

T.W.R. Commercial Limited

OEM guidance to profiles

TWR Guidance

Performance Specification

TWR Commercial Limited

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Introduction

This specification is written as a performance specification and it is intended that it shall be used as guidance in the design, performance requirements, fabrication and installation. Windows will be manufactured to suit non-secure and secure areas within the MHU.

Design

TWR will design windows, which meet the technical and performance criteria for approval by the trust and main contractor and then seek approval before going into full production. This approval was granted by the Trust and Multiplex for the fabrication of all windows to be manufactured and installed into all buildings except Picu. This would require a change of design to house integral blinds, this approval was granted at a much later date.

Design intention

The windows will provide a safe, dry, temperate and comfortable internal environment. They will stand up to deleterious and degrading effect from the sun, weathering, atmospheric pollution, vandalism, but not prolonged and continuous attack, vermin, fungi, for the required service life without maintenance in excess of routine cleaning and minor repairs.

Historical evidence of the window performance has been provided to the main contractor and has been approved as they meet the specified performance criteria. However some items (window restriction) have been removed on the main contractors insistence, which could have safety implications.

Internal gaskets on the casement windows have been removed as part of the NHS directive, which again could hinder performance, these gaskets were to be cut at lengths of 150mm, and we have used a specialised silicon sealant, which is compatible with both aluminium and glass. Slide windows have a full wrap around gasket and fully encapsulated so this directive would not apply.

Aluminium

Aluminium windows and finishes conform to BS 4873. Exposure category and the design wind load are to be in accordance with BS 6375-1. Frames are provided with thermal break as standard. Windows will be finished in powder coatings to BS 6496 with a minimum thickness of 60 microns DFT.


Glass Specification

Sealed units conform to BS EN 1279 and are supplied by Pilkington Glass Cumbernauld. All units carry a standard 5 years guarantee

Glass

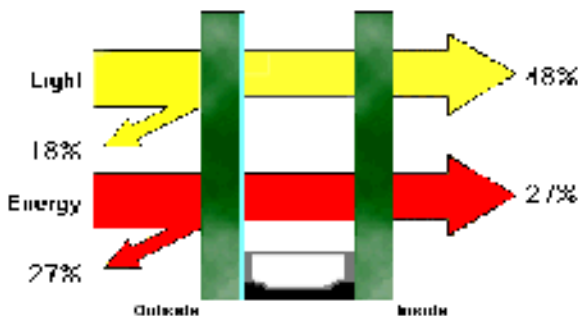
Picu

Glass is 8mm Optifloat toughened clear-10 cavity-6.8mm Optilam Suncool Brilliant 50/25 argon
With Internal blinds



PILKINGTON

U = 1.1W/m²K



DESCRIPTION

Position within	Product name and type of gas	Thickness mm	Weight kg/m ²
Glass 1	Suncool™ Brilliant 50/25H	8mm	25
Cavity 1	Argon	22	
Glass 2	Optifloat™ Clear	6mm	11
Cavity 2			
Glass 3			
Cavity 3			
Glass 4			
Product code		Unit	Thickness
84(10)5244-1		2	38
			Weight
			411

PERFORMANCE


Category	Parameter	Value
Light	Transmittance (T _v)	40%
	" " (T _g)	68%
	Reference value (T _{v,ref})	10%
	Reflectance (R _v)	19%
Energy	Direct Transmittance (E _T)	23%
	Reflectance (E _R)	25%
	Absorptance (E _A)	50%
	Total Transmittance (E _{TET})	23%
	Shading coefficient (total)	0.31
	Shading coefficient (short wave)	0.24
Thermal transmittance		
U value (U _g)		
1.1W/m ² K		
Performance code		
U value/Light/Energy 1.1/48/27		

Calculations are made according to EN standards 410 and 675/12893
Pilkington Specification of CGC 01 3B 12/12/2008

Glass

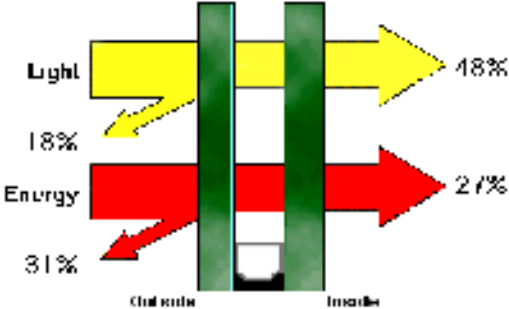
Standard Glass Specification

Glass is 8mm Optifloat toughened clear-10 cavity-6.8mm Optilam Suncool Brilliant 50/25 argon



PILKINGTON

U= 1.4W/m²K



DESCRIPTION

Position outside	Product name and type of gas	Thickness mm	Weight kg/m ²
Glass 1 Glass 1 Glass 2 Glass 2 Glass 3 Glass 3 Glass 4	Optilam Suncool™ Brilliant 50/25 Argon Optifloat™ Clear Air	6.8mm 0 6	18 0 11
Product code		Unit	Thickness
100-200(-) 6-10-8		2	20

PERFORMANCE

Light	Transmittance	Value
	Direct Transmittance (T _d)	40%
	Diffuse Transmittance (T _d)	11%
	Reference total (T _{total})	10%
	Reference total (R _{total})	10%

Energy	Direct Transmittance (E _d)	Value
	Direct Transmittance (E _d)	22%
	Reference total (E _{total})	31%
	Absorptance (E _a)	27%
	Total Transmittance (E _{TET})	27%
	Shading coefficient total	0.31
	Shading coefficient (shaded)	0.27

Thermal transmittance	U value (W/m ² K)	1.4
Control code	U value/Light/Energy 1.4/ 48/ 27	

Calculations are made according to EN standards 410 and 675/12893
Pilkington Specification of CGC 01 35

12/12/2008

Adshead Ratcliffe**Arbofoam**

Is a one-part Expanding Polyurethane Foam in a pressurised aerosol can. It is CFC free. When applied it expands initially as it is being expelled from the can and further expansion takes place during cure by absorption of moisture vapour from the atmosphere and substrate surface. Arbofoam will expand up to 40 times its original volume after application. Cured Arbofoam has excellent adhesion to concrete and plaster, brick, cement, wood, many metals and plastics.

Technical Data

Properties

Values

Application temperature	+ 5oC to + 30oC
Service temperature	- 40oC to + 90oC
Skimming time @ 20oC/65% RH	8 minutes
Cure rate @ 20oC/65% RH	approx 24 hours
Chemical resistance	
Resistant to most dilute acids and hydrocarbon solvents	
UV resistance	Poor
Service life	20 + years when protected from sun light
Water absorption (DIN 534429)	1% by volume
Pressure Strength (DIN 53421)	3 N/cm ²
Shear Strength (DIN 53427)	17 N/cm ²
Bowing Strength (DIN 53423)	7 N/cm ²
Insulation Factor	3 mW/mK
Acoustic Rating	R _{st,w} = 58dB

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Restriction

Aluminium Bar

VBH Wagner

2 CAL 0059 Caldwell restrictor coupling tube
SAA cut from 2 CAL 0039

2 CAL 0040 25064 end caps for the above coupling bar

VBH House
Bailey Drive
Gillingham Business Park
Gillingham
Kent
ME8 0WG

Screws (Restrictors)

BC Fixings

100 8 x 2
6-lobe / resistorx
A2 stainless steel
Driver size T20
Countersunk head
Self tappers
B / N 3182

100 8 x 1
6-lobe / resistorx
A2 stainless steel
Driver size T20
Countersunk head
Self tappers
B / N 2895

B & C Fixings
Archimedes House
20 Cleveland Trading Estate
Darlington
Co Durham
DL1 2PB

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Centre Bolts & Keys

The ERA Dual Screw fits most sash windows and are concealed when fitted, offering added security. The lock uses a key operated locking pin.

Product Code 826

Increase your sash window security without spoiling its good looks with the concealed Dual Screw Bolt.

Remember to remove keys from locked windows and keep them out of sight in a safe place.

Although most locks are suitable for metal windows, it's a good idea to check the details on individual products for suitability.

ERA Products Ltd
Straight Road
Short Heath
Willenhall
West Midlands
WV12 5RA

Riv – Nuts

Fixings Tyne Tees
John Boyle Road
Middlesborough
TS6 6TY

M.6
9.0 x 14.5
Aluminium Large
Ref: 0302106009

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Fixing Cleats

Alitherm 55

Slide

Superglide

Stainless Steel fixing to be fixed to the block and frame using austenitic fixing screws and fixings

	<p>ACVL130 Anchor</p>	<p>1</p>	<p>Each</p>	<p>ETC082 ETC085 ETC089 ETC110 ETC114 ETC119</p>	<table border="1"> <tr> <td>SE</td> <td></td> </tr> <tr> <td>SA</td> <td></td> </tr> <tr> <td>AP</td> <td></td> </tr> <tr> <td>HP</td> <td></td> </tr> <tr> <td>BL</td> <td></td> </tr> <tr> <td>CS</td> <td></td> </tr> </table>	SE		SA		AP		HP		BL		CS	
SE																	
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Acoustic Information

EN 12354-3 has a table acoustic performance that has a standard deviation of up to 2 db so it tends to understate by 1 or 2 db the measured performance of glss.

For 8mm glass in an igu with 6mm or 6.4/6.8mm laminated glass 35 Rw, 33 Rta motorways 29 Rta for urban roads.

This is normally expressed as 35 (-2;-6) Rw (C;Ctr)

If you use Pilkington Optilam Phon then we predict the performance to be for 8mm and 6.8mm glass 39Rw, 31Rtra (Urban). Note this is not measured data but an assessment based on the other tested assemblies.

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MHU Colour

The colour for all frames for the MHU is

Matt Grey RAL 7012

Confirmed with

Nicola

Nightingales

Eric Napier

Multiplex

ADM	CB	JAN 2008	7.A
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