ACORN HOUSE: FACING MATERIALS

1. PRECAST CONCRETE - POLISHED SPANISH DOLOMITE

2. BRICK - ZINNIA;

3. LINEAR WINDOWS WITH PATERNED METAL PANELS - COMPOSITE WINDOWS

4. METAL BALUSTRADE WITH PATTERNED METAL PANELS 9F;
   PLAY SPACE 6F (Zinc Coated Steel)

5. METAL CAPPING; PROFILE TO MATCH ADJACENT STONE BANDING

6. CURTAIN WALL/ WITH PATTERNED METAL PANELS

7. ALUMINIUM CLADDING TO BALCONY

8. RAINSCREEN CLADDING WITH PATTERNED METAL PANELS

9. CLADDING - Proposed Aluminium Planks

10. WINTER GARDEN GLAZING

ALL Patterned metal panels - Cut out to match window pattern methodology

Material Data Sheet

NS1

NS16 is a trade reference to our cast stone manufactured in a wet-cast fashion in accordance with BS1217-2008 cast stone specification.

Coarse and fine aggregates are sourced from spain and mixed with white cement from Denmark.

Criteria	Technical Performance
Cement	White Aalborg (Denmark) CEM 1.52.SR. Cement content – 380 kg/m^3
Trade Name	B96 Wet-Cast Stone to BS1217
Material Density	2,400 kg/m^3
Compressive Strength**	Minimum Compressive Cube Strength is greater than 45 N/mm^2 (MPa)
Aggregate	Spanish Dolomite
Finish	Etched or Polished
Water Absorption**	In accordance with the UKCSA Technical Manual and BS 1217:2008, last 12 months testing no result above max permitted mean of 1.0 mg/mm^2 nor any individual result exceed 1.3 mg/mm^2
Fire Resistance	Non-flammable, Non-combustible, does not give off toxic gases. Reaction to Fire: Euroclass A1
Freeze / Thaw Resistance	Complies with UKCSA Standards so products deemed Freeze/Thaw Resistant
Colours Available	Portland

** Testing is carried out by external UKAS accredited laboratories.

For a full list of standards, please refer to UK Cast Stone Associated (UKCSA) of which Woodside has been a full member since 1986.

VANDERSANDEN

Product name	Product group	Production location
Zinnia	L1	Lanklaar

The raw materials are excavated in Weichsel loam layers, the local loam of Aeolian origin dating from the Ice Age. This löss mainly consists of a silt-like fraction, suited ideally for the manufacturing of hand form bricks. By using specific sand types for surface covering, the desired colour is achieved.

Colour
red brown with light and dark shades

Format	
Moulding method	Hand form
DF: 214 x 101 x 65 mm	Between batches the average size and color may slightly differ.

Essential Characteristics - EN771-1			
CE	EN 771-1 - CPR-97884 NOBO 0063 (ex 0620)	UKCA	EN 771 - 1855-CPR-24914
2+		2+	
Dimensional tolerances	T2		
Range	R1		
Active Soluble Salts	S2		
Mean Compressive strength	>= 20 N/mm²	Tested to the bed face	
Normalized Compressive strength	>= 20 N/mm²	Tested to the bed face	
Dimensional stability	NPD		
Bond Strength general	0,15 N/mm²		
Bond Strength thin layer	0,30 N/mm²		
Reaction to fire	A1	Category	
Water absorption	<= 14% m/md		
Water vapour permeability	5/10		
Net dry density	1740 kg/m³ (D1)		
Gross dry density	1630 kg/m³ (D1)		
Thermal conductivity Lambda 50/50	<=0,60 W/m.K		
Durability against freeze thaw	F2		
Dangerous substances	NL-BSB	According to Annex ZA 3	

Other Characteristics		
Initial rate of water absorption - Non-coated Bricks	1,5 - 4.0 kg/m².min (IW3)	Value according EN771-1:2011 - 5.3.8
Initial rate of water absorption - Coated bricks	0,5 - 1,5 kg/m².min (IW2)	Value according EN771-1:2011 - 5.3.8
Freeze/thaw resistance - PTV 23-002	NPD	NBN 27-009
Thermal conductivity Lambda 90/90	0,65 W/m.K	
Thermal conductivity Lambda Ui	0,697 W/m.K	
Thermal conductivity Lambda Ue	1,376 W/m.K	

Storage & handling	Cutting
- Store packs on a clean surface and cover them - Process from multiple packs at the same time - Follow the Vandersanden processing guidelines	Dry Cutting with power tools may generate dust. This dust may contain silica or quartz particulate which may constitute a hazard. Persons undertaking work of this nature are advised to wear dust masks (FFP3).

* All our Coated bricks are only coated on the facing sides. Coated products are specially labeled and recognisable with a “C” logo on the top left-hand side of the packaging. Always check if using coated or non-coated bricks. Match the mortar to the specified initial water absorption.

RUSELL TIMBER TECHNOLOGY

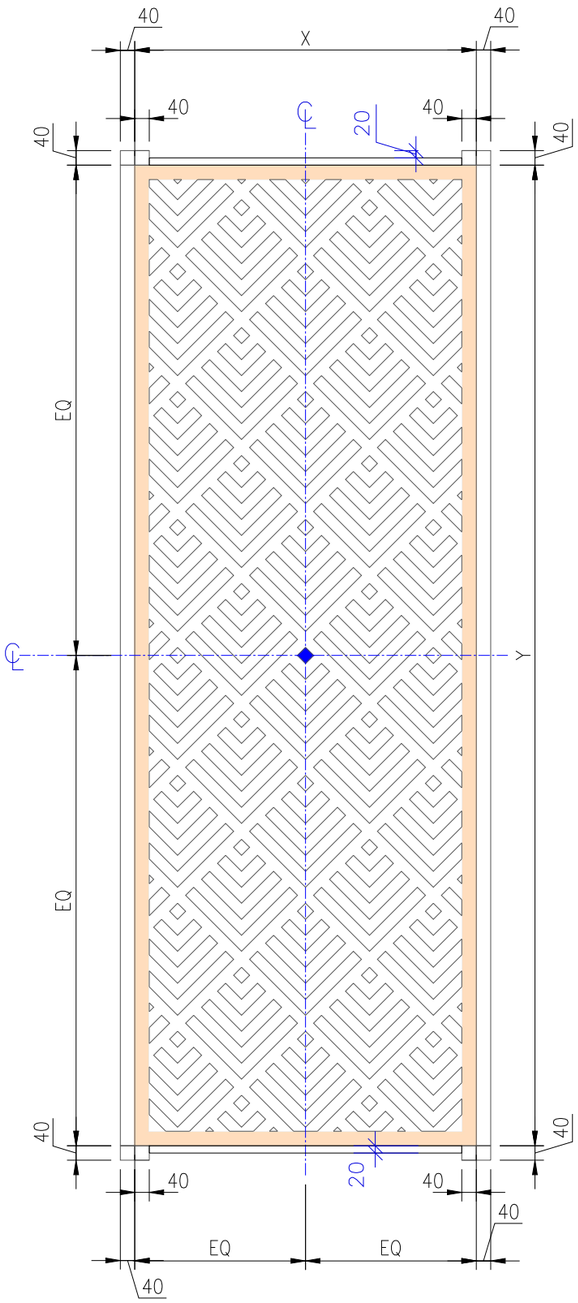
COMPOSITE WINDOWS: ALU CLAD

Specification

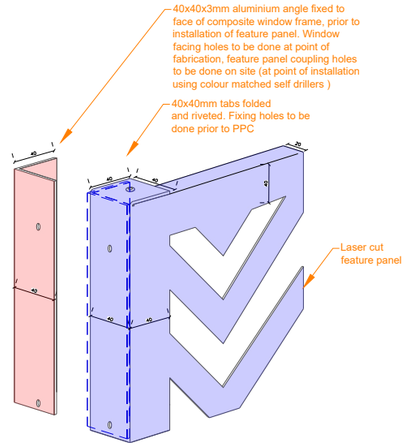
- **U-Value 1.4 – 0.8 W/m²K**
- **DB to 44db** depending on glass used
- Manufactured from laminated Redwood for long-term stability
- Tested to BS7950/Secured by Design.
- Aluminium cladding – externally fixed to allow a breathable solution that enhances life span through drainage & ventilation.
- Frames are 106x57mm in section.
- Fully factory timber with powder coated Aluminium - Dual Colours are available.
- Complete with all ironmongery
- Multi Functionality to work in all locations
  - **Fixed Lights** – conventional and shaped units.
  - **Top & Side Swing** – perfectly balanced opening out & rotating externally.
  - **Tilt & Turn** – In open multi-functional – Tilt first
  - **Out open balcony doors** – double or single restricted leafs
  - **Turn & Tilt** – In open multi-functional door set – Turn first
  - **Sliding doors** – External double & single sliding leafs.
- Vents to give Equivalent Air –Concealed through the head of the frame.
- Self-locating Aluminium extension cills -
  - 60mm / 97mm /140mm & 169mm
  - Lifetime homes low level cill in or out open
  - Hardwood or Aluminium extrusion on Sliding Doors
- Internal cill and ingo grooves are available.
- Glazing options between 23mm and 36mm to give U-value of 1.4 W/m²K to 1.2 W/m²K in double glazed units & 0.8W/m²k (whole window) triple glazed
- Meet fire escape regulations with the suitably sized window.

3

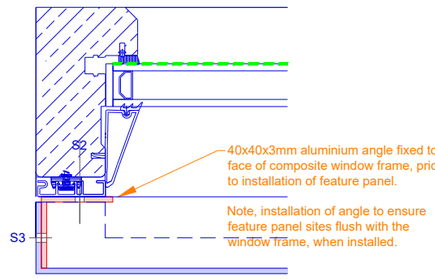
Pattern Centre Point on ALL Panels

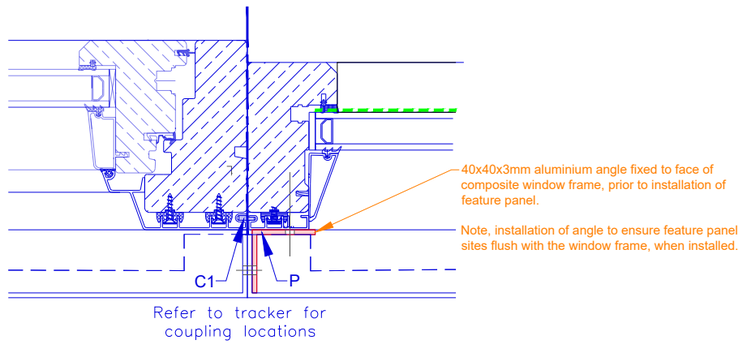


A Pattern Setting out Point

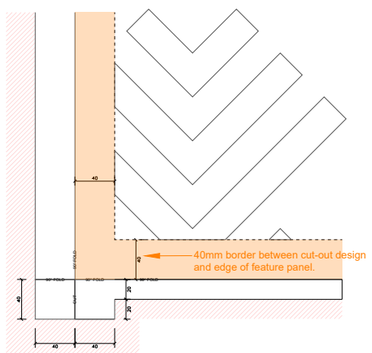


B Isometric of Panel

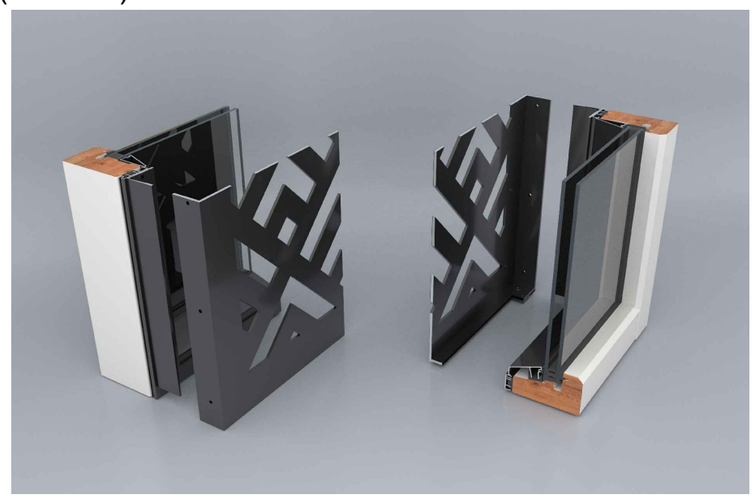




C Single & Couple Angle Locations (Window)



D Folded Corner



E **3D** Image (Window)

Cutout Pattern Scale dependant on level and/or location of panel. Refer to window tracker for size & Location

A	Steel support plate thick, fixed to frame using S2 screws and to concrete using S1 screws. Screws fitted 150mm from each end and max 400mm centres
B	Type C - bracket, fixed to frame using S2 screws and to substrate using S screws. Brackets fitted at max 400mm centres.
C	SIGA Trestard Class B (External) Weather and Air tightness (150mm)
D	Everbuild 825 Mastic. Colour matched to external frame
E	mm head frame extension. Glued and screwed to frame and factory finished to match
F	mm cill frame extension. Glued and screwed to frame and factory finished to match
G	2mm Aluminium head flashing, PPC coated to match external
H	2mm Aluminium cill flashing, PPC coated to match external
I	4.5mm Steel checkered Plate, mill finish
J	Steel Balustrade fixed to window frame, PPC coated to match frame
K	AOV actuator fixed to frame jamb
L	Trickle Vent (see tracker for EA)
M	Localised Class B packing pieces
N	0.9mm Cranked bracket, fixed to screen using S2 screws and to substrate using S screws. Brackets fitted at max 400mm centres.
O	Laser Cut Feature Aluminium Panel
P	Laser Cut Feature Aluminium Panel Vertical Support Angle
Q	6mm thick Window System Vertical Support Bracket, into concrete, as drawn.
R	2mm Aluminium jamb flashing, PPC coated to match external
U	73x73x6mm Galvanised Angle Bracket, fixed to Post & frame using S2 screws. Fixings 150mm from either end and at max 300mm centres.
V	170x100x3mm Galvanised Angle Bracket, fixed to concrete using 2 No. S1 screws and to frame using 2 No. S2 screws. Fixings 150mm from either end and at max 300mm centres.
W	100x35x3mm Galvanised Angle Bracket, fixed to SFS using S1 screws and to frame using 2 No. S2 screws. Fixings 150mm from either end and at max 300mm centres.
X	100x45x3mm Galvanised Angle Bracket, fixed to U/S of Steel Angle using 1 No. S3 zscrews and to frame using 2 No. S2 screws. Fixings 150mm from either end and at max 300mm centres.
Y	Component by others, not in RTT scope
Z	Component currently in abeyance
S1	Masonry Screw
S2	Timber Screw
S3	Self-Tapping Screw
S4	Self-Drilling Screw
T1	S/O - = Screen Height
T2	S/O - = Screen Width

IMPORTANT NOTE

EACH FOLDED FEATURE PANEL HAS A VISIBLE 40mm BORDER, AS SHOWN

ALL EXTERNAL WINDOW ALUMINIUM, INCLUDING FEATURE PANEL, BRACKETRY AND VISIBLE FIXINGS TO BE **PPC RAL ANTHRACITE GREY 70% Gloss**

For Construction

CLIENT: MYCO Ltd
SITE: Acorn House Kings Cross WC1X 8DP
OUR JOB REF: 42614

TITLE: Feature Panel Methodology

JOB - DRAWING No: 5361-RTT-XX-XX-XX-XX-DR-X-0309

REV	ALT	DATE	DESCRIPTION
C01		02 05	Revised to Status A comments

NOTES:
RTT scope in Blue
By Others in Grey
Notes & Questions in Green
Variation/Extra-Overs in Red

SCALE: NTS@A1 | DRAWN BY: SD | CHECKED: | DATE: 09/12/2023

RUSSELL Timber Technology Engineered to excel

UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN MILLIMETRES UNMARKED TOLERANCES: 0.= ±0.5 0.0= ±0.25 0.00= ±0.1

** IF IN DOUBT ASK **

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TATA STEEL

TATA

May 2015

Zinc-coated steel sheet and coils

Safety Data Sheet

1. Identification of the Substance and company

1.1

Other names:	Hot-dip galvanised steel, HDG, continuously galvanised steel strip, Galvatite.
Description:	Plain carbon steel sheet that has been hot-dip coated with zinc or zinc-iron alloy.

1.2
Used in many applications such as construction, automotive, energy/power, transport, defence and security, engineering, consumer products, lifting and excavating and packaging.

1.3

Company:	Tata Steel Strip Products UK Port Talbot Works Port Talbot, SA13 2NG	Tata Steel Strip Products UK Llanwern Works Newport, NP19 4QZ	Tata Steel Strip Products IJmuiden, PO Box 10000, 1970 CA, IJmuiden	Tata Steel Colors Shotton Works Deeside Flintshire, CH5 2NH
Telephone:	+44 (0) 1639 871111	+44 (0) 1633 290011	+31 (0) 251 495883	+44 (0) 1244 812345
Normal Hours:	Commercial / Technical support	Commercial / Technical support	Commercial / Technical support	Commercial / Technical support
Email:	reach@tatasteel.com	reach@tatasteel.com	reach@tatasteel.com	reach@tatasteel.com

1.4

Emergency:	Contact Security Department	Contact Security Department	Contact Security Department	Contact Security Department

2. Hazards Identification

2.1 Classification
Zinc-coated steel is defined as an article under REACH and does not meet the requirements for classification as dangerous under the Classification, Labelling and Packaging of substances and mixtures (CLP) regulations (EC 1272/2008).

When zinc-coated steel is heated to high temperatures, e.g. during welding or flame cutting, it may emit irritant fumes, which can cause metal fume fever. Repeated contact with protective coatings on the sheet may cause skin problems.

2.2 Label elements according to CLP regulations (EC) 1272/2008 No label required, no signal word required.

2.3 Other hazards
Pre-finished steel can have sharp edges and corners, and relevant precautions should be taken when handling and storing. Under normal conditions of use and storage these materials are stable and non-toxic. Zinc-coated steels may be coated with a non-dangerous oil or chemically passivated surface coating, however prolonged exposure may give rise to skin irritation.

3. Composition / information on ingredients

3.1
The plain carbon steel substrates manufactured by Tata Steel Europe are mild steels that may contain up to 2.5% w/w total of alloying elements, plus carbon. Depending on customer preference, zinc-coated steels may have a protective film of oil or a chemically passivated surface coating that consists of one or more of the following materials: chromate, phosphate, silicate or titanium-based compounds.

Table showing typical composition of zinc-coated steel

Product area	Substance	EINECS No.	CAS No.	Range (%) by weight	Classification (CLP Regs)
Steel substrate	Iron	231-096-4	7439-89-6	Balance	Not classified
	Carbon	231-153-3	7440-44-0	0.001 - 0.50	Not classified
	Manganese	231-105-1	7439-96-5	0.0 - 2.5	Not classified
	Chromium	231-157-3	7440-47-3	0.0 - 0.60	Not classified
Zinc coating	Zinc	231-175-3	7440-66-6	Applied up to 300g/m^2/surface	Not classified

4. First aid measures

4.1

Skin contact: Cuts (lacerations) to the skin from sharp steel edges should be treated as normal cuts and, if required, seek medical attention. Wash if contaminated with oil coating.

Eye contact: If particles enter the eye wash the eye with running water for at least ten minutes. Seek medical advice if irritation persists.

Inhalation: If hot work such as welding / burning causes exposure to significant concentrations of fume, remove exposed personnel to fresh air. Seek medical attention if symptoms such as coughing persist.

Ingestion: None required.

4.2
The most important symptoms and effects for eye exposure are soreness and mechanical irritation.

4.3
Immediate medical attention is required if lacerations are deep.

5. Firefighting measures
Zinc-coated steel is non-flammable and has a high melting point, 1 450-1 520°C (steel), 419-450°C (zinc) at 1 013 hPa.

6. Accidental release measures
Zinc-coated steel is sold in sheet form and an accidental spill could not be achieved.

7. Handling and Storage

7.1 Handling
Zinc-coated steel is sold in many forms, sheet, coils, sections, tube, pipe, plate or as semi-finished products. Care should be taken when handling, as there may be sharp edges present. Where required the use of hard wearing (protective) gloves and overalls should be used to prevent cuts and abrasions. Care should be taken when lifting heavy loads and, where necessary, use appropriate lifting equipment to do so. Coil bundles may be secured by banding straps, which may have been fitted under tension so care should be taken when removing them. Steel products should never be lifted by retaining straps or bands since these may snap and release the load during lifting.

7.2 Storage

Some products may be secured by using straps or bands, which could cause injury to eyes or other injuries when tension is released. There may be sharp edges present, which could cause lacerations. Store in an appropriate facility to prevent damage, use suitable racks or storage pallets. Lifting should always be carried out in a way that prevents injury to operators or damage to the lifting equipment.

8. Exposure controls and personal protection

8.1 Control parameters [occupational exposure limits (OELs)]

Please note these exposure limits are not directly associated with the product but with possible exposures that may occur when performing certain activities such as welding or cutting.

Current OELs (GESTIS International Limit Values Institute four Arbeit Schutz der Deutscher Geset lichen Unfallversicherung (IFA))

Country in EU with OEL for the relevant substance	Substance			
	Iron oxide (Fe_2O_3 & FeO) as iron		Zinc oxide (ZnO) as zinc fume/resp dust	
	8-h TWA (mg/m^3)	STEL (mg/m^3)	8-h TWA (mg/m^3)	STEL (mg/m^3)
Austria	5.0 (resp)	10.0 (resp)	5.0 (resp)	---
Belgium	5.0	---	5.0	10.0
Denmark	3.5	7.0	4.0	8.0
France	---	---	5.0	---
Germany (AGS)	---	---	---	---
Germany (DFG)	---	---	1.0 (resp)	1.0 (resp)
Hungary	6.0 (resp)	---	---	---
Poland	5.0	10.0	---	---
Spain	5.0	---	---	---
Sweden	3.5	---	---	---
United Kingdom	5.0	---	---	---
TWA – Time-weighted average measured over an 8-hour period				
STEL – Short-term exposure limit value – 15-minute duration				
Resp - Respirable fraction of dust				

8.2 Control Measures

Wear suitable gloves, overalls and eye/face protection when handling the pre-finished steel to prevent cuts and abrasions.

If hot work activities, such as welding or burning, or mechanical abrasion are to take place local exhaust ventilation (LEV) should be used to remove any fume/dust produced. When using LEV systems, the manufacturers' instructions and guidance should be followed at all times to maintain sufficient capture velocity and to ensure that the air cleaning system is in good working order. If a large amount of fume is generated and there is a risk that exposures may exceed relevant OELs, suitable and approved personal respiratory equipment (RPE) should be used in conjunction with the LEV. Ori-nasal respirators fitted with either a P2 or P3 filter (EN149: FFP2S / FFP3S) may be used when fume levels are high, depending on the dust/fume concentration. Manufacturers' directions for use must be followed and, where applicable, an RPE face-fit test should be successfully completed before use.

9. Physical and chemical properties

Property	Value used
Physical State at 20°C/ 1 013 hPa	Solid
Form	Zinc-coated steels are hard, dense silver-coloured metallic materials. If the product has been heated to give the galvannealed product such as Galvatite IZ the surface will have a dull grey appearance
Melting point	1 450-1 520°C at 1 013 hPa (steel), 419-450°C (zinc)
Boiling point	Not applicable
Relative density	7.85 kg/dm^3 at 20°C

Vapour pressure	Not applicable, steels due to high melting point >1 000°C
Surface tension	Not applicable, steels are an inorganic solid with very low aqueous solubility
Flash point	Not applicable, steels are an inorganic solid with a high melting point >1 000°C
Flammability	Non-flammable
Explosive properties	Non-explosive
Oxidising properties	No
Viscosity	Solid

10. Stability and reactivity

The product is stable under normal conditions. The zinc coating will release fume containing zinc oxides when heated to high temperatures greater than 419°C. . In contact with strong acids, steels may release gaseous acid decomposition products (e.g. hydrogen, oxides of nitrogen) and metals will be dissolved in the acid. For chromium-containing steels, contact with strong oxidising agents at high pH (e.g. alkaline cleaners at pH 10-14) may result in the formation of Cr (IV) compounds at ambient temperatures.

11. Toxicological information

Under the normal applications of this product, health effects should not occur owing to the low risk of exposure to minimal hazard material. If activities mechanical activities, such as dry grinding or machining, or hot work, such as welding and burning, are carried out dust / fume will be produced which may irritate the respiratory system at high airborne concentrations. The principal route of entry into the body is via inhalation of fume/dust.

Acute toxicity
Exposure to high fume/dust concentrations in air may cause respiratory irritation and can be potentially harmful if inhaled into the body in large amounts over long time periods. This is not expected under normal conditions of use of the product.

Skin corrosion / irritation
Fumes/dust released during mechanical working or hot work are not known to be irritant. However there have been reports of irritation through exposure to dust from white rusting, which is thought to be due to blocking of skin pores with zinc oxide dust.

Eye damage / irritation
Fumes/dust released during mechanical working or hot work are not known to be irritant.

Respiratory / Skin sensitisation
Fumes/dust released during mechanical working or hot work are not known to cause sensitisation.

Germ cell mutagenicity No
effect.

Carcinogenicity No
effect.

Reproductive toxicity No
effect.

Repeated dose toxicity – Inhalation
Mechanical working, such as dry grinding or machining, will produce dust of the same composition as the coating and base metal. If the product is heated to high temperatures, e.g. during welding or flame cutting, it releases fumes containing oxides of zinc, manganese and iron, and also breakdown products of any protective coating that may have been applied to the product.

The potential effects on health from exposure to fumes generated during hot work include metal fume fever, a short-lasting, self-limiting condition with symptoms similar to influenza. The principal mode of entry into the body is by inhalation. If airborne concentrations are excessive (see Section 8.1) over long periods of time they may affect the workers' long-term health

Exposure to iron oxide fume, in excessive concentrations and over long periods of time, may cause a benign condition called siderosis. Repeated inhalation could lead to cumulative effects. This condition is not expected to occur under normal conditions of use of the product.

12. Ecological information

There are no known harmful effects from the product on the environment. Under normal applications exposure to the environment should not occur.

12.1 Toxicity
No effect.

12.2 Persistence and Degradability
No effect.

12.3 Bio accumulative potential
No effect.

12.4 Mobility in soil
No effect.

12.5 Results of PBT and vPvB assessment
Zinc-coated steel is not PBT or vPvB.

13. Disposal considerations
Steel products are 100% recyclable and should be recycled at 'end of life' in all situations.

14. Transport information
Zinc-coated steel is not classified as dangerous under CLP Regulations (EC) 1272/2008 so there is no requirement for transport information. None of the sub-headings in this section is applicable for this product.

15. Regulatory information

15.1
Zinc-coated steel specifications are covered by numerous ISO standards. All steels covered by this safety data sheet comply with the packaging and packaging waste EC Directive 94/62/EEC on heavy metal content. Except for steels protected by chromate passivation, all steels covered by this data sheet comply with the Restriction of Hazardous Substances directive 2002/95/EC and the End-of-Life Vehicle directive 2000/53/EC. The iron manufactured and used to produce this steel product has been registered under REACH along with any other component where a registration was required.

15.2
A chemical safety assessment has not been carried out as zinc-coated steel is defined as an article under REACH and does not require an assessment, plus it is not classified as dangerous under the CLP Regulations (EC)1272/2008.

16. Other Information

Revision
This safety data sheet (SDS) has been produced / revised in line with Annex II of the REACH Regulations (2006) as guidance only, as articles do not require a SDS. Information in this safety data sheet is supplied to inform the customer and should be used where necessary.

This revision is the current version dated **May 2015** - *Changes: deleted references to Dangerous Substances Directive to comply with June 2015 requirements CLP. Also, minor edits.*

Previous Versions: June 2011 July
2007
January 2006
First published: February 1995

Hazard and Precautionary Statements according to CLP Regulations (EC)1272/2008): No hazard statements.

References

GESTIS International Limit Values Institut fuer Arbeitsschutz der Deutschen Gesetzlichen Unfallversicherung (IFA) – website:
http://bgiaonline.hvbg.de/LIMITVALUE/WebForm_gw.aspx

Disclaimer

The information, specifications, procedures, and recommendations herein are presented in good faith and are believed to be accurate and reliable at the date of issue. Where information is taken from supplied items it is the responsibility of the supplier to ensure the accuracy of the data. The individual authors of this safety sheet are deemed to be appropriately competent. This safety data sheet was constructed using the guidance provided under the REACH regulations ((EC) No 1907/2006) as to the format and information required. For steel articles a safety data sheet is not a legal requirement and is provided for the convenience of downstream users. Occupational exposure limits (OEL) used in this safety data sheet will be EU OELs and where these limits do not exist UK OELs will be the reference limit. No liability can be accepted with regard to the handling, processing or use of the product concerned which, in all cases, shall be in accordance with appropriate regulations and or legislation. Tata Steel Europe gives no warranty or representation as to the accuracy of the information or for the guidance being for, or suitable for, a specific purpose. All implied warranties and conditions are excluded, to the maximum extent permitted by law. Use of this document by any third party is at your own risk. Save to the extent that liability cannot be excluded by law, Tata Steel Europe is in no way responsible or liable for any damage or loss whatsoever arising from the use of or reliance on the information and guidance contained in this document.

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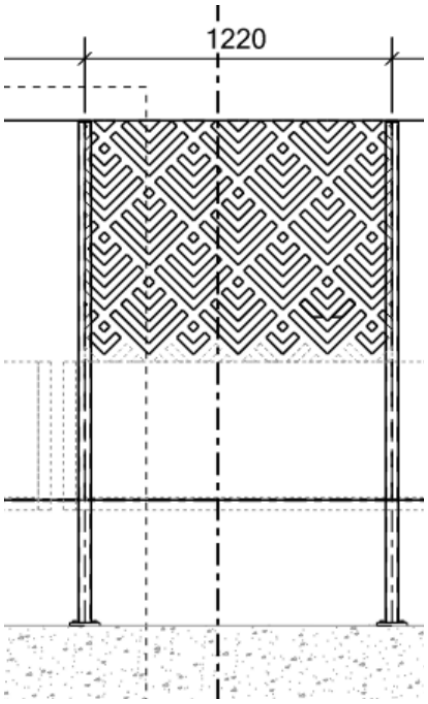
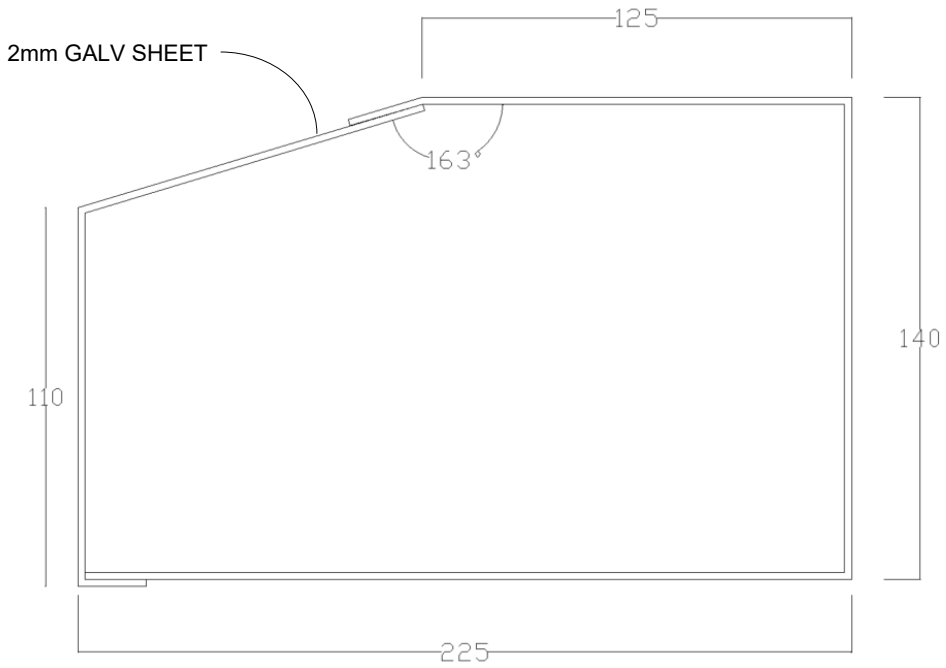


9F Balustrade; 1500mm high with perforated panel;
Anthracite Grey - RAL 7016

5

6F Playspace Screen - AHMM Design Intent;
Internal Ral: TBC; External: Anthracite Grey RAL 7016

5



RAL TBC - TO MATCH STONE

EXECUTION CLASS:

THIRD ANGLE PROJECTION

General Notes

1. THIS DRAWING MUST NOT BE SCALED
2. IF IN DOUBT ASK, DO NOT ASSUME OR SCALE ANY DIMENSIONS
3. FABRICATION TOLERANCE TO BE ±3mm OF THE GIVEN DIMENSION
4. ERECTION TOLERANCE TO BE ±6mm OF THE GIVEN DIMENSION
5. DRAWINGS TO BE READ IN CONJUNCTION WITH ARCHITECT'S & ENGINEER'S DETAILS

Index	Date	Description	Author

REVISIONS

mg group
ARCHITECTURAL METAL & SECURITY
Valley House, North Bridge Road
Berkhamsted, Hertfordshire
HP41TA
Tel: 01442 506390

CLIENT

PROJECT
CAPPING

DRAWING TITLE
PLAN VIEW

SITE ADDRESS

DRAWING STATUS
FOR APPROVAL

DRAWN BY	CHECKED BY	DATE	SCALE
ARUN		07/05/2024	As Noted

PROJECT No.	DRAWING No.	REV
	[GA] - 100	

Aluminium Alloy 3103 H14 Sheet

SPECIFICATIONS

Commercial	3103
EN	3103

Aluminium alloy 3103 H14

CHEMICAL COMPOSITION

BS EN 573-3:2009
Alloy 3103

Element	% Present
Manganese (Mn)	0.90 - 1.50
Iron (Fe)	0.0 - 0.70
Silicon (Si)	0.0 - 0.50
Magnesium (Mg)	0.0 - 0.30
Zinc (Zn)	0.0 - 0.20
Others (Total)	0.0 - 0.15
Chromium (Cr)	0.0 - 0.10
Copper (Cu)	0.0 - 0.10
Titanium + Zirconium (Ti+Zr)	0.0 - 0.10
Other (Each)	0.0 - 0.05
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Aluminium alloy 3103 corresponds to the following standard designations and specifications ***but may not be a direct equivalent***:
ISO Al Mn1

TEMPER TYPES

The most common tempers for 3103 aluminium are:

- H14 - Work hardened by rolling to half hard, not annealed after rolling

SUPPLIED FORMS

Alloy 3103-H14 is normally supplied as Sheet

- Sheet

GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.73 g/cm³
Melting Point	655 °C
Thermal Expansion	23.1 x10^{-6} /K
Modulus of Elasticity	69.5 GPa
Thermal Conductivity	160 W/m.K
Electrical Resistivity	42 % IACS

MECHANICAL PROPERTIES

BS EN 485-2:2008
Sheet
0.2mm to 6.0mm

Property	Value
Proof Stress	120 Min MPa
Tensile Strength	140 - 180 MPa
Hardness Brinell	45 HB

Properties above are for material in the H14 condition

WELDABILITY

Alloy 3103 has very good weldability

FABRICATION

Workability – Cold: Good
Machinability: Acceptable
Weldability – Gas: Very Good
Weldability – Arc: Very Good
Weldability – Resistance: Good
Brazability: Very Good
Solderability: Very Good

[1 OF 2] CONTINUED

Aluminium Alloy
3103 H14 Sheet

TO BE: RAL 7016 ANTHRACITE GREY

CONTACT

Address:	Please make contact directly with your local service centre, which can be found via the Locations page of our web site
Web:	www.aalco.co.uk

REVISION HISTORY

Datasheet Updated	13 November 2018

DISCLAIMER

This Data is indicative only and as such is not to be relied upon in place of the full specification. In particular, mechanical property requirements vary widely with temper, product and product dimensions. All information is based on our present knowledge and is given in good faith. No liability will be accepted by the Company in respect of any action taken by any third party in reliance thereon.

Please note that the 'Datasheet Update' date shown above is no guarantee of accuracy or whether the datasheet is up to date.

The information provided in this datasheet has been drawn from various recognised sources, including EN Standards, recognised industry references (printed & online) and manufacturers' data. No guarantee is given that the information is from the latest issue of those sources or about the accuracy of those sources.

Material supplied by the Company may vary significantly from this data, but will conform to all relevant and applicable standards.

As the products detailed may be used for a wide variety of purposes and as the Company has no control over their use; the Company specifically excludes all conditions or warranties expressed or implied by statute or otherwise as to dimensions, properties and/or fitness for any particular purpose, whether expressed or implied.

Advice given by the Company to any third party is given for that party's assistance only and without liability on the part of the Company. All transactions are subject to the Company's current Conditions of Sale. The extent of the Company's liabilities to any customer is clearly set out in those Conditions; a copy of which is available on request.

Aluminium Alloy 1050A H14 Sheet

SPECIFICATIONS

Commercial	1050A
EN	1050A

Aluminium alloy 1050 is a popular grade of aluminium for general sheet metal work where moderate strength is required.
Alloy 1050 is known for its excellent corrosion resistance, high ductility and highly reflective finish.

Applications - Alloy 1050 is typically used for:
Chemical process plant equipment
Food industry containers
Pyrotechnic powder
Architectural flashings
Lamp reflectors
Cable sheathing

CHEMICAL COMPOSITION

BS EN 573-3:2009
Alloy 1050A

Element	% Present
Iron (Fe)	0.0 - 0.40
Silicon (Si)	0.0 - 0.25
Zinc (Zn)	0.0 - 0.07
Magnesium (Mg)	0.0 - 0.05
Titanium (Ti)	0.0 - 0.05
Manganese (Mn)	0.0 - 0.05
Copper (Cu)	0.0 - 0.05
Other (Each)	0.0 - 0.03
Aluminium (Al)	Balance

ALLOY DESIGNATIONS

Aluminium alloy 1050A also corresponds to the following standard designations and specifications **but may not be a direct equivalent**:
AA1050
S1B
A91050

TEMPER TYPES

The most common tempers for 1050 aluminium are:

- H14 - Work hardened by rolling to half hard, not annealed after rolling

SUPPLIED FORMS

Plain sheet
Plain sheet with a PVC coating on one side
Stucco sheet
Stucco sheet with a PVC coating on one side
Shate

- Sheet

GENERIC PHYSICAL PROPERTIES

Property	Value
Density	2.71 g/cm³
Melting Point	650 °C
Thermal Expansion	24 x10^{-6} /K
Modulus of Elasticity	71 GPa
Thermal Conductivity	222 W/m.K
Electrical Resistivity	0.0282 x10^{-6} Ω .m

MECHANICAL PROPERTIES

BS EN 485-2:2008
Sheet
0.2mm to 6.00mm

Property	Value
Proof Stress	85 Min MPa
Tensile Strength	105 - 145 MPa
Hardness Brinell	34 HB
Elongation A	12 Min %

Properties above are for material in the H14 condition

WELDABILITY

When welding 1050 to itself or an alloy from the same subgroup the recommended filler wire is 1100. For welding to alloys 5083 and 5086 or alloys from the 7XXX series, the recommend wire is 5356. For other alloys use 4043 filler wire.

FABRICATION

Workability – Cold: Excellent
Machinability: Poor
Weldability – Gas: Excellent
Weldability – Arc: Excellent
Weldability – Resistance: Excellent
Brazability: Excellent
Solderability: Excellent

[1 OF 2] CONTINUED

CONTACT

Address:	Please make contact directly with your local service centre, which can be found via the Locations page of our web site
Web:	www.aalco.co.uk

REVISION HISTORY

Datasheet Updated	18 July 2019

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METSKIN DATA SHEET

MetSkin
ALUMINIUM CLADDING

PRODUCT PROPERTIES

MetSkin
ALUMINIUM CLADDING

MetSkin offers three primary system types:

- **Hook-On Cassette System with Secret Fixings**
- **Tray Panel System with Discreet Fix**
- **Interlocking Plank System with Discreet Fix**

Features:	Hook On	Tray	Plank
Fixings	Secret	Discreet	Discreet
Max Size	Portrait: 3490mm Landscape: 3460mm	Portrait: 3440mm Landscape: 3510mm	3900mm x 500mm
Aluminium	Thickness: 2mm/3mm Grade: 1050 and 3000 series		
Weight	5.5/kg/m2 to 8.3kg/m2 based on thickness and grade		
Finishes	A1 Anodized Aluminium A1 PVDF Pre-Coated Aluminium A2 Aluminium Polyester Powder Coated		
Application	Horizontal or Vertical		
Substrate	Masonry, concrete, SFS		
Substructure	Nvelope or equal approved by MetSkin/Vivalda		
Insulation	Approve fire rated insulation		
Testing	CWCT Sequence B testing		
Fire	A1 or A2 non combustible under EN 13501		

PRODUCT PROPERTIES

Fire performance:

Aluminium facades are widely used in modern construction due to their lightweight, durable and aesthetic qualities. Generally, MetSkin panels, suitable support structure and ancillary items are classed as A1 or A2 non-combustible under EN 13501.

CWCT Testing:

Our systems have been CWCT (Centre for Window & Cladding Technology) certified ensuring they meet rigorous industry standards and are resilient to extreme weather conditions, maintaining the façade's longevity and appearance. In line with standard rainscreen requirements, MetSkin cladding systems are fully drained and ventilated, allowing sufficient ventilation and drainage to the cavity to ensure performance is maintained.

CWCT tests include:

- Dynamic Wind and Rain
- Wind Resistance
- Hard and Soft Body Impact Testing

Materials and Finishes:

MetSkin manufactured by MSP Façade Solutions, benefits from the services of their in-house powder coaters 'Prism Powder Coating', Scotland's most accredited powder coaters.

Prism Powder Coating has been producing the highest quality powder coating for decades. The chrome free environmentally friendly in-house facility has achieved both Qualicoat accreditation and Akzo Nobel approved applicator status. The only Powder Coater in Scotland to hold both accolades and 1 of only 20 in the UK. The complete production process is managed on the same site which benefits from minimal handling and gives the manufacturer complete control, contributing to a faster turnaround time.

Finishes:

- A1 Anodized Aluminium
- A1 PVDF Pre-Coated Aluminium
- A2 Rated Powder Coated Aluminium

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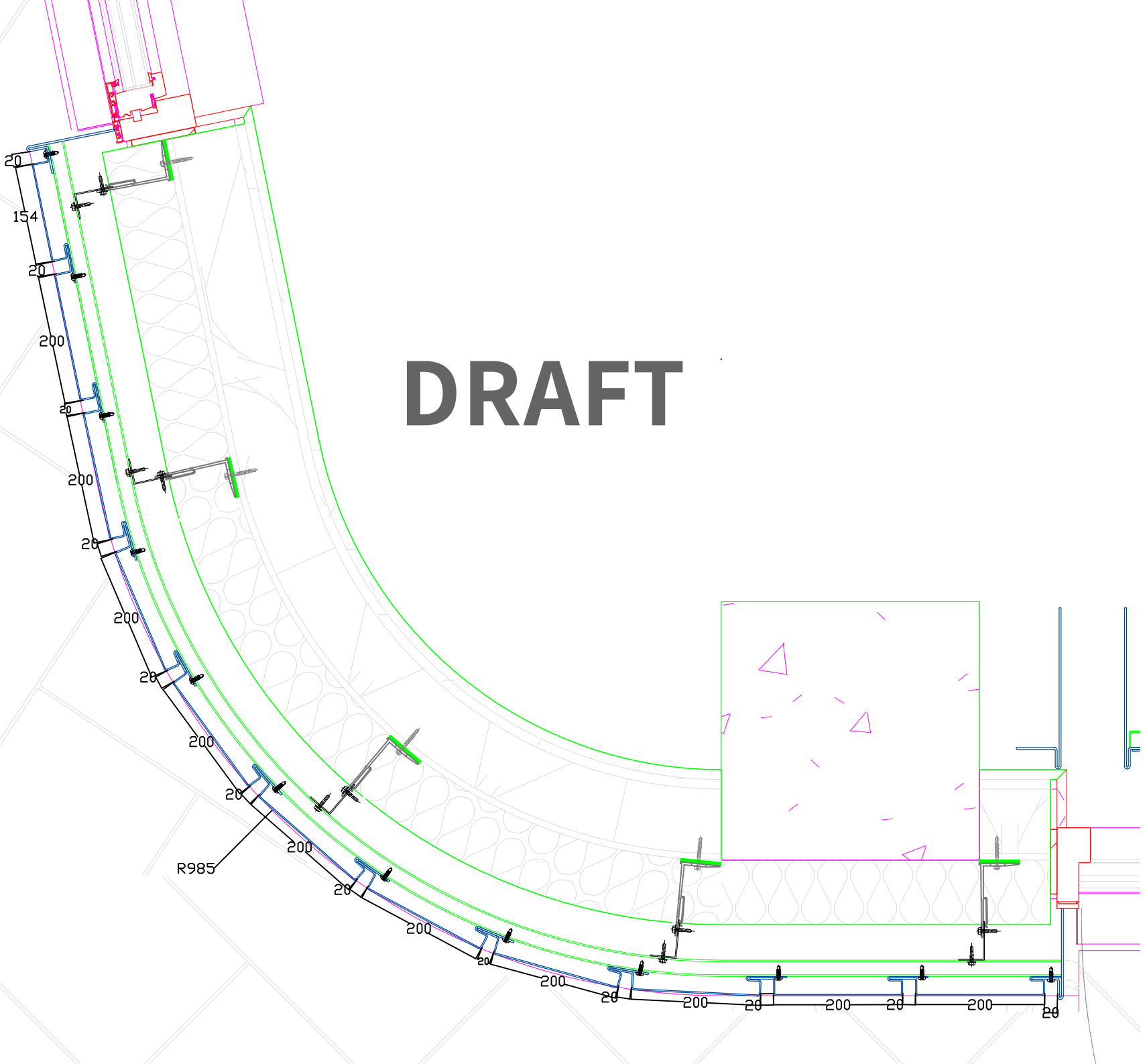
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DRAFT

sunparadise

SLIDING GLASS WALL

GSW 17

System description

Product information

The GSW 17 is an all-glass sliding wall with panels that slide individually. It is suitable as a glazing system for loggias, summer gardens, terrace canopies and also as a dividing system indoors. Thanks to panel overlaps of 40 mm and brush seals, it offers optimum protection against the weather while providing maximum transparency.

System characteristics

- All-glass sliding wall with bottom track
- 2-, 3-, 4-, 5-, or 6-rail
- 1 to 12 panels
- Single-glazed safety glass (ESG) of 8 mm or 10 mm
- Maximum panel width of 1600 mm
- Maximum panel height of 2700 mm
- Track lengths of up to 6700 mm without a joint connection
- Bottom track in system colour with stainless steel running tracks
- Optimum opening and closing due to catch and stopper
- Concealed screws the floor and wall profile
- Height-adjustable rollers on the outer panels
- Standard turn lock (VD) on the active panel for locking
- All handle types in stainless steel
- Available in 16 standard colours and in clear anodising E6/EV1 at no extra charge
- Black, grey or white covers made of aluminium on the carriage profile of the panels

Performance characteristics

Wind resistance
Up to 2000 PA according to EN 12211

Impact resistance
Class 3 according to EN 13049

Panel weight
Up to 85 kg maximum

Continuous function test
Class 2: 10,000 cycles, according to DIN EN 12400

Sound test
18 dB according to EN ISO 717-1

Heat soak test (optional)
EN 14179-1&2:2005

Current test values and certificates are available online at: **www.sunparadise.com**

Options

- Height compensation profile
- 70° to 180° corner solutions
- Locks available in clear or black anodising finish
- Track connection for systems over 6700 mm
- One-piece bottom profile
- 42° threshold profiles, inside and outside
- EPDM mounting profile can be ordered with or without weatherboarding
- Assembly plate
- Floor attachment profile, inside
- Rail extension for systems in front of a wall

What makes GSW 17 special

1

Stainless steel running track and rollers

- The running tracks and rollers are made of weather- and abrasion-resistant stainless steel.
- The hardened rollers support panels weighing up to a maximum of 85 kg and remain durable and low-maintenance even when carrying this load.
- The panels are easy to move and roll smoothly in the guide.

2

Innovative handle and lock types

- Large selection of handles in elegant stainless steel.
- All locks are in clear or black anodising finish available.
- Lock types, including on the wall profile (VW type), secure and close any GSW 17 design.

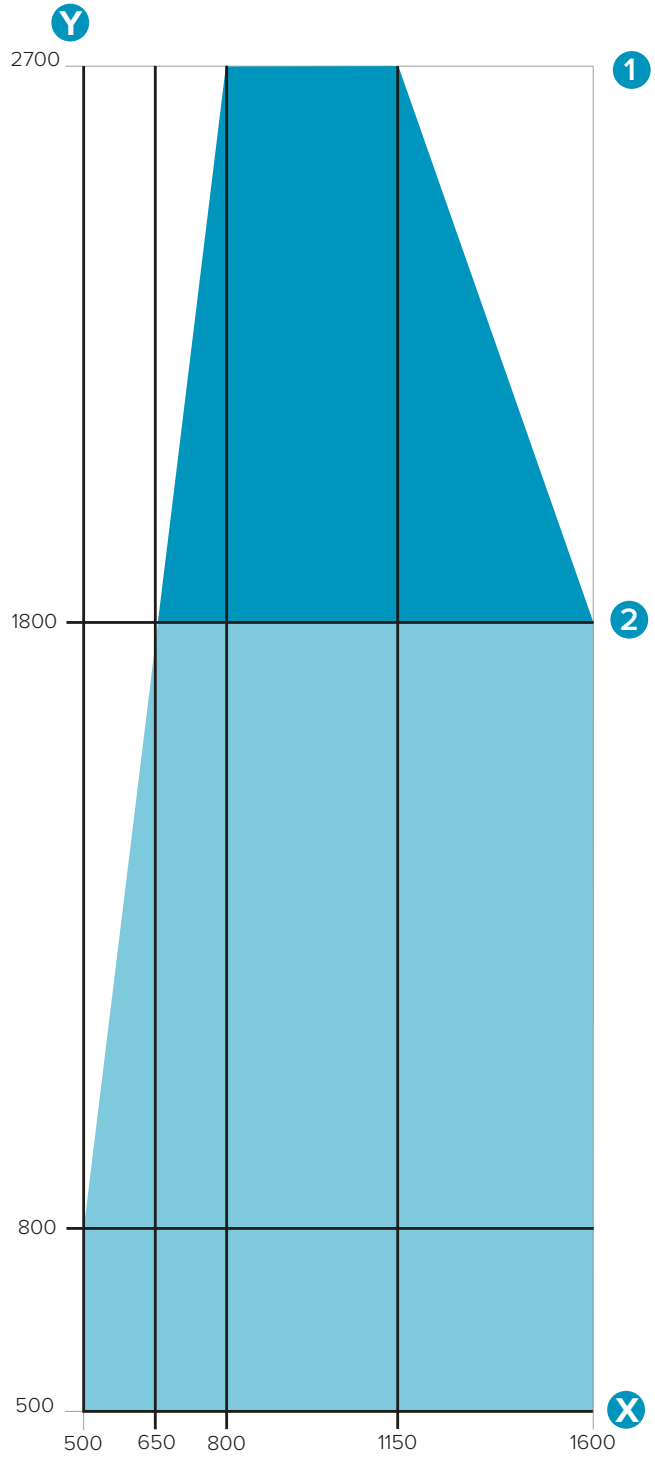
3

Can be combined with ShadingPanel 17

- The ShadingPanel 17 sliding panel system can be integrated perfectly into the GSW 17 system.
- No additional profiles are needed for the integration.
- The sliding panels can be effortlessly pushed into the desired position and are thus the optimal shading solution.

(See page 14)

Size diagram



Y System height
X Panel width

1 Maximum system height (2700 mm)
10-mm single-layer safety glass (ESG).

2 Maximum system height (1800 mm)
8-mm single-layer safety glass (ESG).

Please note:

– 85 kg max. panel weight.
– Panel width is approx. system width divided by the number of panels + 40 mm overlap.
– Bespoke sizing may be available on request.

Heat soak test

In the case of single-layer safety glass (ESG), nickel sulphide inclusions may occur in isolated cases due to the material and production process, resulting in breakage.

We therefore recommend that you use heat-soak tested single-layer safety glass ESG-HST. Panes of ESG whose upper edge is assembled more than 4 m above the traffic area must be made of single-layer safety glass (ESG-HST).

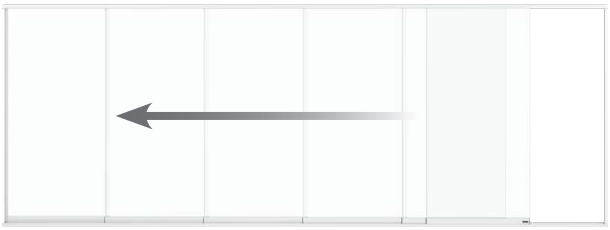
Please keep this in mind when preparing a quotation and processing an order.

Information

The size diagram does not take into account wind & impact loads. The wind loads / wind pull vary depending on the height above wind zones and building areas. The actual values must be requested from the relevant structural engineer of the building and a calculation must be carried out according to the local conditions and applicable standards.

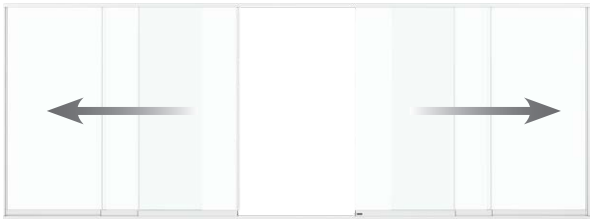
Opening variants

Left & right model



– 2- to 6-rail
– 1- to 6-panel
– Can be slid behind wall
– Opens to the left or right

Centre model



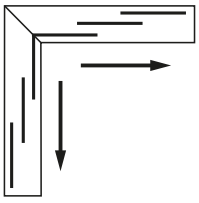
– 2- to 6-rail
– 1- to 12-panel
– Can be slid behind wall

70° to 180° corner model

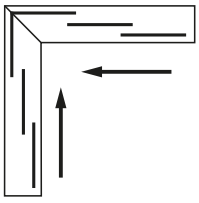
– 2- to 6-rail
– 2- to 12-panel
– Outside or inside corner.
– Diverse rail combinations available through special cut (e.g. 90° connection for 3- and 4-rail system).

Panel positions for corner systems

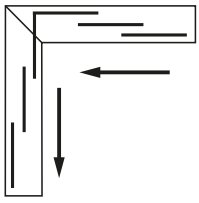
Typ 1 *



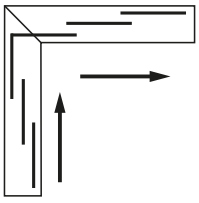
Typ 2 *



Typ 3 *



Typ 4 *



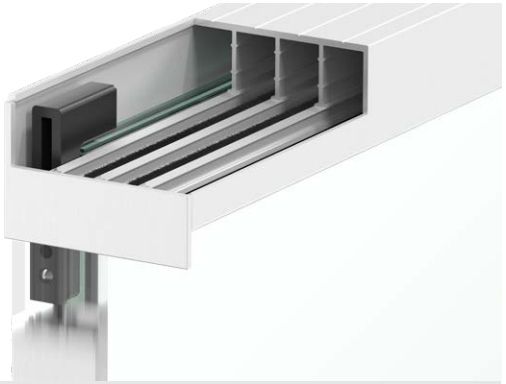
* The number of panels or rails can also be planned asymmetrically.
** Further designs possible on request.

Information on balcony systems

No systems may be assembled on the outside of balustrades or railings.

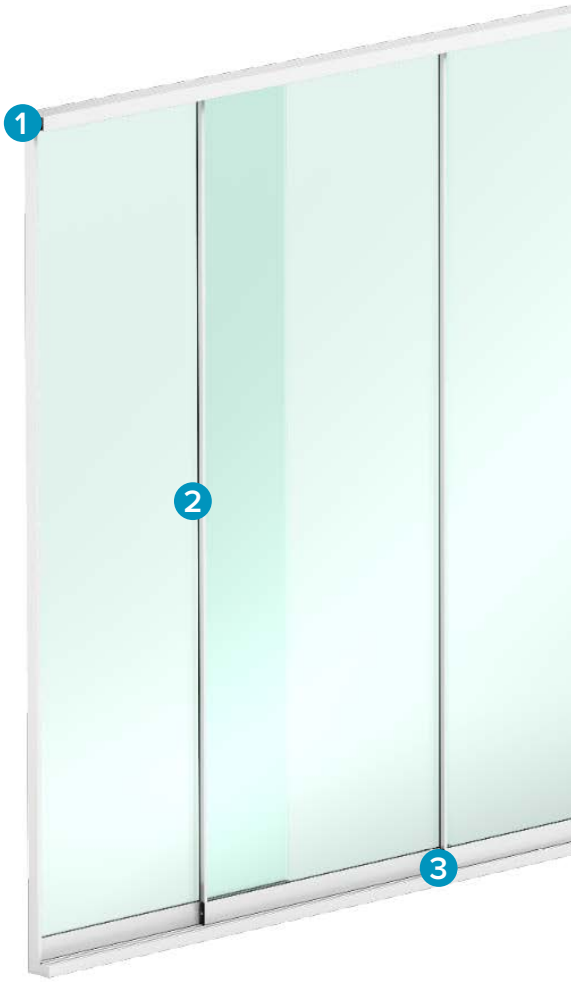
Standard details

1



Safety catch in the ceiling track

– Safety catch pre-assembled in the wall profile.
– Safety catches supplied with the system must be fitted at the panel joints.
– Protection against the panels becoming unhinged in the event of wind or burglary.



2

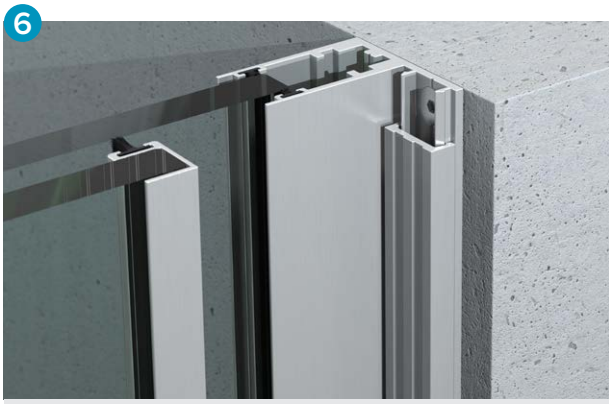
Panel overlap & brush profile

– Panel overlap of 40 mm.
– Vertical brush profiles included as standard.
– Protects against environmental influences such as noise, wind and driving rain.

3

Catch

– Concealed and integrated into the base profile.
– When closing, the panels are pulled closed.
– Quick and easy closing of the system.



Wall connection profile

– Easy and precise retraction and extension of the panel.
– The screw connections are concealed by the clip profile.
– The elegant visual effect rounds off the appearance of the system.

Stainless steel running track and rollers

– Electropolished and hardened rollers and running tracks in stainless steel.
– The abrasion-resistant running tracks and rollers are durable and low-maintenance even with panels weighing up to 85 kg.
– Easy and smooth guidance of the panels.

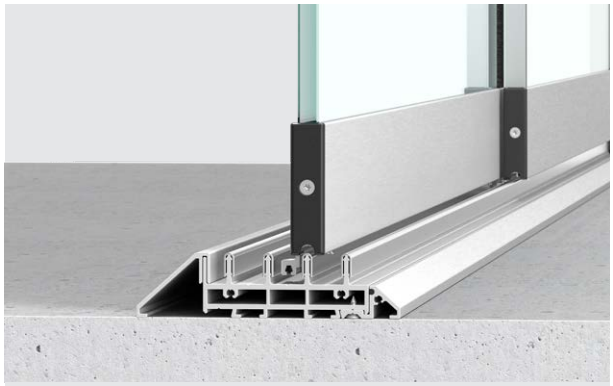
Two-piece bottom track

– Quick and easy installation with concealed screw connections.
– Controlled drainage to the outside through the running track and base profile.
– Base profile in system colour for a uniform appearance.

Extensions & options

One-piece bottom track

– Bottom track made of one profile in system colour with stainless steel running track.
– Drainage slots allow water to flow to the outside.
– Can be combined with various connection profiles.



Good accessibility due to threshold profiles

– Profiles are adapted to the system ex works for ease of assembly.
– Ensures obstacle-reduced passage & transition thanks to the flat 42° pitch.
– Ideal for indoor use, e.g. as a room divider.

Floor connection profile

– Can be applied to the one-piece & two-piece bottom track.
– Simple installation by inserting into the bottom track profile.
– For the inside floor seal. Allows for a seamless transition into the garden.

Weather strip mounting profile

– EPDM mounting profile for the integration of a weather strip or other sheet metal closure.
– Two prefabricated sheet metal standard types can be ordered for easy assembly.
– Ideal protection against the weather or dripping water.

Information on profile types

Further profile types: pocket profile and mounting profile.
Detailed information can be found in the document "Technical drawings".

Lock types

– Elegant locks with profile cylinder or profile cylinder cut-out, in clear or black anodised finish.
– Can be used for systems with 10 mm glass.
– The sliding handle can be optionally assembled (included as standard / not pre-drilled).

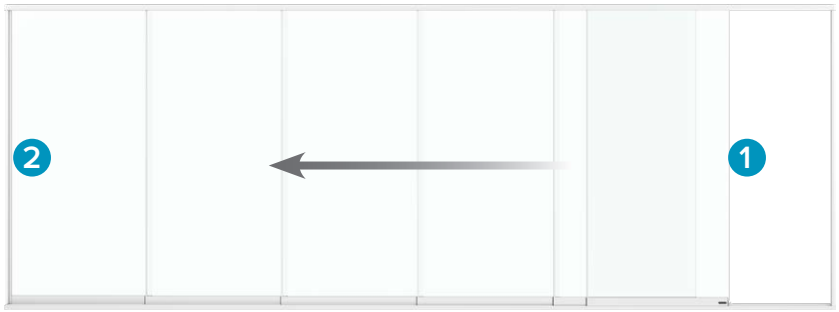
Locking in the wall profile (VW)

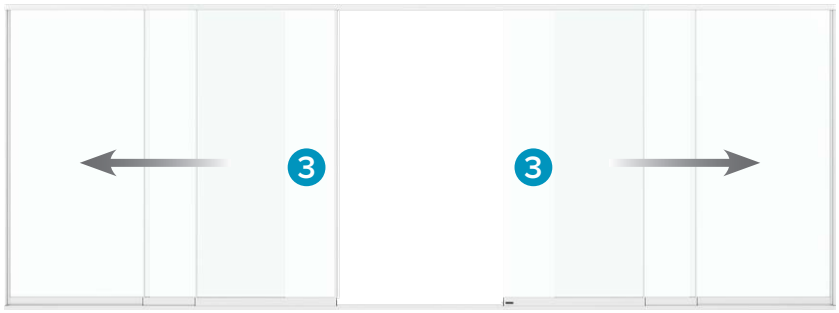
– The first-opening panel is locked and secured in the wall profile.
– Operating lever visually integrated into the wall profile.
– Easy operation at handle height is possible from both sides.

Locking in the bottom profile

– Use with corner systems ≠ 90°, systems without wall profile and rail extension.
– The first-opening panel is locked into the bottom profile and secured in place.
– Concealed locking in the base profile.

Handle types





Information

We recommend that you install the stopper with all handle and lock types.

GE

Type:	Glass single bore
Ø:	30 mm
Option:	Individual Ø

1 2 3 4

II

Type:	Sliding handle
Operation:	Inside
Material:	Stainless steel
Surface:	Brushed

1 3 4

ISI

Type:	Sliding handle
Operation:	Inside
Material:	Stainless steel
Surface:	Brushed

1 3 4

IB

Type:	Sliding handle
Operation:	Inside / outside
Material:	Stainless steel
Surface:	Brushed

1 2 3 4

ISB

Type:	Sliding handle
Operation:	Inside / outside
Material:	Stainless steel
Surface:	Brushed

1 3 4

IH

Type:	Sliding handle
Operation:	Inside
Material:	Stainless steel
Surface:	Brushed

2 4

IMB 65

Type:	Recessed handle
Operation:	Inside / outside
Material:	Stainless steel
Ø:	65 mm
Surface:	Brushed

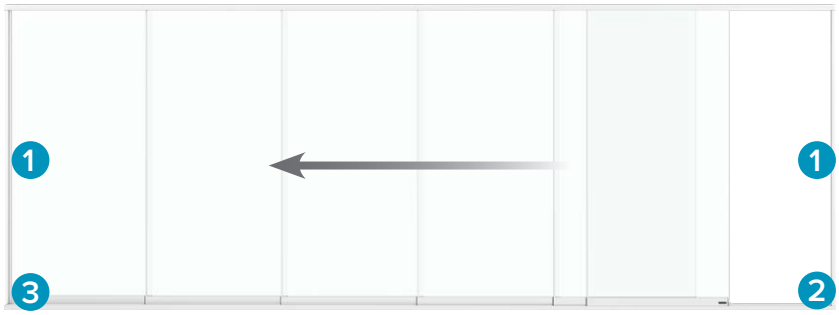
1 2 3 4

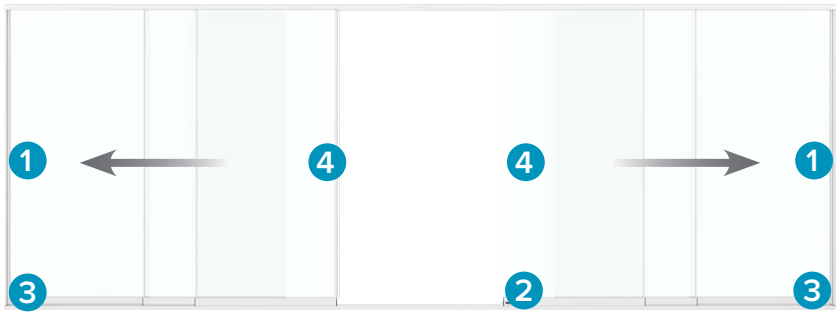
IB/IH length specifications

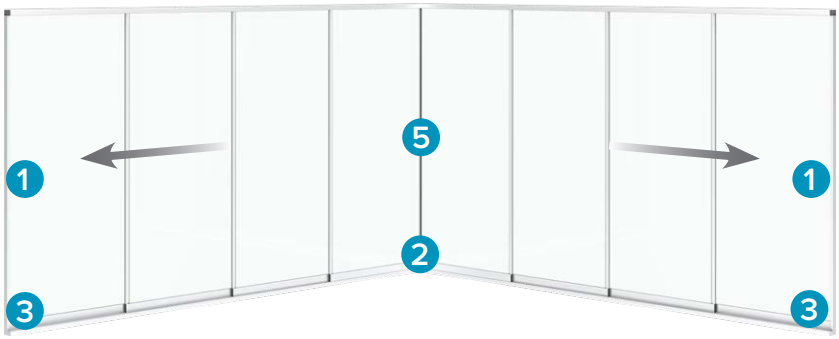
Handle length is defined based on the number of rails:

- IB1/IH1: 45 mm = 2- and 3-rail
- IB2/IH2: 57 mm = 4-rail
- IB3/IH3: 71 mm = 5- and 6-rail

Lock types







VD (standard)

Type:	Turn lock
Operation:	Inside
Material:	Aluminium
Surface:	Black, grey or white

2

VS (standard)

Type:	Service lock
Operation:	Inside
Material:	Aluminium

3

VW
(locking in the wall profile)

Type:	Lock
Operation:	Inside
Material:	Aluminium
Surface:	Brushed
Colour:	Clear or black anodised

1

VM
(centred-opening locking)

Type:	Lock
Operation:	Inside
Material:	Aluminium
Surface:	Brushed
Colour:	Clear or black anodised

4

VZ
(lock case)

Type:	Lock
Operation:	Inside / outside
Material:	Aluminium
Surface:	Brushed
Colour:	Clear or black anodised

1 4

VZE
(90° corner lock case)

Type:	Lock
Operation:	Inside
Material:	Aluminium
Surface:	Brushed
Colour:	Clear or black anodised

5

VE
(90° corner locking)

Type:	Lock
Operation:	Inside
Material:	Aluminium
Surface:	Brushed
Colour:	Clear or black anodised

5

Options: lock case

- VZ: Lock with cylinder (incl. 2 keys)
- VHZ Lock with semi-cylinder
- VPZ: lock with profile cylinder cut-out

Centred opening with strike box (GK)

Information on lock cases

The sliding handle can be optionally assembled (included as standard / not pre-drilled).

Options: corner lock

- VZE: Lock with cylinder (incl. 2 keys)
- VHE Lock with semi-cylinder
- VPE: lock with profile cylinder cut-out

GSW 17 with integrated sliding panels

ShadingPanel 17

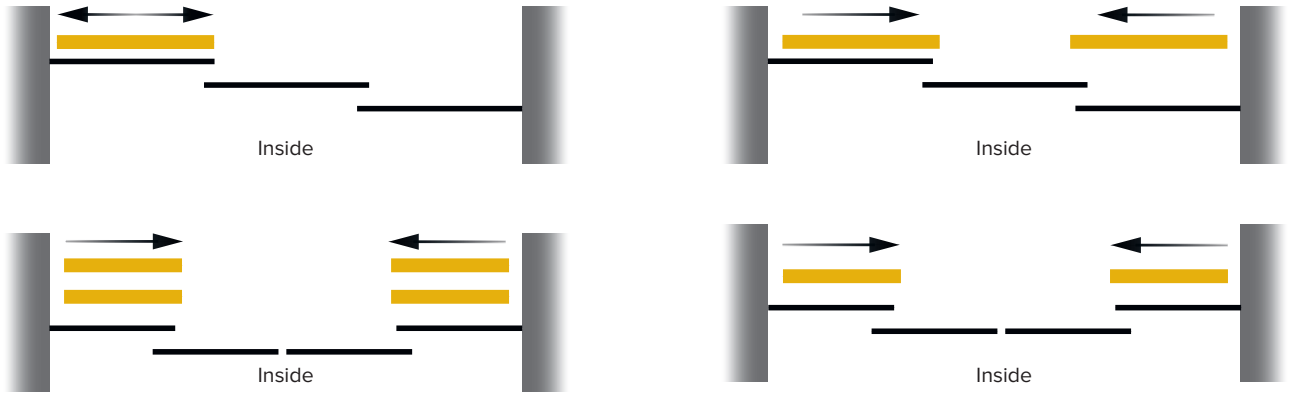
On particularly sunny days, we need suitable protection from too much sunlight. In combination with the GSW 17, the ShadingPanel 17 sliding panels provide the ideal amount of shade.
The ShadingPanel 17 sliding panels can be effortlessly moved into the desired position. As the sun moves round during the day the sliding panels can be swiftly adjusted.

Technical details

- Sliding panels made of high-quality aluminium
- Stainless steel rollers
- Slat tilt of 45°
- Gap dimensions between slats = 12 mm
- Sliding panel width = 500 mm to 1200 mm
- Sliding panel height = 800 mm to 2700 mm
- Sliding panel depth = 40 mm
- Exterior protrusion = 22 mm

Individually combined

Depending on the size of the system and the number of GSW 17 panels, the sliding panels can be integrated in different designs.



Bespoke options are available on request.

ShadingPanel 17 GSW 17

GSW 17 & ShadingPanel 17

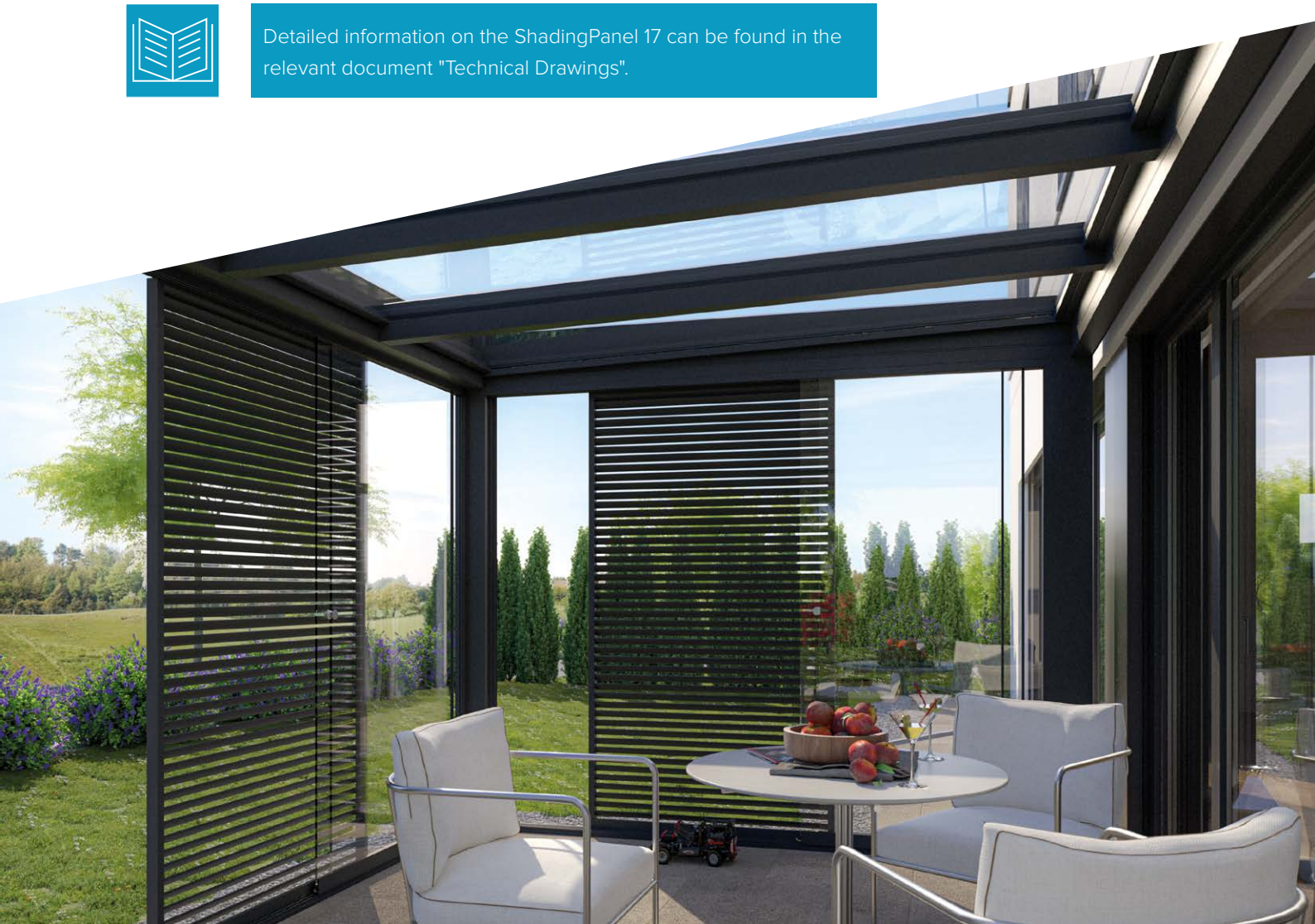
Integration in ceiling profile

– The ShadingPanel 17 fits perfectly into the ceiling profile of the GSW 17 without an additional clip-on profile.
– Safety catches provide protection against unintentional unhooking or in windy conditions.
– The assembly times for the GSW 17 with an integrated ShadingPanel 17 are almost identical.

Integration in bottom profile

– The ShadingPanel 17 runs without an additional profile on the running tracks of the GSW 17.
– Stainless steel running technology for a quiet and durable system.
– The protrusion at the outside edge of the bottom track is 22 mm.

Detailed information on the ShadingPanel 17 can be found in the relevant document "Technical Drawings".



FAQs about the GSW 17

Here you will find further information and details as well as answers to frequently asked questions.

For which uses and areas of application is the GSW 17 suited?
The GSW 17 is a thermally non-separated system, which is ideal as glazing for your balcony or terrace, in summer gardens, or as a space-saving room divider in the home or in offices.

How does the bottom track need to be fitted to ensure optimal drainage?
The GSW 17 is always supplied with a two-piece bottom track. The base profile is provided with an additional profile that guides water directly to the drainage holes and thus prevents water accumulation. The running track clicks into the base profile in a simple and secure manner, which provides for a clean look.

Which system sizes and panel dimensions can be achieved with the GSW 17?
The largest possible system size depends on the panel dimensions as indicated in the panel diagram. The maximum system size is determined by the defined panel width and panel height, as well as the desired opening type.

Does the system offer protection from road noise?
Yes, the GSW 17 reduces the noise from outside by up to 18 db according to the results of tests performed in line with the ISO 717-1 standard.

Which glass thicknesses are used for the GSW 17 and are there certain limits here?
Single-layer safety glass (ESG) with a thickness of 8 mm or 10 mm is used for the GSW 17. 8 mm glass is always used for systems up to 1800 mm high, and 10 mm glass is used for system heights up to 2700 mm. The details can also be taken from the panel diagram.

Does an all-glass sliding wall help save energy and heating costs?
The large glass surfaces of a balcony or terrace glazing heat up the interior through natural solar gain, even on overcast days. By opening the inner door this warm air will permeate the inner room also. On warmer days, the glazing can simply be opened up for natural ventilation. This function manages natural energy and maximises efficiencies that reduce energy costs.

Take advantage of the wide range of Sunparadise products and our proven expert consultations. Further information can be found at

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