensive range of locks, handles and accessories.

NuKlip is a versatile shop front system unique to Hulamin Building Systems. Technal is Europe's most specified fenestration system designed for upmarket residential and commercial projects. HulaBond is the top-selling aluminium composite panel in South Africa.

Our national distribution network ensures accessibility to our branded aluminium products.



Aluminium Composite Panel

Structured Design

HulaBond aluminium composite panel consists of two sheets of aluminium bonded to a polyethylene core. The panel is available in a range of metallic and non-metallic PVDF paint finishes, in both standard and custom sizes.

Light Weight and Rigid

The composite structure of HulaBond panels, with thin outer skins of aluminium bonded to a polyethylene core, provides great rigidity at a fraction of the weight compared with panels of solid, single sheet construction.

Superior Flatness

The process used in manufacturing HulaBond ensures superior surface smoothness and sheet flatness.

Versatile Formability

HulaBond can be easily formed. It can be curved to a tight radius using pyramid rollers or brake press and can also be routed and folded to create sharp, well defined corners and edges.

Ease of Machinability

HulaBond composite panel can be easily cut, punched, drilled and routed using standard woodworking equipment.

Excellent Vibration Damping

HulaBond, with its polyethylene core, exhibits excellent sound attenuation properties. The vibration loss factor for HulaBond is approximately six times better than an equivalent solid aluminum sheet.

Long-term Weather Resistant

The natural corrosion resistance of the aluminium outer sheets, coupled with the PVDF paint coating applied to HulaBond panels, provides long-term low-maintenance durability.

Specifications

Coating

The PVDF Kynar 500 paint system used for Hula-Bond, applied to international standards, provides excellent colour stability and resistance to harsh weather conditions and air pollution.

Panel Thickness

The standard panel thickness is 4 mm. Subject to enquiry, other thicknesses (3 mm - 6 mm) can be manufactured.

Skin Gauge

The standard gauge of the outer skin is 0,5 mm.

Alloy

Alloy of the aluminium outer skin is 1100-H18.

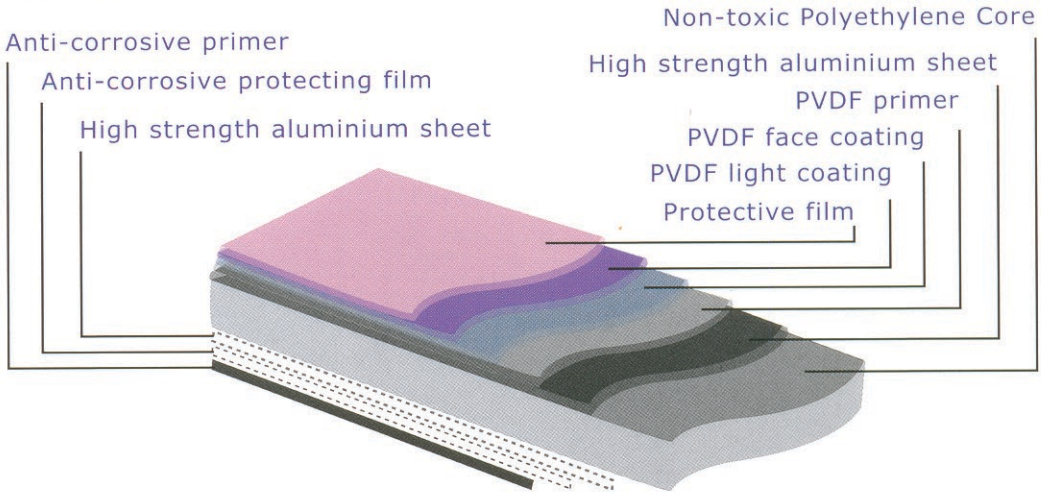
Panel Size

Standard panel size is 1250 mm x 3200 mm x 4 mm.
Widths available on request: 1220, 1270, 1500, 1550.
Lengths available on request: up to 6 m.
Thicknesses available on request: 2 mm, 3 mm, 5 mm, 6 mm.

Panel Construction

HulaBond aluminium composite panels consist of 0,5 mm aluminium sheets bonded to a 3mm core of poly-ethylene. The outer sheet is coated with three coats of PVDF Kynar 500 paint system.

Technical Features

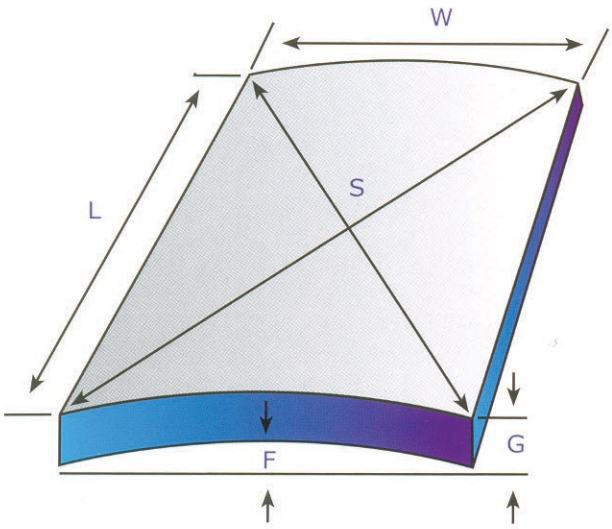


Standard product range

Standard width:	1250 mm
Standard thickness:	4 mm
Standard length:	3200 mm

Available product range

Available widths:	1220 mm, 1250 mm, 1270 mm, 1500 mm, 1550 mm
Available thickness:	2 mm, 3 mm, 4 mm, 5 mm, 6 mm
Available lengths:	up to 6000 mm

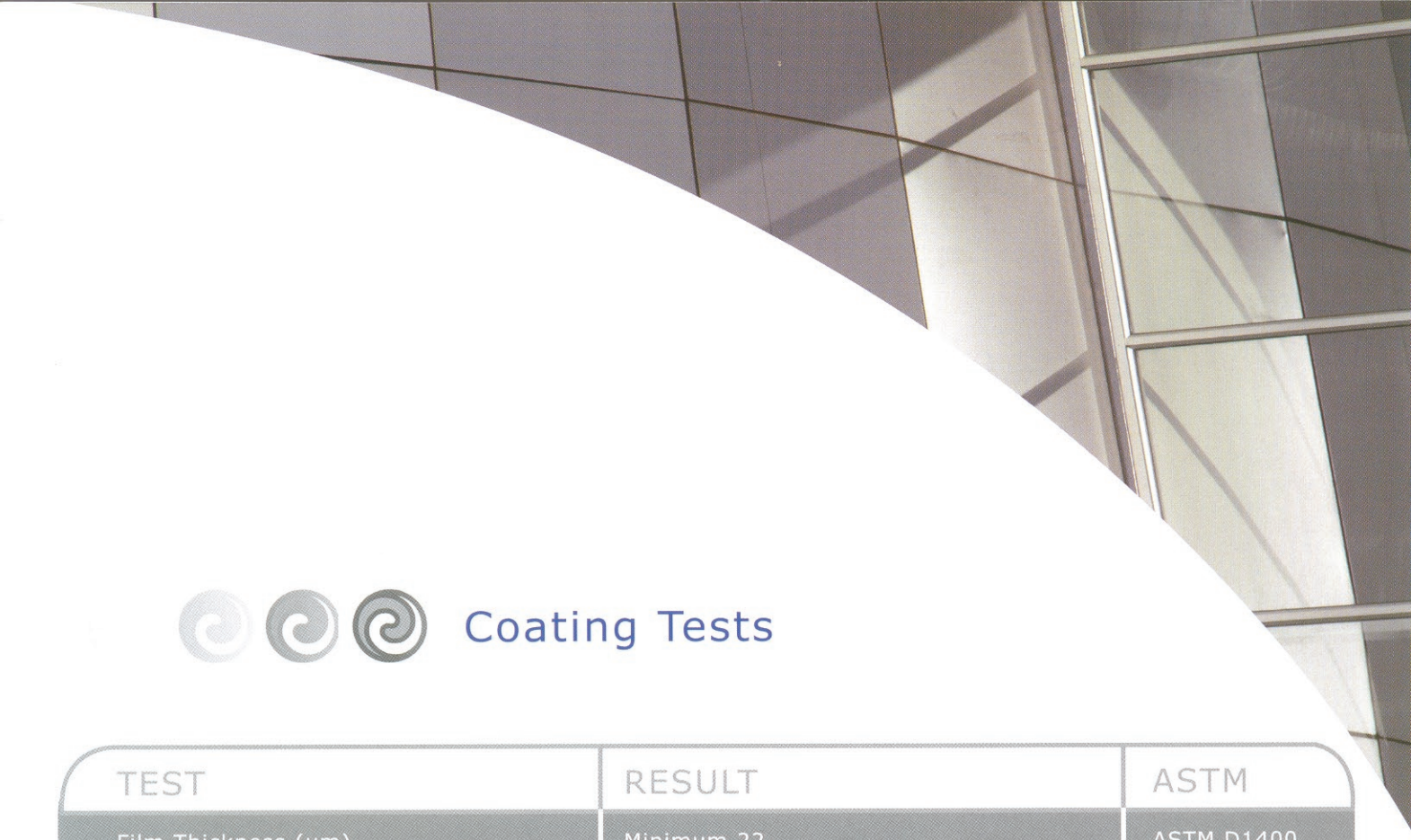


Dimensional Tolerances

Length (L)	± 2 mm
Width (W)	± 2 mm
Flatness (F)	≤ 0,5% of span
Gauge (G)	± 0,2 mm
Squareness (S)	S1 - S2 < 5 mm

Physical Properties

Properties	Standard	Unit	Result
Thermal expansion	ASTM D696 - USA	-	24-28
Thermal deformation temp	ASTM D648 - USA	°C	115
Shear resistance	ASTM D732 - USA	kgf/mm²	2,6
Impact resistance	ASTM D732 - USA	kgf	1,650
Tensile strength	ASTM D527 - USA	Mpa	49,6
Sound-insulating rate	ASTM E413 - USA	STC	25
Fire propagation	ASTM E84 - USA	-	Qualified
Smoke developed	ASTM E84 - USA	-	<45
Adhesive strength	ASTM D903 - USA	kg/mm	0,78
Coating thickness	GB/T17748 - USA	μ m	30 ± 5
Gloss	ASTM D532 - USA	%	80 ± 5
Flexural modulus	ASTM 790-02 - USA	Mpa	2,55 x 10^4
180° Peel strength	ASTM D903-98 - USA	N/mm	10,7
Pencil hardness	ASTM D3363 - USA	-	2H
Acid resistance	ASTM D1308 - 87 - USA	-	Pass
Colour retention	ASTM D2244 - 87 - USA	-	Passes 5000 Hrs.
Chalk resistance	ASTM D4214 - 89 - USA	-	Max.=rating of 8
Humidity	ASTM D2247 - 87 - USA	-	Passes 3000 Hrs
Salt-spray resistance	ASTM D117 - 94 - USA	-	Passes 3000 Hrs
Toughness	ASTM 4145 - 83 - USA	-	2T mp Rift



Coating Tests

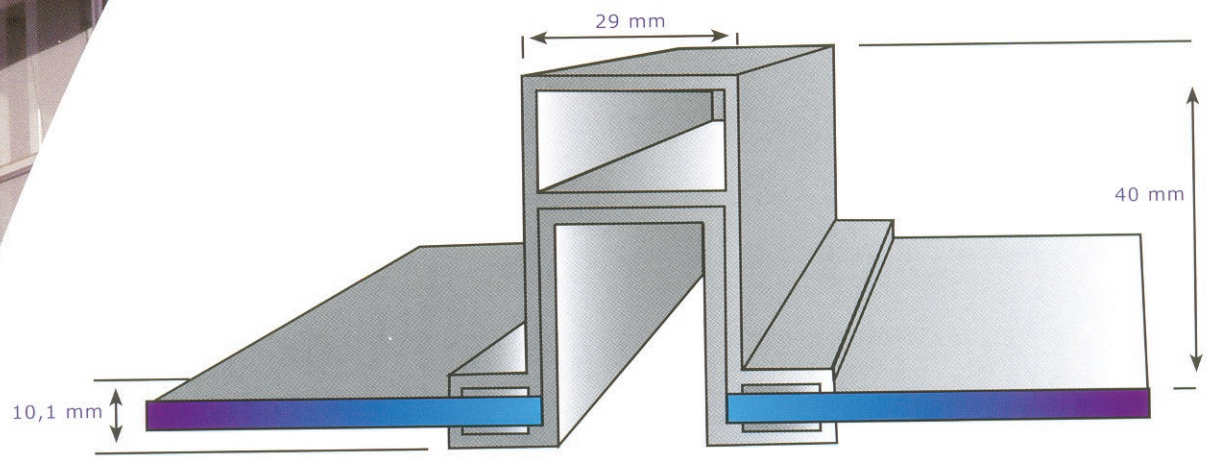
TEST	RESULT	ASTM
Film Thickness (um)	Minimum 22	ASTM D1400
Gloss %	18 - 25	ASTM D523
Pencil Hardness	F	ASTM 3363
Reverse Impact	No cracking, no loss to metal fracture.	ASTM D2794
Bend	OT - No cracking, no loss.	ASTM D1737
Bend & Tape	OT - No loss.	-
Water Immersion (1000 hours)	No blisters, no loss of adhesion.	ASTM D870
Humidity (60° C, 24 hours)	No blistering.	ASTM D2247
HAASS (500 hours) *	No under film corrosion creep more than 2 mm cross cut.	ASTM B287
Sulphur Dioxide Resistance (300 hours)	No blisters or significant colour change.	BS 1391
Water Boil (4 hours)	No blistering.	-
Accelerated weathering - QUV	8 hours UV 70° C; 4 hours CON.	-
(1000 hours)	50° C. Less than 10% loss of gloss after 2000 hours' exposure.	ASTM G53
External Exposure	5 years South Florida, Max. 5E (NBS) units change. 20 years' exposure world wide eg. Europe, USA, Asia, Africa, Middle East.	-

* HAASS - Hot Acetic Acid Salt Spray (modified to contain 0,6% by volume Acetic Acid)

Examples of Attachment Systems

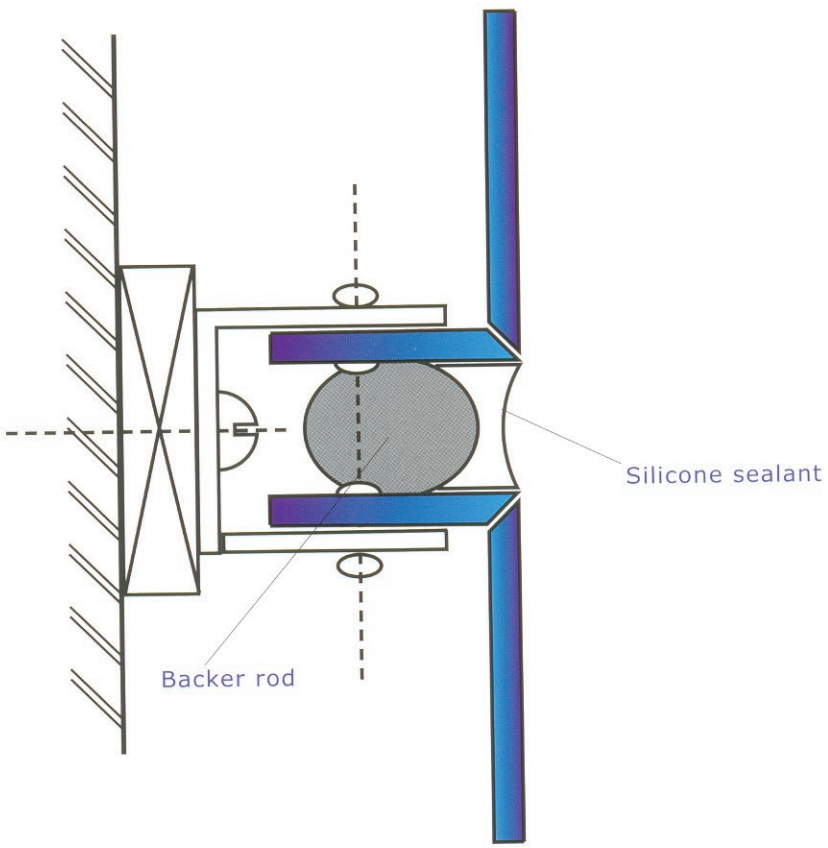
Double Top Hat Section

This is often used in areas where extra strength is required due to high wind conditions, or where large modules are to be used.

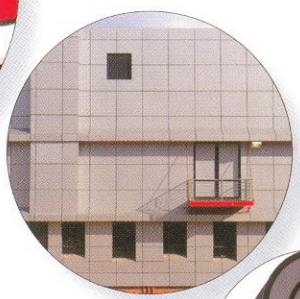


Cassette with slotted angle bolted to structure

Utilised for large, flat areas. Panels can be fabricated off site.



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