



## **Fire curtains and smoke barriers AVAPS**

**FIBREroll**

**SMOKEbarrier AT**

**SMOKEbarrier ST**

## **Revit BIM library**

**Instructions for use**

BIM components are created in Autodesk Revit 2019 | Created by: Roman Macháček, [www.bimfire.cz](http://www.bimfire.cz)

NOTIFICATION: ANY FIGURES, DIAGRAMS OR DRAWINGS IN THIS MANUAL MUST NOT BE USED UNLESS AUTHORIZED BY AVAPS s.r.o.



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## 1 Introduction

This document describes the use of AVAPS BIM components in Revit software's building information model. BIM component, or in terms of Autodesk Revit "Family", is the constitutive element of building information model (i.e., Revit project). That means a project consists of Families, and the user uses different Families (e.g., structural parts, walls, roofs, windows and doors) to complete a model of a building.

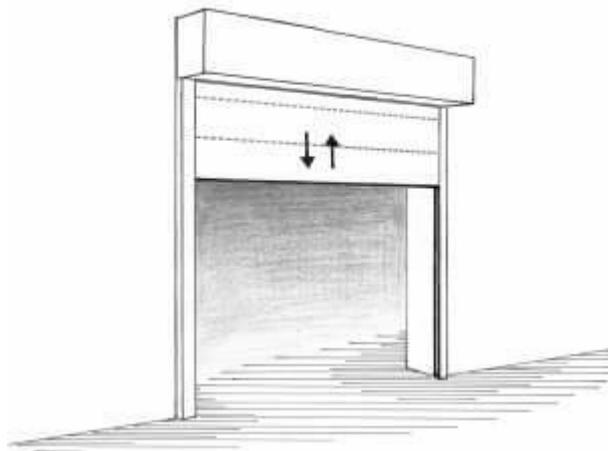
We provide predefined Revit Families that correspond to our products: AVAPS fire shutters and AVAPS smoke barriers. All properties and the logic of components (i.e., how the product behaves) are already defined and there is no need to edit them in Family Editor. Thanks to predefined logic of dimensions limit, the component itself notifies the user whether it is possible to manufacture a product of designed dimensions or not.



## 2 Revit BIM AVAPS components

### 2.1 FIBREroll – Fire curtain

This product is a loosely embedded component of Door category. Dimensions of this component are shown in three levels of detail (Coarse/Medium/Fine).



This component contains following predefined properties:

- System parameters
  - General information about the product
- Dimension parameters
  - Particular dimensions of component parts
- Limit parameters
  - Rules used for assessment whether it is possible to manufacture a product of designed dimensions
- Informative parameters
  - Technical information like colour, fire rating and specifications of the power input
- Parameters for facility management
  - Parameters that serve for further use of the model (e.g., for revisions)

You can find technical specifications of the product on AVAPS website:

<https://en.avaps.cz/products/fire-shutters/>



## 2.2 SMOKEbarrier AT – Textile active smoke barrier

This product is line-based component of Special equipment category. Dimensions of this component are shown in three levels of detail (Coarse/Medium/Fine). One component is one segment of the whole barrier. For the bill of quantities, it is possible to use the same mark for each segment of the whole unit. For area and length dimensions, there is an option to sum all segments of the same mark.

This component contains following predefined properties:

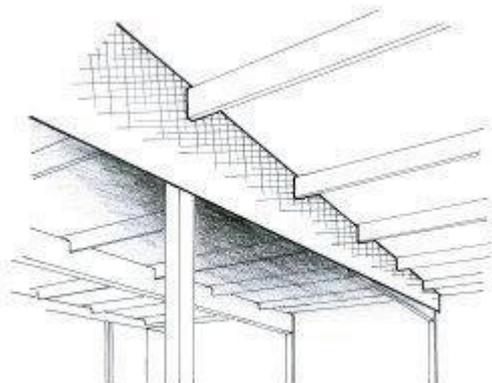
- System parameters
  - General information about the product
- Dimension parameters
  - Particular dimensions of component parts
- Limit parameters
  - Rules used for assessment whether it is possible to manufacture a product of designed dimensions
- Informative parameters
  - Technical information like colour, fire rating and specifications of the power input
- Parameters for facility management
  - Parameters that serve for further use of the model (e.g., for revisions)

You can find technical specifications of the product on AVAPS website:

<https://en.avaps.cz/products/smoke-barriers/>



## 2.3 SMOKEbarrier ST – Textile static smoke barrier



This product is line-based component of Special equipment category. Dimensions of this component are shown in three levels of detail (Coarse/Medium/Fine). For the bill of quantities, it is possible to use the same mark for the segment and the whole unit. For area and length dimensions, there is the option to sum all segments of the same mark.

This component contains following predefined properties:

- System parameters
  - General information about the product
- Dimension parameters
  - Particular dimensions of component parts
- Limit parameters
  - Rules used for assessment whether it is possible to manufacture a product of designed dimensions
- Informative parameters
  - Technical information like colour, fire rating and specifications of the power input
- Parameters for facility management
  - Parameters that serve for further use of the model (e.g., for revisions)

You can find technical specifications of the product on AVAPS website:

<https://en.avaps.cz/products/smoke-barriers/>



### 3 How to Use Families in Revit Project

#### 3.1 FIBREroll – Fire curtain

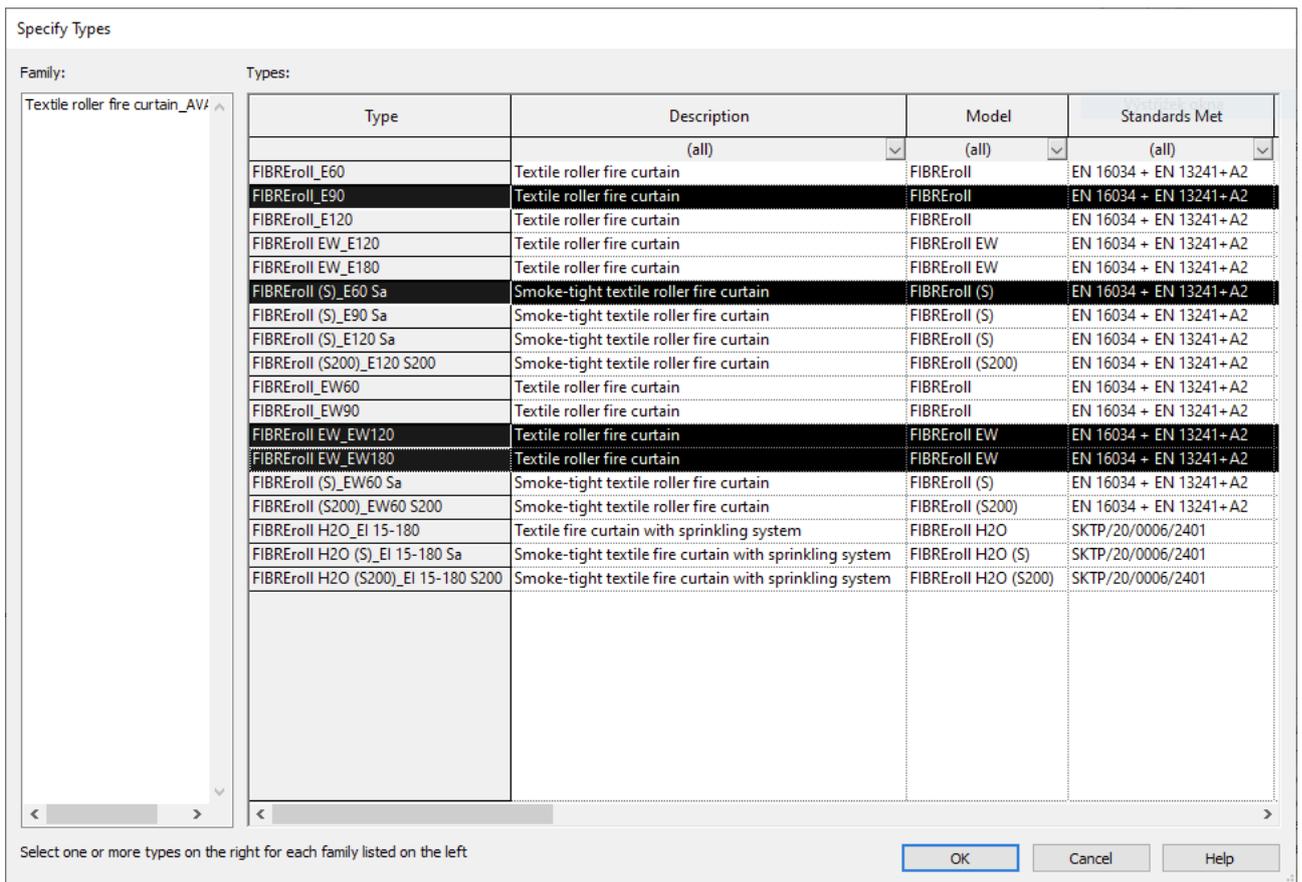
For this product, there are two Families that contain all product variations, namely:

- *Textile roller fire curtain\_AVAPS.rfa (for FIBREroll, FIBREroll S, FIBREroll S200, FIBREroll EW, FIBREroll H2O and FIBREroll EASY)*
- *Textile roller fire curtain\_FIBREroll EI+.rfa (for FIBREroll EI+)*

There is a text file attached to each Family from which the designer chooses a particular type of product. Both Families are inserted into the model similarly.

To load Family, go to Insert → Load From Library → Load Family.

It is important to insert Family this way because only then the menu of types of Families will pop-up. See the picture below:



After this you can place desired component into floor plan view. To do so, go to: Architecture → Build → Door Family is in Door category but you can also find it in Project Browser in „Families” list.



Set parameters in „Set” group:

- Required Time Of Fire Rating
  - Fill this if you use component type FIBREroll H2O, where you can change this value
- Box On Opening
  - Fill this if the box is attached to vertical surface of the wall (i.e., before the wall)
- Left Guide Rail
  - Select this if the left guide rail is attached to vertical surface of the wall (i.e., before the wall)
- Right Guide Rail
  - Select this if the right guide rail is attached to vertical surface of the wall (i.e., before the wall)
- Position In Wall
  - This value moves the component away from vertical surface of the wall and pushes it into the wall (this is possible only when the curtain is attached in the wall, i.e., to the jamb and the lintel)
- Offset Of Roll-up From Lower Edge Of Lintel
  - This value moves the box away from the surface of the lintel
- Offset Of Left Guide Rail From Front Side Of Wall
  - This value moves the left guide rail away from the surface of the left jamb
- Offset Of Right Guide Rail From Front Side Of Wall
  - This value moves the right guide rail away from the surface of the right jamb
- Clear Opening Height
  - This value defines the clear height of the opening (measured between bottom surface of the opening and the surface of the lintel)
- Clear Opening Width
  - This value defines clear height of the opening (measured between surfaces of the jambs)

Set		⬆
Required Time Of Fire Rat...	60	
Box On Opening	<input type="checkbox"/>	
Left Guide Rail On Opening	<input type="checkbox"/>	
Right Guide Rail On Open...	<input checked="" type="checkbox"/>	
Position In Wall	100.0	
Offset The Side Guide Fro...	0.0	
Box Offset From Lower E...	0.0	
Right Guide Rail Offset Fr...	0.0	
Clear Opening Height	2700.0	
Clear Opening Width	2500.0	



„Fire Rating Designed\_“ field is used for value of fire rating proposed by a specialist. This information will be listed in the bill of quantities.

„Fire Rating\_“ field shows the real fire rating of the component. This field is filled automatically when the limit dimensions are met. In case of components FIBREroll H2O this parameter is determined by the value filled in „Required Time of Fire Rating“ field.

Fire Protection		⬆
Fire Rating Designed_		
Fire Rating_	EI 60 Sa	
Date Of Next Revision_		
Date Of Production_	0	
Date Of Revision_		
End Of Warranty Period_		
Production Number_		
Revised By_		

Choose „Place On Work Plane“. It is possible to choose any place on the plane because Family is not aligned to the wall. But now we want to attach it by the wall — Family is magnetic and will align automatically if we move it closer. Family will not create opening by itself because it is set to work with already existing opening. This enables you to insert the component even when Revit model is only attached to current project.



The component has a built-in warning system that can show a red error message. When such a message appears, it means it is not possible to manufacture a particular type of curtain using inserted dimensions. In that case, you need to change the type of curtain or adjust the dimensions to comply with the required limit.

- There are the following error messages:
  - Fire resistance for this type of product is exceeded. Change to a type with higher fire resistance.
  - This anchoring option is not possible!
  - Fire resistance maximum is exceeded!
  - Limit dimensions are exceeded!

In case you don't know why it is not possible to use your desired combination of requirements, please contact us at [projekce@avaps.cz](mailto:projekce@avaps.cz)

This warning is in subcategory and you can turn it off. To turn the warning off, go to: „Visibility/Graphics Overrides for Floor Plan“ in Door category.

<input checked="" type="checkbox"/> Doors					<input type="checkbox"/>	By View
<input checked="" type="checkbox"/> Frame/Mullion						
<input checked="" type="checkbox"/> Glass						
<input checked="" type="checkbox"/> Hidden Lines						
<input checked="" type="checkbox"/> Opening						
<input checked="" type="checkbox"/> Panel						
<input checked="" type="checkbox"/> Warning	Override...			Override...		



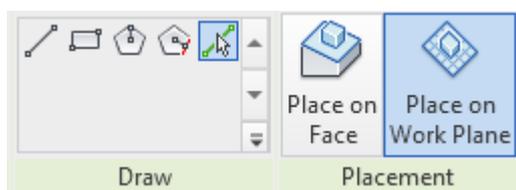
### 3.2 SMOKEbarrier AT – Textile active smoke barrier

To load Family, go to Insert → Load From Library → Load Family.

After this you can place the component into floor plan view. To do so, go to: Architecture > Build > Place component. Family is in Door category but you can find in Project Browser in „Families” list.

- Fill the parameters of both dimensions before inserting Family:
  - Bottom Barrier Edge
  - Total Height From Floor

Choose „Place on Work Plane”. For quicker placement of the component use „Pick Lines” option and then click on edges that define the shape of the segment of the barrier (e.g., ceiling edge). You can also just press Tab and insert the component on all neighbouring edges at once:

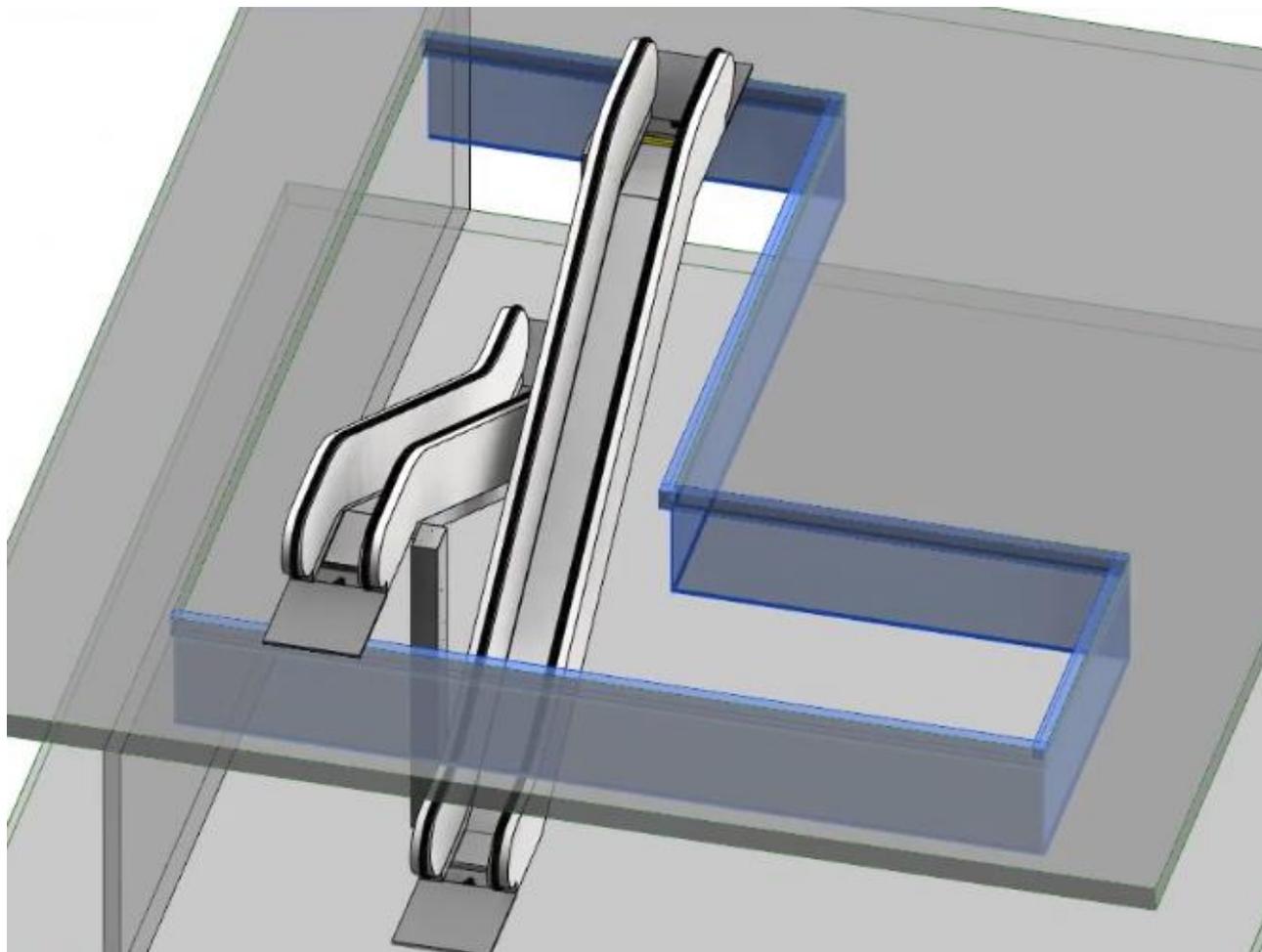


- Following parameters control the behaviour of the box and fabric dimensions in starting point of insertion and ending point of insertion:
  - Starting Point Is Side Edge
  - Starting Point Is Inside Corner
  - Starting Point Is Outside Corner
  - End Point Is Side Edge
  - End Point Is Inside Corner
  - End Point Is Outside Corner

They define starting point of insertion of line based component as end side edge (not neighbouring with other segments), inner corner (the edge of the corner of the opening forms inner corner) or outer corner (the edge of the corner of the opening forms outer corner). Thanks to these parameters it is possible to edit the component to have right dimensions in case it connects with another component in a corner or if it has the end point neighbouring with a wall.

When the text „Dimensions limit exceeded! For further information contact [projekce@avaps.cz](mailto:projekce@avaps.cz)” appears, it means that it is not possible to manufacture a product of proposed dimensions. It is then necessary to change the type of product or its dimensions for dimensions limit to be met. This warning is in subcategory and you can turn it off. To turn the warning off, go to: „Visibility/Graphics Overrides for Floor Plan” in Door category.

<input checked="" type="checkbox"/>	Specialty Equipment								<input type="checkbox"/>
<input checked="" type="checkbox"/>	Above section plane								
<input checked="" type="checkbox"/>	Hidden Lines								
<input checked="" type="checkbox"/>	Warning	Override...							





### 3.3 SMOKEbarrier ST – Textile static smoke barrier

To load Family, go to Insert → Load From Library → Load Family.

After this you can place the component into floor plan view. To do so, go to: Architecture → Build → Place component. Family is in Door category but you can find in Project Browser in „Families” list.

The component is inserted by entering starting point and end point, which can best be done in floor plane view.

There are following parameters of these two points:

- Bottom Edge Of Smoke Barrier\_Initial
- Bottom Edge Of Smoke Barrier\_End
- Total Height From Floor\_Start
- Total Height From Floor\_End

These parameters define dimensions of all four corners of the segment. It is hence possible to create a trapezoid of any chosen proportions.

When the text „Dimensions limit exceeded! For further information contact projekce@avaps.cz” appears, it means that it is not possible to manufacture a product of proposed dimensions. It is then necessary to change the type of product or its dimensions for dimensions limit to be met. This warning is in subcategory and you can turn it off. To turn the warning off, go to: „Visibility/Graphics Overrides for Floor Plan” in Door category.

<input checked="" type="checkbox"/>	Specialty Equipment								<input type="checkbox"/>
<input checked="" type="checkbox"/>	Above section plane								
<input checked="" type="checkbox"/>	Hidden Lines								
<input checked="" type="checkbox"/>	Warning	Override...							

