

# Mondrian CWS-65 Slim

## Product Information Sheet



### Frame

Ultra slim thermally broken metal frames with elegant industrial design.

Frame Material

Galvanised Steel / Stainless Steel / Corten Steel / Architectural Bronze

Frame Depth 65mm

Typical Ven t + Frame Profile 47mm

### Opening Configurations

Available as both windows and doors, in fixed and opening configurations. Also available in shaped or arched openings.

Doors

Hinged casement doors, double doors (French Doors), doors with side/over lights  
Single Hinged Casement Door / Double Doors / Pivot

Windows

Side Hung / Top Hung / Bottom Hung / Fixed / Multi light casements

### Glass

Insulated glazing as standard with additional glass options available.

Typical Glass Spec Double Glazed with Low E coating and Argon Gas filling

Typical Ug Value 1.0 W/m<sup>2</sup>K

Glass thickness typically from 26-28mm, glass up to 40mm thick possible on request.

### Performance

Typical Thermal Performance from 1.38 W/m<sup>2</sup>K using typical glass spec. See page xx for more details.

Air Permeability Class 4 in accordance with EN 12207

Water Resistance up to Class E1200 in accordance with EN 12208

Wind Load up to Class C5 in accordance with EN 12210

Security PAS 24 certified

Acoustic Reduction Rw 42-43 dB depending on glass specification

Resistance to Repeated Opening Class 2 in accordance with EN 12400, 10,000 openings and closings

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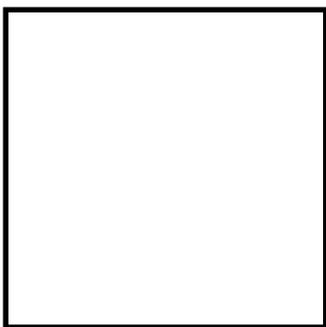
# Mondrian CWS-65 Slim

## Product Information Sheet

### Materials + Finishes

The beauty of the CWS-65 Slim system is that it can be crafted from many different architectural metals. These can then be finished in various methods to create an installation unique to your project.

#### Galvanised Steel



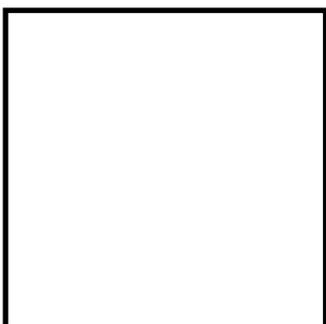
PPC any RAL colour

#### Corten Steel



Weathered with Wax

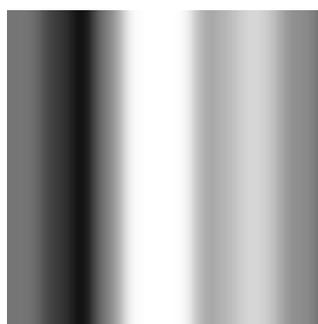
#### Stainless Steel



PPC any RAL colour



Brushed



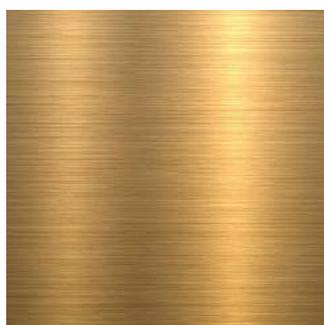
Polished

#### Architectural Bronze

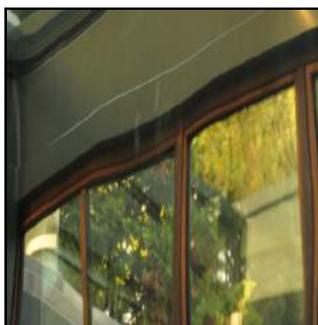


Patinated

BMA Light / Medium /  
Dark



Brushed



Polished

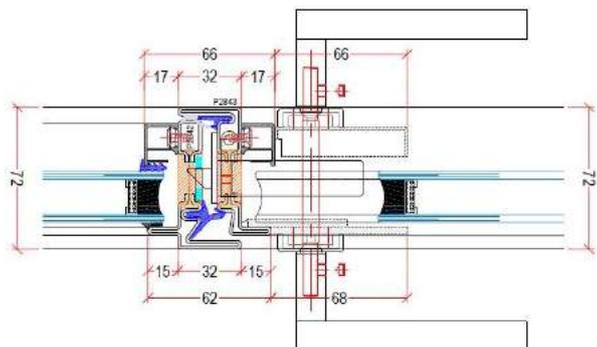
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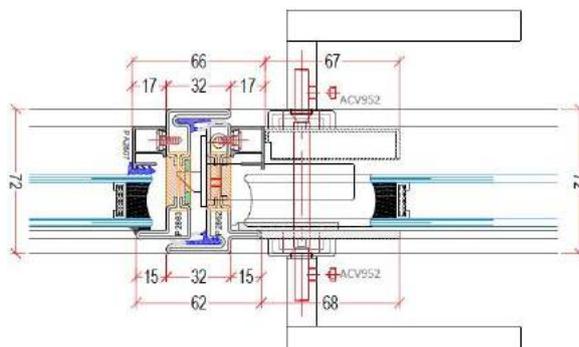
Opening Type: Side Hung Doors (Single or Double)

### Section Details

Inward Opening Double Side Hung



Outward Opening Double Side Hung



### Hinges

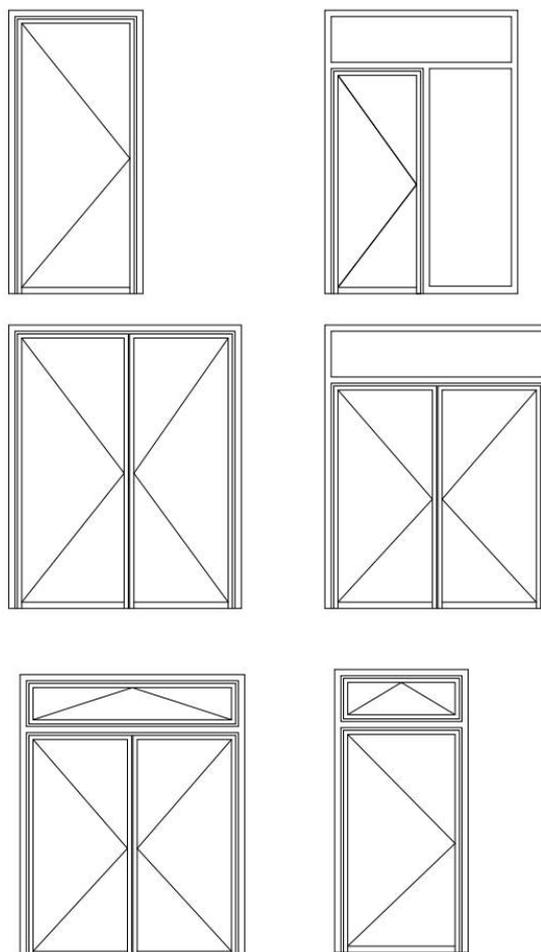
Up to 100kg



Three wing screw on hinge  
90mm tall x 15mm diameter  
Available in

- Galvanised steel
- Corten steel
- Scotch-brite stainless steel (AISI 304)

### Example Opening Types



### Opening Details

Max Opening Size 1000mm wide x 2600mm tall per leaf. Large sizes may be available on request.

Inward / Outward Opening

Additional hinges required for doors over 2.3m tall

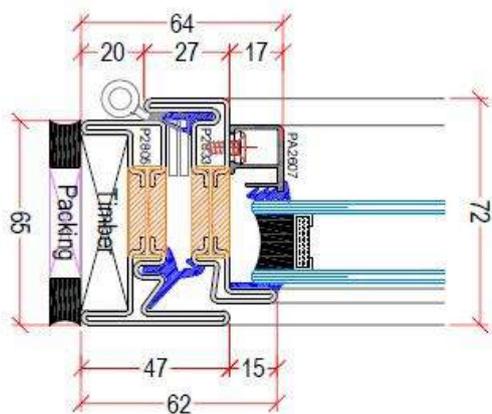
# Mondrian CWS-65 Slim

## Product Information Sheet

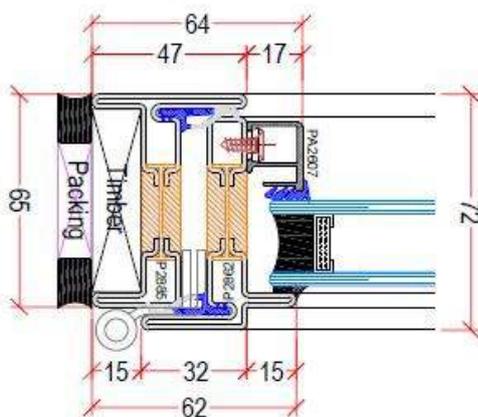
Opening Type: Single Side Hung Windows

### Section Details

Inward Opening



Outward Opening



### Hinges

Up to 100kg



Three wing screw on hinge  
90mm tall x 15mm diameter  
Available in

- Galvanised steel
- Corten steel
- Scotch-brite stainless steel (AISI 304)
- Burnished stainless steel (AISI 304)

### Opening Details

Max Opening Size 1000mm wide x 2600mm tall.  
Large sizes may be available on request.

Inward / Outward Opening

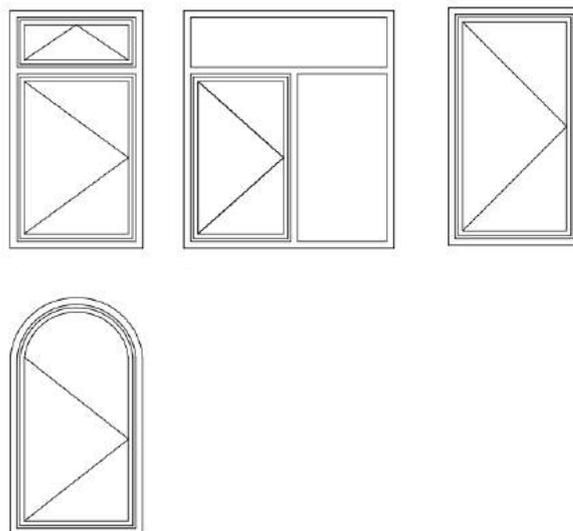
Additional hinges required for windows over 1.3m tall

### Accessories

Window Limiter available to restrict opening

Handles, see page 13

### Example Opening Types



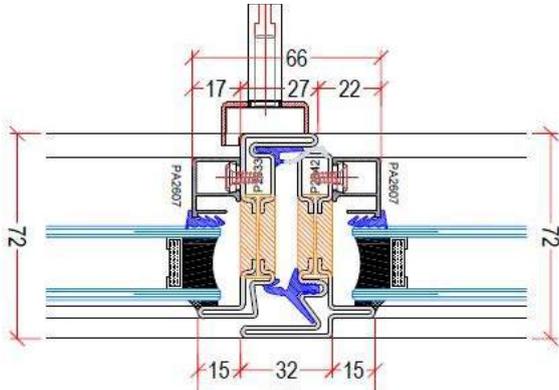
# Mondrian CWS-65 Slim

## Product Information Sheet

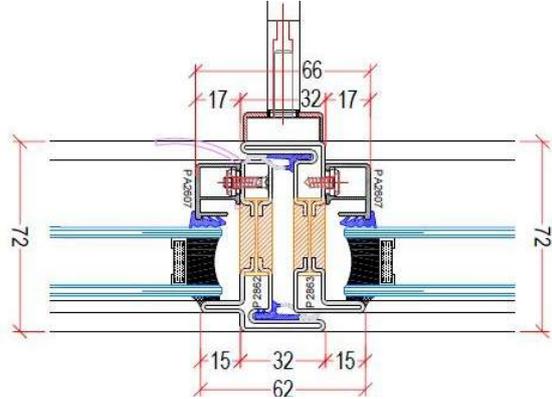
Opening Type: Double Side Hung Windows

### Section Details

Inward Opening



Outward Opening



### Hinges

Up to 100kg



- Three wing screw on hinge  
90mm tall x 15mm diameter  
Available in
- Galvanised steel
  - Corten steel
  - Scotch-brite stainless steel (AISI 304)
  - Burnished stainless steel (AISI 304)

### Opening Details

Max Opening Size 2000mm wide x 2600mm tall per opening. Large sizes may be available on request.

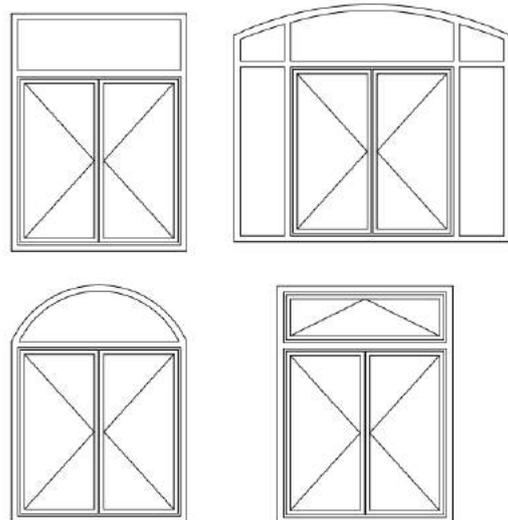
Inward / Outward Opening

Additional hinges required for windows over 1.3m

### Accessories

Window Limiter available to restrict opening  
Handles, see page 13

### Example Opening Types



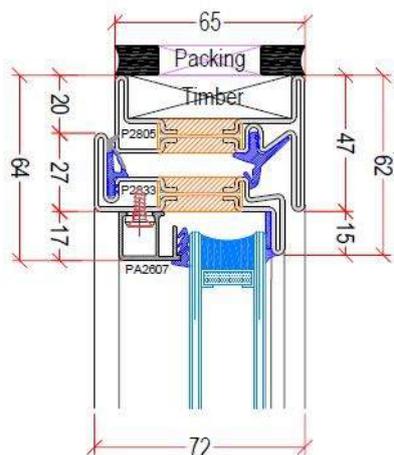
# Mondrian CWS-65 Slim

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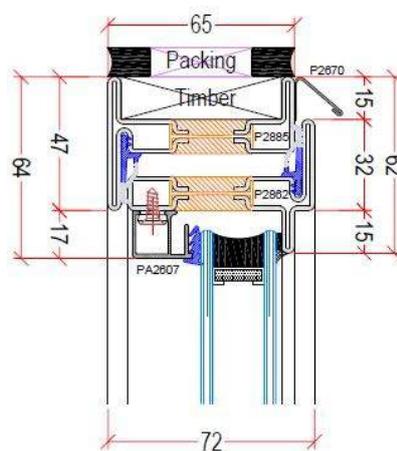
Opening Type: Top Hung Windows

### Section Details

Inward opening Window head detail



Outward opening Window head detail



### Maximum Vent Weights

Up to 100kg



Side Arms (concealed hinges)

### Opening Details

Max Opening Sizes 900mm wide x 1800mm tall

Outward Opening Only

Up to 40kg



If this hinge is used you will also need to include an opening limiter to control the opening.

Three wing screw on hinge  
90mm tall x 15mm diameter

Available in

- Galvanised steel
- Corten steel
- Scotch-brite stainless steel (AISI 304)
- Burnished stainless steel (AISI 304)

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# Mondrian CWS-65 Slim

## Product Information Sheet

Opening Type: Bottom Hung Windows

### Opening Details

Max Opening Sizes 1300mm wide x 800mm tall

Inward Opening Only

Always require a stay and finger catch

### Maximum Vent Weights

Up to 40kg

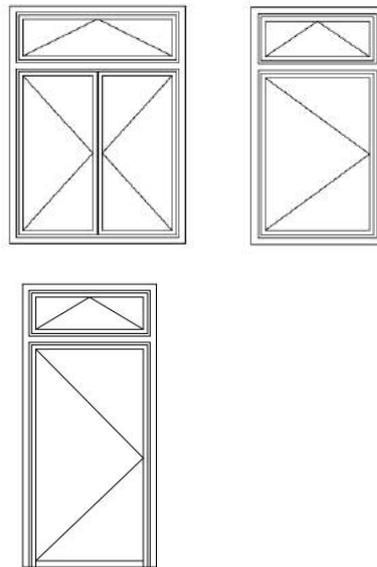


Three wing screw on hinge  
90mm tall x 15mm diameter

Available in

- Galvanised steel
- Corten steel
- Scotch-brite stainless steel (AISI 304)
- Burnished stainless steel (AISI 304)

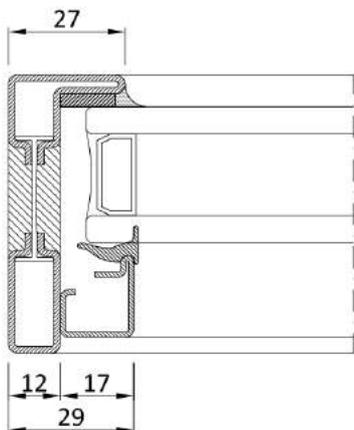
### Example Opening Types



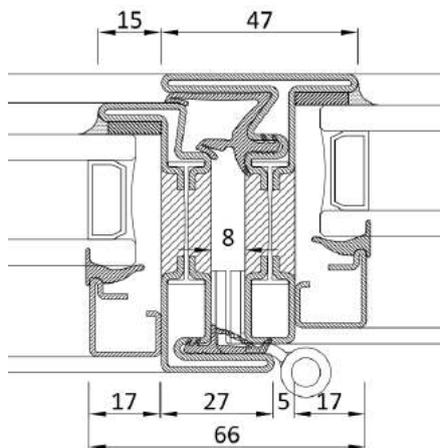
# Mondrian CWS-65 Slim Product Information Sheet

## Additional Frame Sections

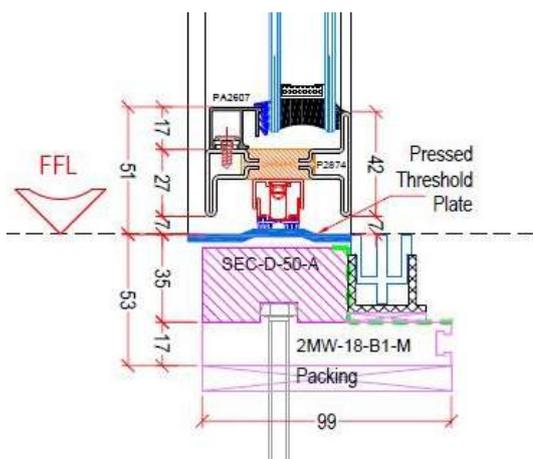
### Fixed Frame



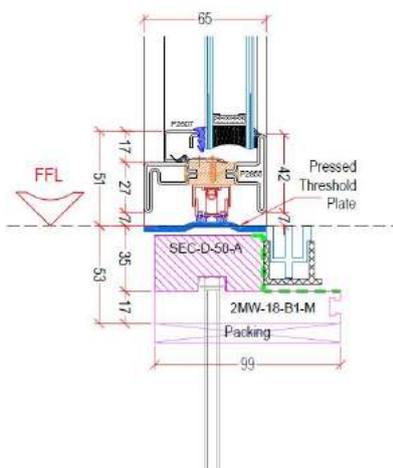
### Opening meeting Fixed



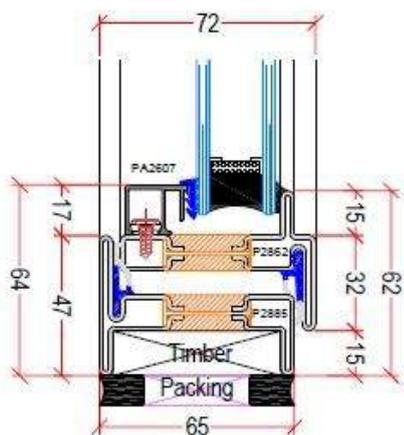
### Outward Opening Door Base Detail



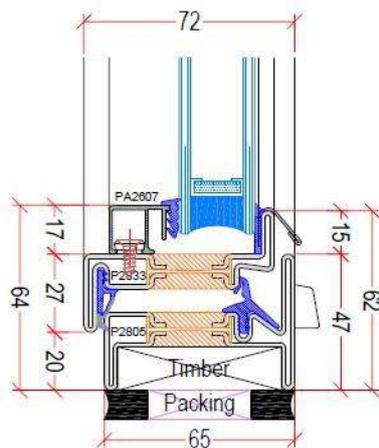
### Inward Opening Door Base Detail



### Outward Opening Window Base Detail



### Inward Opening Window Base Detail



# Mondrian CWS-65 Slim

## Product Information Sheet

### Overview of Weather Resistance Testing

A variety of different opening types have been tested (at different sizes) to create an accurate overview of the system's performance under real life weather conditions. This table indicates the results from various certification tests carried out at approved third party testing facilities.

Opening Configuration	W x H of test product	Air Permeability (EN 12207)	Water Resistance (EN 12208)	Wind Resistance (EN 12210)
Double leaf casement window	1230 x 1480	4	8A	C4
Double leaf door	1550 x 2310	2	1A	C1
Bottom hung window with fixed light	1300 x 2050	4	E1200	C4
Double leaf casement window	2010 x 2710	4	7A	C3
Double leaf door (as emergency exit)	1980 x 3010	2	-	B3
Double leaf door with overlight	3800 x 3450	3	-	C1
Top hung, outward opening window	900 x 1764	4	7A	C3
Double leaf window with fixed light	3800 x 3500	4	8A	B3

### Overview of Acoustic Reduction Testing

Opening Configuration	W x H of test product	Glass Rw Value (dB)	Sound Insulation (dB), EN ISO 171-1; EN ISO 140-3
Double leaf casement window	1230 x 1480	40	42 dB (-2; -6)
Double leaf casement window	1230 x 1480	42	43 dB (-2;-5)
Double leaf casement window	1230 x 1480	45	43 dB (-1;-4)

# Mondrian CWS-65 Slim Product Information Sheet

## Glazing Bar Options

### True Glazing Bars



### Applied Glazing Bars



#### Frame Size

Dictated by the steel window/door system used. Ranges from 36mm upwards.

#### Frame Size

Standard is 25mm but bar size can be tailored to project.

#### Glazing Bar Configuration

Various designs available but must be designed with consideration to glass sizes and weights. You don't want to create doors or windows that are top heavy.

#### Glazing Bar Configuration

Can be whatever design, configuration or direction you require. Designs can be very intricate or designed to match existing or neighbouring buildings.

#### Interface with Outer Frame

The connection between the glazing bar and any surrounding frame is seamless. The joints are welded, polished and finished so that all elements of the frame become one with no visible joints.

#### Interface with Outer Frame

If you look closely you will be able to see a small joint between the glazing bar and the outer frame. The glazing bar will also sit very flat to the glass whereas the surrounding frame will have a slight relief.

#### Cost + Lead Time

True glazing bars will be more expensive and have a longer lead time than applied. This is because every frame connection has to be welded which adds at least 2 hours fabrication time per joint/weld.

#### Cost + Lead Time

Even when you include for dummy spacer bars within the insulated glass units, applied glazing bars will have a reduced cost over true glazing bars. This is due to the reduced manufacture and welding time.

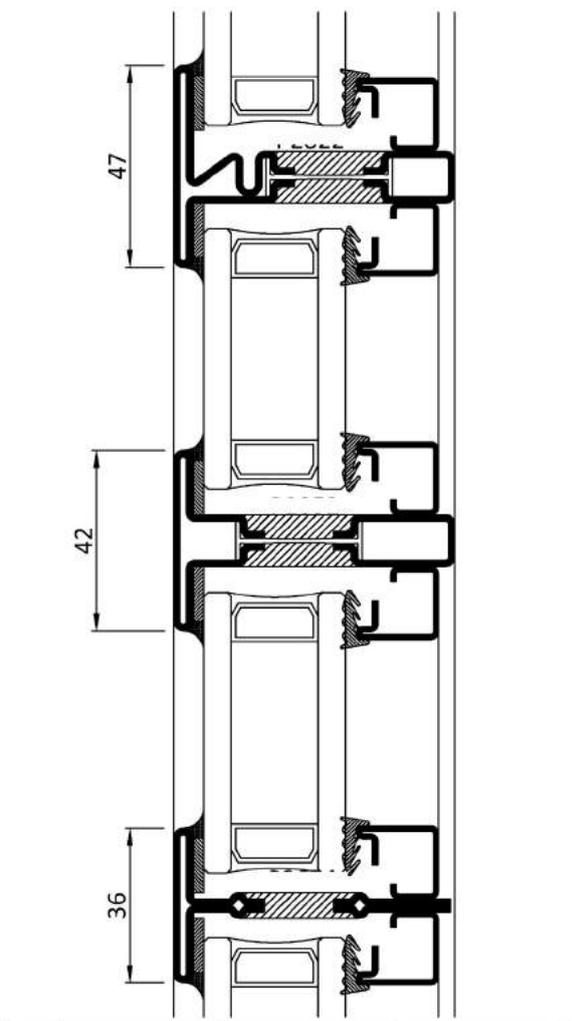
# Mondrian CWS-65 Slim Product Information Sheet

## Glazing Bar Options

### True Glazing Bars

#### Transom + Mullion Options

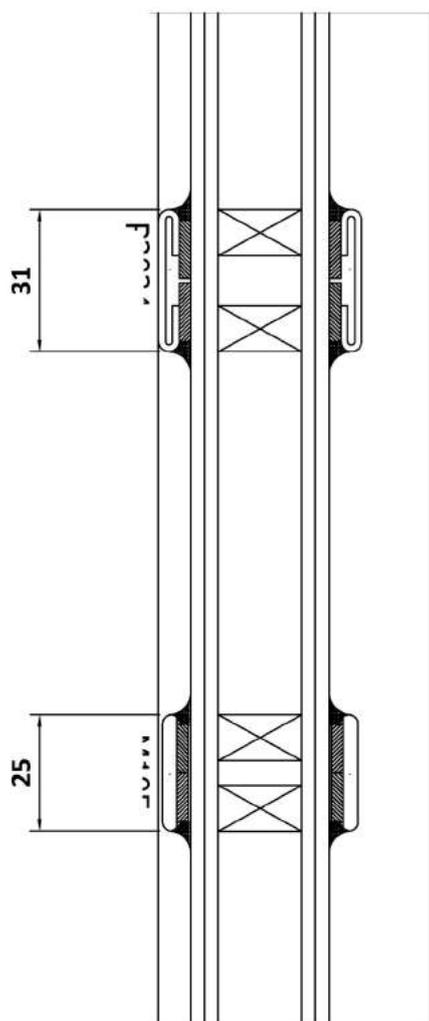
The options for True Glazing Bars are predetermined by the system chosen. Below is an example of the true glazing bar options for the Mondrian® CWS-65 Slim.



### Applied Glazing Bars

#### Transom + Mullion Options

Applied glazing bars can be many different sizes and shapes. Below are the standard glazing bar options for applied glazing bars in the Mondrian® CWS-65 Slim.



#### Thermal Performance

True glazing bars reduce the overall  $U_w$  value of a system.

#### Thermal Performance

Applied glazing bars do not effect the thermal performance of a system.

# Mondrian CWS-65 Slim

## Product Information Sheet

### Overview of Thermal Performance Testing

The overall  $U_w$  value for the metal framed window or door will depend on the individual project specifics; this includes the opening configurations, glass specification, framing material and glass to frame ratio. This has to be calculated specifically for each project. Below is a list of tested performances to give you an idea how your installation might perform.

<b>U<sub>g</sub> = 1.1</b>	One leaf door		Two leaf door		One leaf window		Two leaf window	
	Area < 3.6 m <sup>2</sup>	Area > 3.6 m <sup>2</sup>	Area < 3.6 m <sup>2</sup>	Area > 3.6 m <sup>2</sup>	Area < 2.3 m <sup>2</sup>	Area > 2.3 m <sup>2</sup>	Area < 2.3 m <sup>2</sup>	Area > 2.3 m <sup>2</sup>
Galvanised Steel	1.5	1.4	1.7	1.53	1.57	1.47	1.78	1.64
Corten Steel	1.5	1.4	1.7	1.53	1.57	1.47	1.78	1.64
Stainless Steel	1.48	1.38	1.67	1.5	1.55	1.45	1.74	1.61
Architectural Bronze	1.51	1.4	1.72	1.53	1.59	1.48	1.79	1.65

<b>U<sub>g</sub> = 0.7</b>	One leaf door		Two leaf door		One leaf window		Two leaf window	
	Area < 3.6 m <sup>2</sup>	Area > 3.6 m <sup>2</sup>	Area < 3.6 m <sup>2</sup>	Area > 3.6 m <sup>2</sup>	Area < 2.3 m <sup>2</sup>	Area > 2.3 m <sup>2</sup>	Area < 2.3 m <sup>2</sup>	Area > 2.3 m <sup>2</sup>
Galvanised Steel	1.15	1.03	1.37	1.17	1.23	1.11	1.45	1.3
Corten Steel	1.15	1.03	1.37	1.17	1.23	1.11	1.45	1.3
Stainless Steel	1.12	1.02	1.34	1.15	1.2	1.09	1.41	1.27
Architectural Bronze	1.15	1.04	1.38	1.18	1.24	1.12	1.47	1.31

# Mondrian CWS-65 Slim

## Product Information Sheet

### Handle Options

#### For Windows



**T Handle**  
 Cut Ends, Round Handle  
 116mm tall  
 12mm deep  
 Available in

- Paintable brass
- Burnished brass
- Polished and chrome brass
- Polished brass
- Scotch-brite stainless steel



**T Handle**  
 Round Ends, Round Handle  
 116mm tall  
 12/15mm deep  
 Available in

- Paintable brass
- Burnished brass
- Polished and chrome brass
- Polished brass



**L Handle**  
 Cut Ends, Square Handle  
 Available in

- Paintable Stainless steel
- Corten steel
- Scotch-brite stainless steel



**L Handle**  
 Cut Ends, Round Handle  
 Available in

- Paintable brass
- Burnished brass
- Polished and chrome brass
- Polished brass
- Scotch-brite stainless steel



**L Handle**  
 Round Ends, Round Handle  
 Available in

- Paintable brass
- Burnished brass
- Polished and chrome brass
- Polished brass



**Oval Handle**  
 80mm tall  
 30 deep  
 Available in

- Paintable brass
- Burnished brass
- Polished and chrome brass
- Polished brass



**L Cockspur Handle**  
 Round Ends, Round Handle  
 Available in

- Paintable brass
- Burnished brass
- Polished and chrome brass
- Scotch-brite stainless steel

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# Mondrian CWS-65 Slim

## Product Information Sheet

### Handle Options

#### For Doors



- L Handle  
Cut Ends, Square Handle  
116mm tall  
15mm deep  
Available in
- Paintable Stainless steel
  - Corten steel
  - Scotch-brite stainless steel



- L Handle  
Cut Ends, Round Handle  
116mm tall  
15mm deep  
Available in
- Paintable brass
  - Burnished brass
  - Polished and chrome brass
  - Polished brass
  - Scotch-brite stainless steel



- L Handle  
Round Ends, Round Handle  
116mm tall  
15mm deep  
Available in
- Paintable brass
  - Burnished brass
  - Polished and chrome brass
  - Polished brass



# Mondrian CWS-65 Slim

## Product Information Sheet

### Mondrian at the Showroom

Various installations of the Mondrian Range are available to view at the Sky House Design Centre, home to IQ.

To make your personal appointment to view the Mondrian Range just contact the team at IQ who will be happy to book your personal appointment with a technician.



#### Materials + Finishes

Each installation of Mondrian at the Showroom is finished in a different material and finish to showcase the broad range of design available. As well as built structures in numerous finishes (all under true UK weather conditions) we also have a large material wall with even more framing finishes available to view and touch.

#### Window + Door Configurations

At the showroom we are showcasing the Mondrian systems in a range of opening types including doors, fixed glazing and side hung elements.

#### Additional Samples

In addition to the large collection of built examples we have on show we also have a catalogue of additional hand samples. These showcase exactly how the systems go together, where the thermal breaks are and how deep each section is.

#### Book an Appointment

Contact your sales representative at IQ to book your personal visit.



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## Mondrian CWS-65 Slim Product Information Sheet

### How to Specify a Mondrian Glazing System

Mondrian Windows and Doors are first choice for architects and designers all over the UK looking for a high end steel solution for their design. If you would like to specify a Mondrian product for your project just speak to the team at IQ who would be happy to assist.

#### Speak to the team at IQ

The team at IQ are the experts in our Mondrian product range. If you are considering using a Mondrian product on your project speak to the team at IQ who will be able to advise you on the best solution for your intended design, ensure that all specification criteria are met and advise you on any feasibility areas of the installation you may not have considered.

#### Get a Quotation

We advise our customers to get a quotation for intended Mondrian installations from IQ. This allows us all to ensure that the preferred product and design is within budget. If it is not we can help you adjust the specification to reach all performance, design and budgetary requirements.

#### Add us to your NBS Specification

To assist you in specification we have created individual NBS Specification sheets for each Mondrian product. These easy to navigate documents contain all the vital information needed for specification. They are available for your to complete on your own alternatively ask your sales representative at IQ to complete this on your behalf.

#### Place the Order

When ready you (or your client or the builder) can then place the order for your Mondrian Door or Window with us. A full in house handover will take place and your project will be passed to the contracts and design team. Once your project deposit is placed we will then undertake full design drawings for the Mondrian installation. Please allow at least 20 working days for the design process. The project will be appointed a dedicated contracts manager who will oversee the installation process.

#### Any Questions?

Contact the team at IQ who will be happy to help.

[hello@iqglassuk.com](mailto:hello@iqglassuk.com)

01494 722 880

Sky House, Raans Road, Amersham,  
Buckinghamshire, HP6 6FT

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# Mondrian CWS-65 Slim

## Product Information Sheet

### Finishes + Material Specification

One of the architectural advantages of the Mondrian Range is the broad selection of materials and finishes it is available in. When choosing the material and finish for your Mondrian installation it is important to keep in mind the maintenance, usage and location of the glazing to ensure you select one most suited to your environment.

#### **Galvanised Steel**

The act of galvanising steel is designed to create a protective zinc layer to the external face of the steel material. This protective layer then protects the internal steel structure from rust or corrosion. The galvanisation process is applied to the entire steel section/sheet which is then cut down to order.

When galvanised steel is cut, welded and cleaned this protective zinc layer on the outside of the steel is slightly compromised at those areas.

Although powder coating gives an element of protection to these joints and edges there is a small chance that oxidisation could occur on the corner joints or cut edges of a galvanised steel profile.

If steel systems are installed within a 'harsh environment' then the chance of oxidisation and premature aging increases. A 'harsh environment' is any area where higher than average chemicals, salts or compounds are within the air. This includes, but is not limited to;

- Swimming pool environments
- Projects near a natural water source
- Projects within 5km of the coast or sea

If your steel window/door is to be installed in a 'harsh environment' you may want to consider specifying a stainless steel frame. Stainless steel has a much higher density and a lower chance of corrosion than mild or galvanised steel so is better suited to these environments.

#### ***Powder Coated Finishes for Steel***

Galvanised, Mild and Stainless Steel can all be powder coated to finish the metal in the RAL colour of your choice.

Dry Powder Coating is the most common method. This involves the even application of charged polyester particles to the frame which are then baked to create a coloured seal to the metal frame. Dry Powder Coating may not be suitable for architectural metal works with intricate detailing as the polyester particles will slightly fill in any delicate notches, lines

or detailing.

For these more decorative elements of metalwork Wet Powder Coating is better suited. This coloured finish is applied by hand using a wet spray. The process of hand applying the spray may result in slightly different colour thicknesses across the surface of the metal.

#### ***Care of Powder Coated Surfaces***

If you chip or scratch a powder coated surface you will expose the base material of the metal and create a weak spot in the metal's defences against corrosion. This point is then an area where moisture can penetrate the metal substrate and cause corrosion or oxidisation.

Care must be taken in the handling of metal elements to ensure that no damage is inflicted to the powder coated surface. This applies to the installation process, post installation construction (where other works will be carried out on site) and once the project is completed.

Information regarding the protection and handling of metal profiles and products should be shared with all that may have interaction with the specialist architectural metal installation. This includes other trades, contractors, cleaners and the end user.

#### **Patinated Bronze**

The process of patinating bronze speeds up the natural aging process of architectural bronze through the application of chemicals to the surface. The length of time the chemicals are left on the bronze then determines the 'colouration' of the patina (light, medium or dark BMA).

Once the preferred bronze finish has been achieved another chemical is applied to the architectural bronze to stop the accelerated aging process. This does not stop the bronze from continued aging overtime. It is important to note that Patinated Bronze is an organic finish and likely to change, darken and colour overtime. This then further accentuates the

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# Mondrian CWS-65 Slim

## Product Information Sheet

### Finishes + Material Specification

antique finish to the bronze frames.

Positioning of the metal, exposure to sun and rain and manual handling of the frames will all help contribute to the changing appearance of the bronze overtime.

#### ***Steel Lacquering for External Use***

Lacquering of steel or architectural metal can be used in some instances to seal the architectural finish to the metal and reduce the speed of further aging. However, lacquering is only recommended for internal applications in non-harsh environments.

If lacquered steel is installed externally or in harsh environments you may see 'blistering' or other defects in the lacquered surface exposed to the elements.

#### **Corten/Weathered Steel**

Corten (or weathered) steel was originally designed for large industrial projects such as bridges. The material was designed to naturally oxidise on the surface overtime. This oxidised layer on the outside of the steel then creates a protective coating to the metal underneath.

In order to create architectural metal works with a weathered finish upon installation we can accelerate this aging process using chemicals. The metal will then be installed on site with a pre-weathered appearance.

To protect other building finishes from the 'flaking' and staining inherent with the use of Corten Steel we seal the rusted surface with wax. The purpose of the wax application is to reduce the amount of staining to surrounding building finishes, such as flooring and adjacent building finishes.

In order to maintain this protective layer the wax must be reapplied regularly. The regularity of reapplication depends on the environmental factors of the installation.

#### ***Building Staining from Corten Steel***

Due to the engineered properties of Corten (Weathered) Steel the surface is changeable. When Corten is exposed to the elements, such as wind and rain, small particles of the rusted surface will flake off and settle on surrounding surfaces. This is called staining.

When selecting Corten Steel for your project you should carefully consider the materials used in close proximity to the steel installation. Light coloured surfaces or porous materials are more likely to show this staining.

#### **Cleaning of Architectural Metal**

Architectural metals are artisan building materials and careful consideration and attention should be taken for their aftercare.

Do not use harsh abrasives or chemicals

Do not use scrubbing brushes or sponges with bristles or rough surfaces

Do not use acidic cleaning products

Clear water with a neutral pH is recommended

Soft wiping with a non-abrasive cloth is recommended

Frames and glass must be fully dried after cleaning

When the glass is cleaned it is important to ensure that all water is dried from the glass surface, in particular in any crevices or corners of the glass where it meets the frame. If this is not done the water may cause corrosion to the profiles.

All parties involved with the maintenance and cleaning of the installations must be given a copy of the O+M manual to ensure proper handling. This includes all external cleaning services, property maintenance and building users.