

## MB-86N ST/SI/SI+

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Window & door system with thermal insulation



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LET'S BUILD A BETTER FUTURE

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Thank you for your interest in Aluprof's products.

Welcome to the group of professionals using BIM models in Autodesk® Revit. All of our Revit families are created on the basis of our company's real products.

In this document we would like to present the possibilities of the BIM models of MB-86N windows and doors.

## 1. Technical parameters of MB-86N windows.

AIR PERMEABILITY	Class 4, EN 12207
WATERTIGHTNESS	up to class E4800 Pa, EN 12208
WIND LOAD RESISTANCE	up to class C5, EN 12210
THERMAL INSULATION	$U_w = 0,67 \text{ W/(m}^2\text{K)}$
CONTENT OF THE MATERIAL RECYCLATE	69,2%

## 2. Technical parameters of MB-86N doors.

AIR PERMEABILITY	Class 4, EN 12207:2001
WATERTIGHTNESS	up to Class E1350 Pa, EN 12208
WIND LOAD RESISTANCE	up to Class C5, EN 12210
THERMAL INSULATION <sup>1</sup>	$U_d = 0,9 \text{ W/(m}^2\text{K)}$ for 1-sash door $U_d = 1,0 \text{ W/(m}^2\text{K)}$ for 2-sash door
CONTENT OF THE MATERIAL RECYCLATE	69,2%

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<sup>1</sup> The U value has been calculated with the following assumptions:

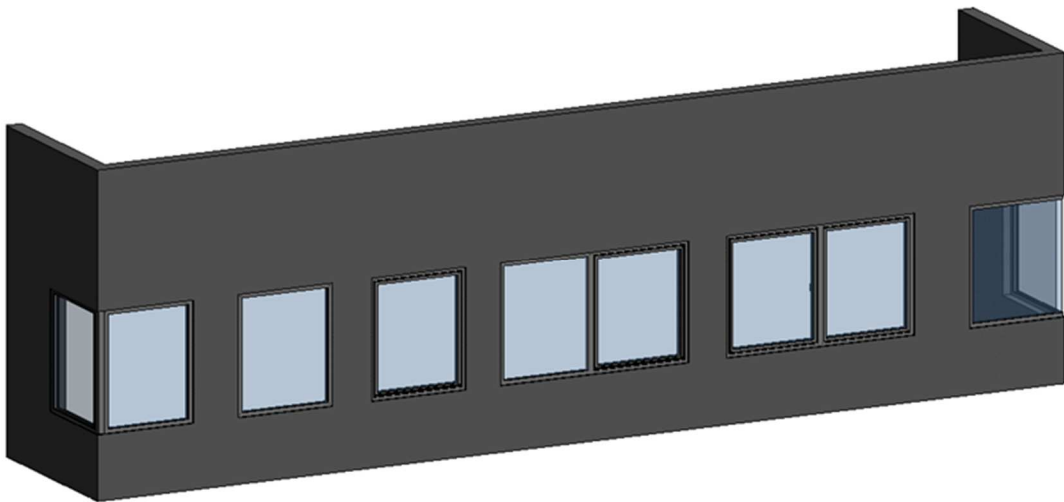
- two-chamber glazing with  $U_g=0,5 \text{ W/m}^2\text{K}$
- a warm edge space bar
- MB-86N SI window dimensions: L x H = 1230 x 1480 mm (fixed window)
- MB-86N SI+ door dimensions: L x H = 1112 x 2190 mm (1-sash)  
L x H = 1485 x 2190 mm (2-sash)

For other calculation variants please contact the Aluprof's Technical Support Department.

### 3. The MB-86N windows.

There are seven Revit families for two variants of thermal insulation (ST/SI) available for download, created according to the configuration of sashes and opening type:

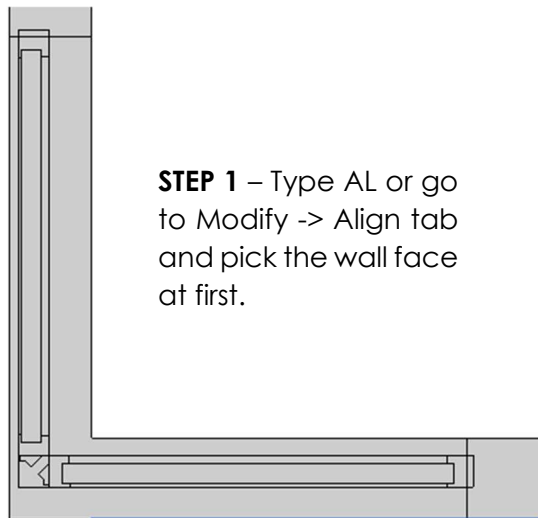
- Single FIX window
- Single Tilt and Turn window
- Double Tilt and Turn + FIX window
- Double Tilt and Turn + Side-hung window
- Double Tilt and turn window with floating mullion
- Vertical Bottom-hung + FIX window
- Corner FIX window
- Corner FIX window with structural glazing



In Edit Type under Dimensions group, there is a parameter called **Exterior wall face offset** which controls the value of the structure offset from the outer wall surface (40 mm by default) and a **Mounting space** parameter, which determines the depth of the mounting space (15 mm by default).

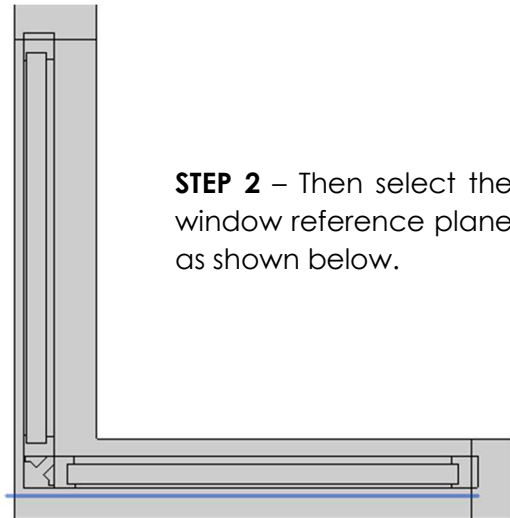
#### 3.1. Inserting the corner window.

With the corner window in place in the wall, lock the window reference plane to the outer face of the wall:



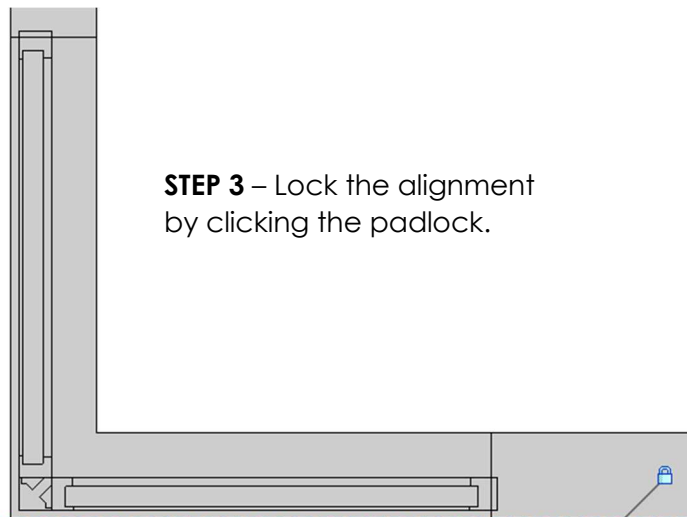
**STEP 1** – Type AL or go to Modify -> Align tab and pick the wall face at first.

Walls : Basic Wall : Wall 1 : Reference



**STEP 2** – Then select the window reference plane as shown below.

Windows : Aluprof\_MB-86-Sl\_E\_Alu\_Window-Corner-2sash-FIX-FIX\_ENG\_R-00045-S1 : 1230 x 1480 : Reference

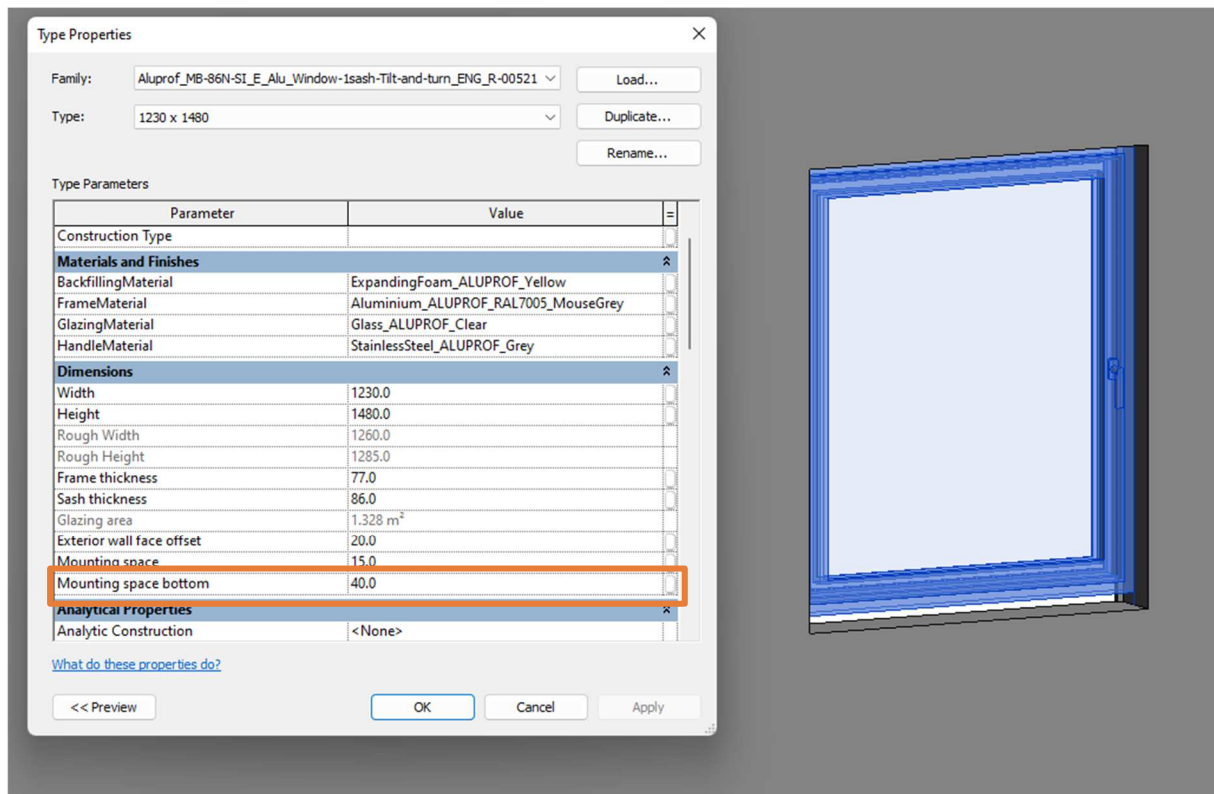
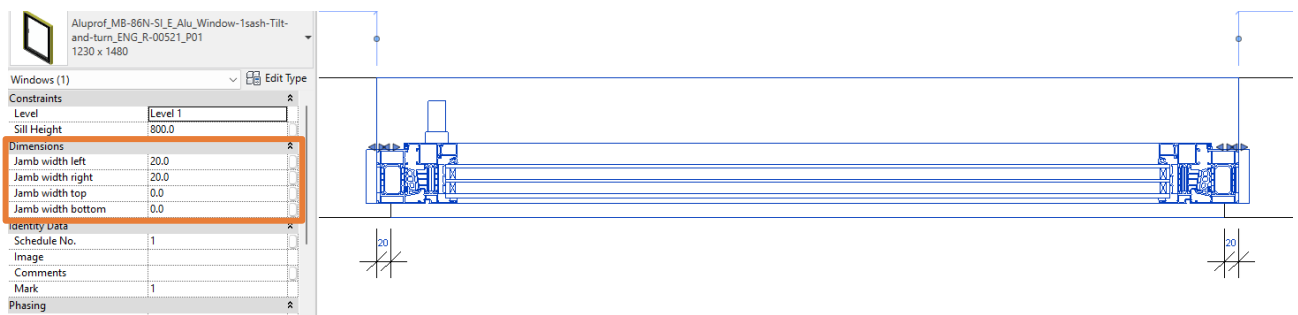


**STEP 3** – Lock the alignment by clicking the padlock.

Thanks to this, when changing the wall type, the window will remain in the same place and will move according to the specified value of **Exterior wall face offset** parameter as well.

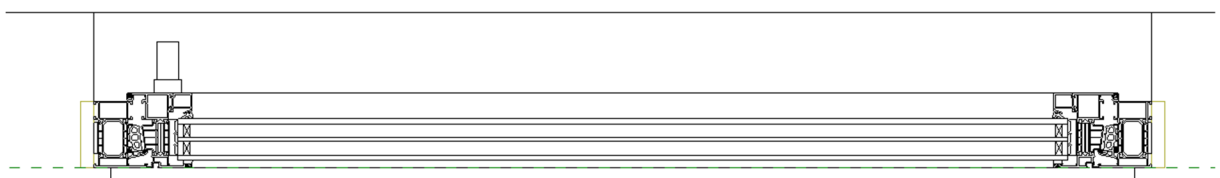
### 3.2. Window parameters.

Aluprof's window models contain additional parameters for adjusting wall cut-outs. There are four instance parameters changing the width of wall jambs: **Jamb left / Jamb right / Jamb top / Jamb bottom**. In order to adjust void space under the frame change the value in **Mounting space bottom** type parameter.



**Important!** In order for the model to behave correctly while changing dimensions the desired value should be inserted into the parameter. Changing dimensions with the grips may result in incorrect geometry adjustment.

The outer face of the frame has been set as the wall closure point.



A new detail category called **MB\_detail** has been added to the models. All the low and medium detail lines can be modified in the Object Styles tab at once. In order to change the graphics of the high level details use the imported AutoCAD layers.

#### Object Styles

Model Objects Annotation Objects Analytical Model Objects Imported Objects					
Filter list: <multiple> v					
Category	Line Weight		Line Color	Line Pattern	Material
	Projection	Cut			
[-] Curtain Panels	1	2	Black	Solid	
[-] Curtain Systems	2	2	RGB 000-127-000	Solid	
[-] Curtain Wall Mullions	1	3	Black	Solid	
[-] Data Devices	1		Black		
[-] Detail Items	1		Black	Solid	
[-] <Hidden Lines>	1		Black	Dash	
[-] Heavy Lines	5		Black	Solid	
[-] Light Lines	1		Black	Solid	
[-] MB_detail	1		Black	Solid	
[-] Medium Lines	3		Black	Solid	

Model Objects Annotation Objects Analytical Model Objects Imported Objects					
Category	Line Weight		Line Color	Line Pattern	Material
	Projection	Cut			
[-] Imports in Families	1		Black	Solid	
[-] _MB_akcesoria_0.15	1		Black	Solid	Render Material 95...
[-] _MB_inne_0.15	1		Black	Solid	Render Material 10...
[-] _MB_izolacje_0.09	1		Black	Solid	Render Material 0-...
[-] _MB_profile_0.25	1		Black	Solid	Render Material 25...
[-] _MB_profile_tworzywo...	1		Black	Solid	Render Material 16...
[-] _MB_szklo_0.15	1		Black	Solid	Render Material 0-...
[-] _MB_uszczelki_0.15	1		Black	Solid	Render Material 0-...

## 4. The MB-86N Doors.

There are four Revit families available for download:

- Outward opening single door
- Inward opening single door
- Outward opening double door
- Inward opening double door



#### 4.1. Parameters of the doors.

For both windows and doors, in Edit Type under Dimensions group, there is a parameter called **Exterior wall face offset** which controls the value of the structure offset from the outer wall surface (20 mm by default) and a **Mounting space** parameter which determines the depth of the mounting space (15 mm by default).

Additionally, door models contain a **Mounting space bottom** type parameter that can be used to adjust the void space under the sill and an instance **Floor finish level** parameter.

Type Properties

Family: Aluprof\_MB-86N-SI\_E\_Aluprof-Door-Sgl-Outward-Opening\_EI

Type: 900 x 2100 mm

Load...

Duplicate...

Rename...

Type Parameters

Parameter	Value
GlazingMaterial	Glass_ALUPROF_Clear
HandleMaterial	StainlessSteel_ALUPROF_Grey
HingesMaterial	StainlessSteel_ALUPROF_Grey
<b>Dimensions</b>	
Width	1112.0
Height	2189.5
Rough Width	1142.0
Rough Height	1177.0
Clear opening width	900.0
Clear opening width with touchbar	824.0
Clear opening height	2100.0
Frame Width	77.0
Thickness	
Mounting space	15.0
Mounting space bottom	50.0
Exterior wall face offset	20.0
Touchbar depth	76.0
<b>Analytical Properties</b>	
Analytic Construction	<None>

[What do these properties do?](#)

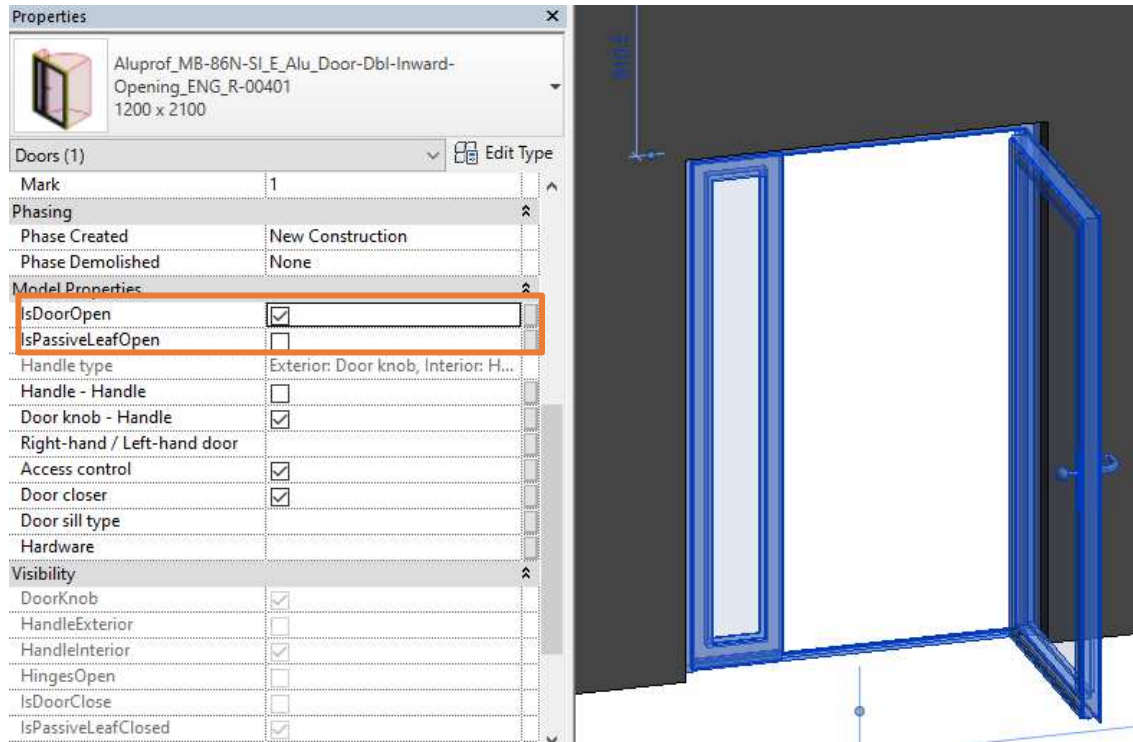
<< Preview

OK

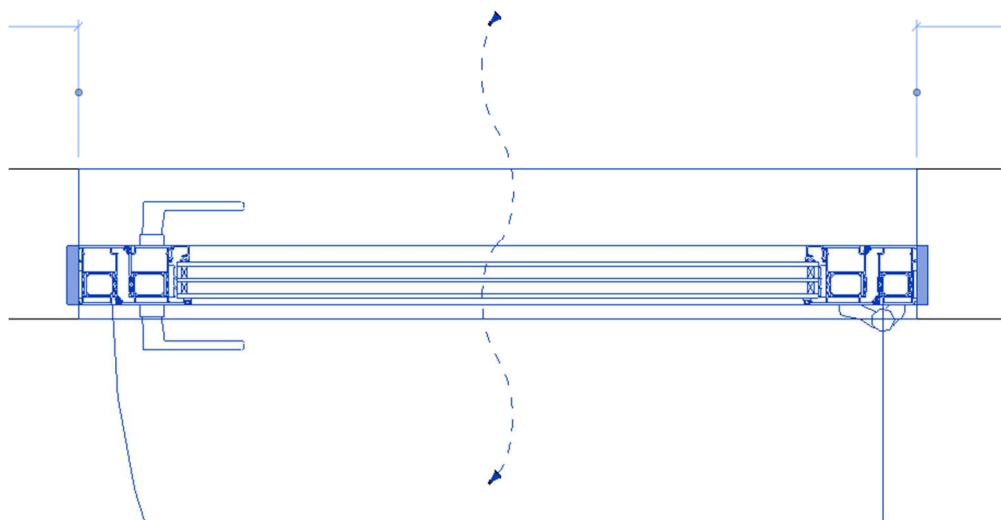
Cancel

Apply

The door models contain a parameter **IsDoorOpen/IsPassiveLeafOpen** that allows to open one or both sashes. However, the passive sash can only be opened after opening of the active sash first.



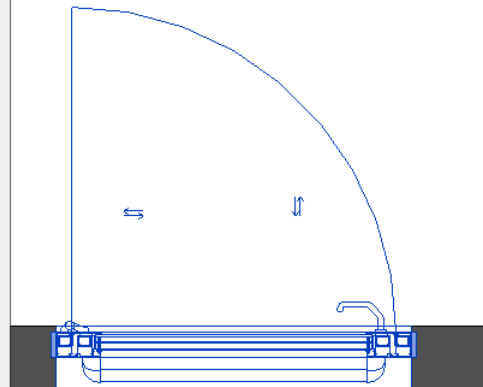
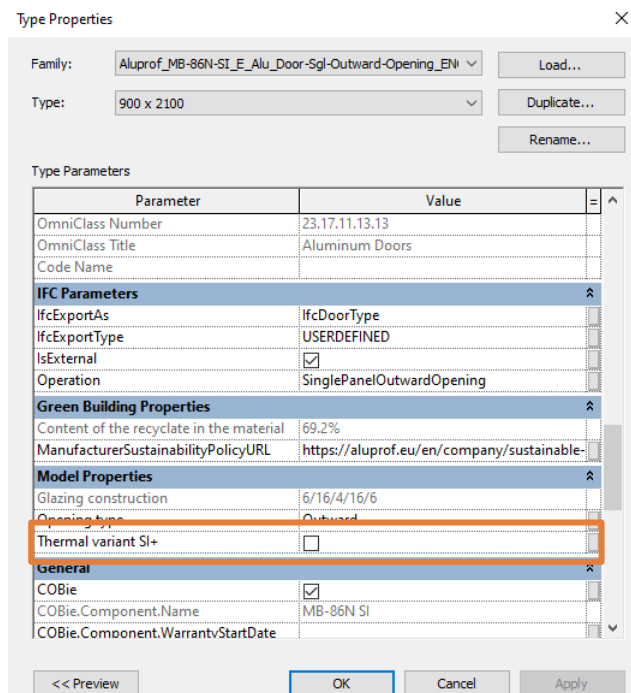
The **Room Calculation Point** has been added to facilitate creation of schedules (see image below). Similarly to window models, the outer face of the door frame marks the **Wall Closure** and the models are equipped with a new **MB\_detail** detail lines category.





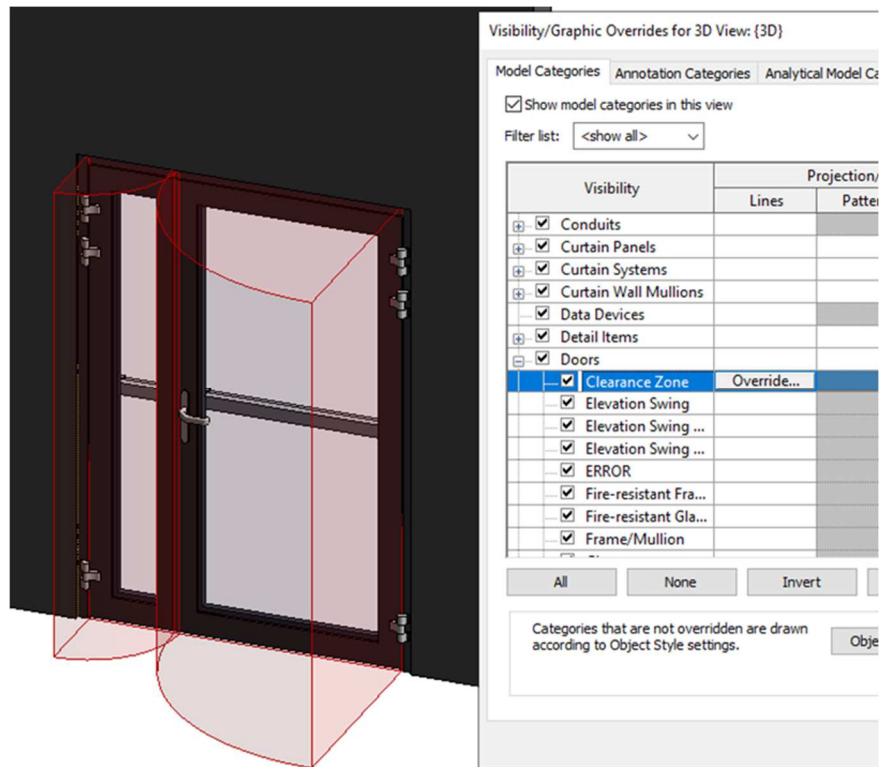
## 4.2. Thermal variant SI+.

The doors of the MB-86N system are available in three thermal variants (ST/SI/ SI+). The models of **ST** and **SI** variants are created as individual families. In order to get the **SI+** thermal variant, firstly open the desired model of MB-86N SI door and then in Edit Type under Model Properties tick a **Thermal variant SI+** parameter. The details of the model and parameter's values will adjust automatically.



## 4.3. Clearance Zone.

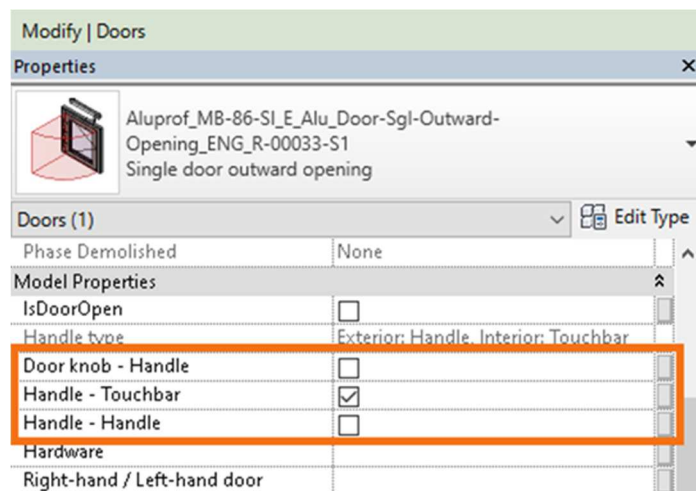
The Clearance Zone is visible by default. To turn it off, go to Visibility/Graphics Overrides (VG keyboard shortcut) → go to the Door or Window section → uncheck the Clearance Zone.



#### 4.4. Door handle configurations.

The availability of door handle configurations depends on the door opening type (inward or outward). The following configurations can be found in our models:

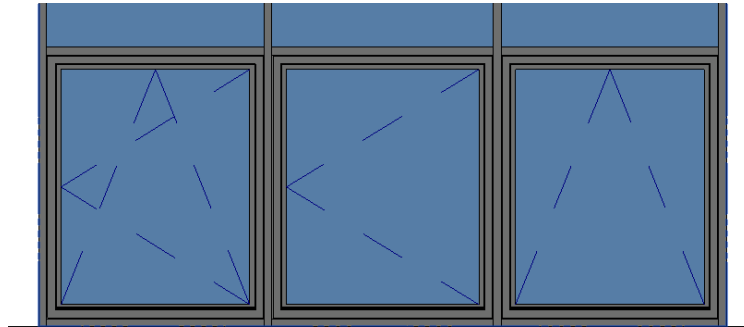
- Door knob - Handle
- Touchbar - Handle
- Handle - Handle



## 5. MB-86N models for curtain wall.

There are five Revit families available for download:

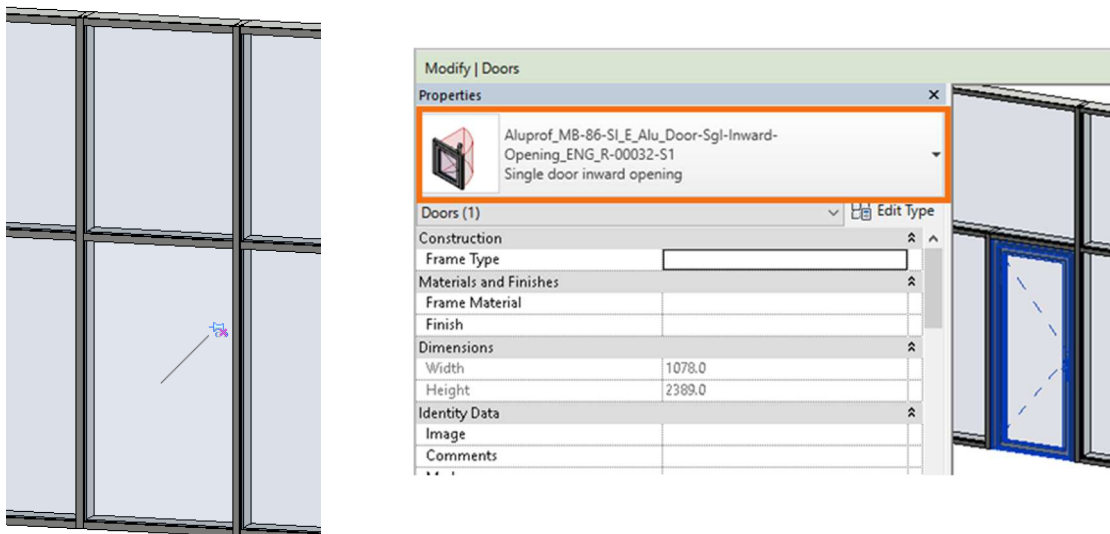
- Outward opening single door
- Inward opening single door
- Outward opening double door
- Inward opening double door
- Inward opening single window (in three types: Tilt&Turn, Single-side Casement, Bottom-hung Casement)



All of above Revit families are compatible with most of Aluprof's facades that are available for download on our website:

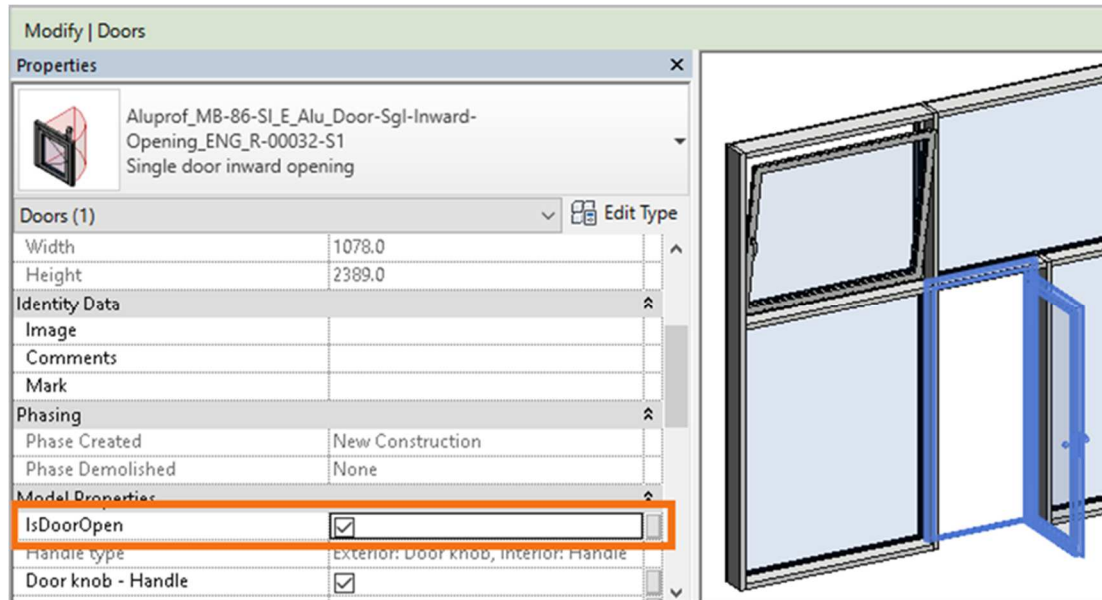
<https://aluprof.eu/pl-en/architects/catalogue-for-architects/choose-system#/>

In order to place a Revit model in a façade, firstly you have to load it into the target project, then select with the TAB button the panel in which a window or a door model is to be inserted, then “unpin” the selected panel by clicking on the pin and choose the desired MB-86N model from the dropdown list.

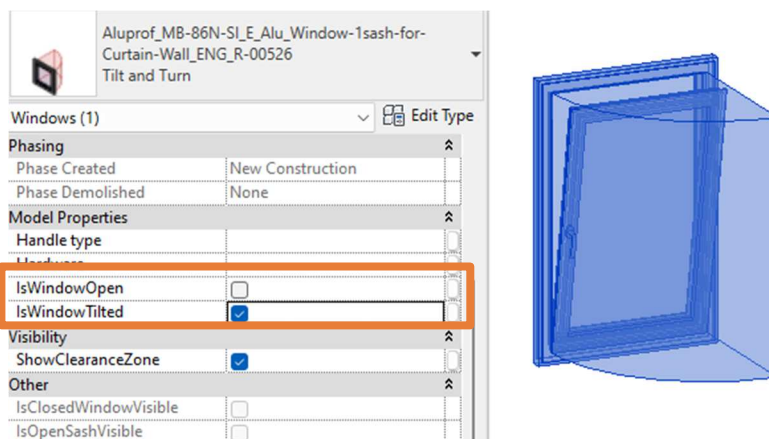


## 5.1. Geometry of the door and window models.

Both window and door models contain a parameter **IsWindowOpen** / **IsWindowTilted** / **IsDoorOpen** that enables users to “open” the objects in the façade.



The MB-86N window: Tilt and Turn can be open in two different ways, however only one opening option should be checked at once.



Similarly to the wall-based door, models contain a 3D clearance zone and the possibility to change the configuration of handles.

## 6. Additional Parameters

The MB-86N window & door Revit families have a number of additional parameters that can be included in schedules:

DOORS	Access control Door Closer Door sill type Hardware Handle type Right-hand / Left-hand door Schedule No.
WINDOWS	Hardware Handle type Schedule No.

These parameters have been left blank to be filled by the user.

In addition to the parameters directly related to the model properties, our Revit families include information about the **COBie**, **IFC** and **UniFormat**, **MasterFormat** standards.

**IMPORTANT!** The models are created based on the sample cross-sections from Aluprof's catalogues and do not constitute a binding offer. In order to verify the applied solutions and to meet the technical requirements, please contact the Aluprof's Technical Support Department. Contact details can be found at:

[www.aluprof.com/en/architects/contact](http://www.aluprof.com/en/architects/contact)

We hope this short tutorial will help you use our BIM models more effectively in your projects.

If you have any questions or concerns, please do not hesitate to contact us.

BIM Technology Department  
Aluprof S.A.