ACO FreeDeck

Level Access Flat Roof and Terrace Drainage Systems

User Guide for Autodesk Revit files

The ACO FreeDeck Range

ACO FreeDeck is divided into 7 individual Revit families.

- ACO FreeDeck Fixed Height Channel - Shallow Section
- ACO FreeDeck Fixed Height Channel - Intermediate Section
- ACO FreeDeck Adjustable Channel - Shallow Section
- ACO FreeDeck Adjustable Channel - Intermediate Section
- ACO FreeDeck Adjustable Channel - Deep Section
- ACO FreeDeck Accessories (Part 1) - Adjustable Lengths
- ACO FreeDeck Accessories (Part 2) - Access Frames and Ducts

All families contain details of Galvanised Steel and Stainless Steel options.

Loading ACO FreeDeck into your project

Each system is modelled as a generic family that can simply be loaded into your project.

1. Download the relevant ACO FreeDeck file and save it to a suitable location

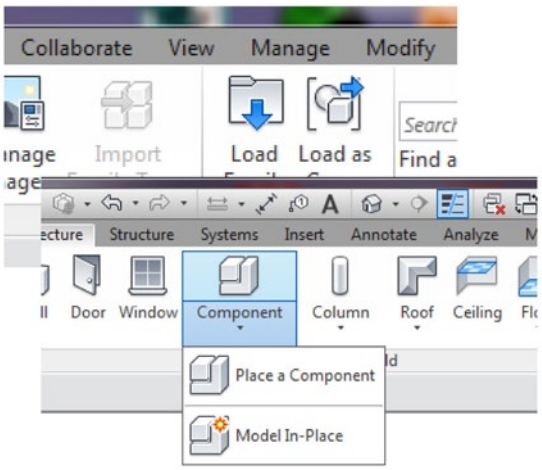
2. Open your project and navigate to an appropriate view

3. Navigate to the “Insert” icon on the Revit ribbon and click “Load Family”

4. Select the ACO FreeDeck Revit file you saved earlier

5. The file can now be placed into your project. Navigate to the “Architecture/Component” icons on the Revit ribbon and click “Place a Component”

Note that all of the FreeDeck files are “floor” based items.



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Using the ACO FreeDeck channel system and components

Step 1: Select the FreeDeck Channel component

FreeDeck components are available in standard lengths of 0.5M, 1.0M & 2.0M in fixed height options or 0.5M & 1.0M in adjustable options.

FreeDeck is designed to be laid onto the insulation or waterproofing layer of your construction build-up, so editing the Revit Floor Family to reflect the core structures is recommended to achieve the best results. (Fig 1 & 2)

For the adjustable height, a function is included to adjust the sectional information to reflect the floor build-up of your project. (Fig 3)

Layers

	Function	Material	Thickness
1	Structure [1]	Concrete, Precast	50.0
2	Structure [1]	Concrete, Sand/Cement Scree	15.0
3	Structure [1]	Rigid insulation	100.0
4	Membrane Layer	Damp-proofing	0.0
5	**Core Boundary**	**Layers Above Wrap**	**0.0**
6	Structure [1]	Concrete, Precast	200.0
7	**Core Boundary**	**Layers Below Wrap**	**0.0**

Fig 1

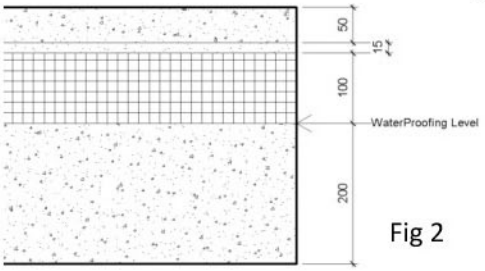


Fig 2

Step 2: Making the channel run

The family components can simply be placed and arranged using the standard Revit “modify” tools of Move, Copy, Rotate and Align.

The adjustable length component (found in Accessories Part 2) allows for length correction between standard channel components.

For corners, the adjustable corner component, (also in Accessories Part 2) can be used.

Position the internal corner of the FreeDeck components, and determine the angle. (Fig 4)
Place the Corner component and set “Invert 1 & 2” along with “Angle” (Fig 4a). Move the corner component into position. (Fig 4b).

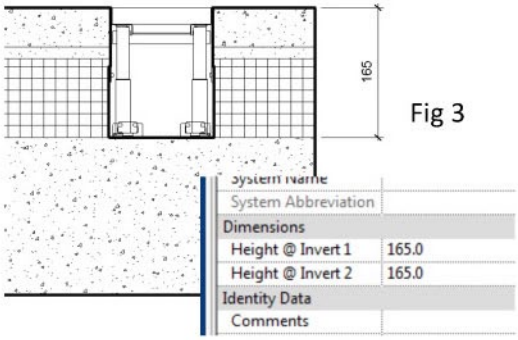
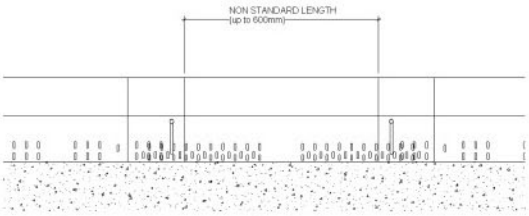


Fig 3



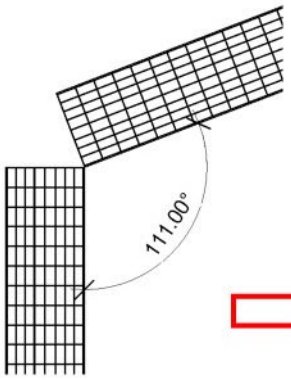
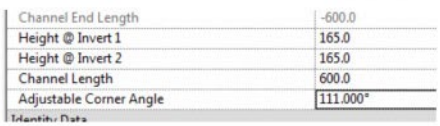


Fig 4



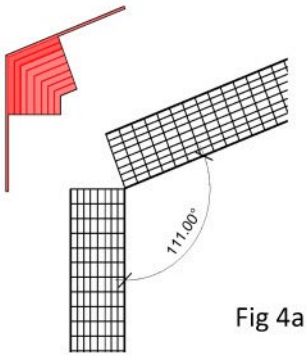


Fig 4a

Fig 4b

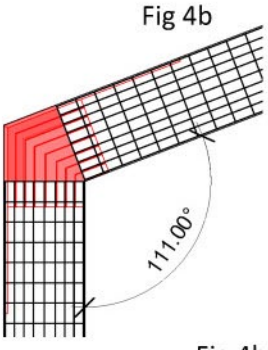


Fig 4b

Using the ACO FreeDeck channel system and components

Step 3: Select the Grate

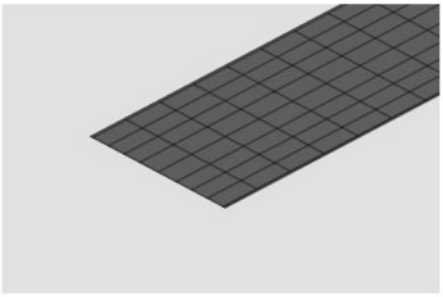
Additional features have been built into the FreeDeck files that allows for simple selection of the grates type.

To choose a grate style, position the channel within the project and then select it. Once selected the “properties” box will appear and selection of the grate style can be made by means of the tick box feature as shown.

By default, a generic grate is always displayed on a channel when it is placed in a project.

This generic grate will always be displayed and will not amend visually, no matter which grate is selected by tick box in the properties box. The grate cannot be hidden.

Once the grate type selection has been made in the properties box, it can, for example, be referenced for costing, scheduling and maintenance purposes.



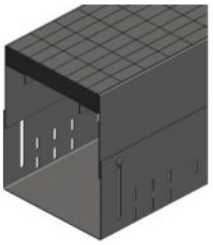
Step 4: Selecting End Plates

In addition to the grate style, the FreeDeck files allow for the simple on/off selection of end plates, again via the “properties” box. By default the end plate(s) are turned off and will not be included in the project schedules.
Note: If selected and displayed they are included in the project schedules.

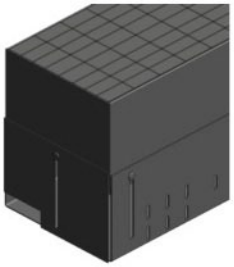
To choose to include an end plate, position the channel within the project and then select it. Once selected the “properties” box will appear and selection of the end plate at either end can be made by means of the tick box feature as shown.

Note: “Invert 1” refers to the insertion end of the channel, whilst “Invert 2” is the opposite end. Consider this for inserted then rotated channels in the project.

Normally, end plates need only be included at the extreme (termination) points of a channel run.



Default – No End Plates



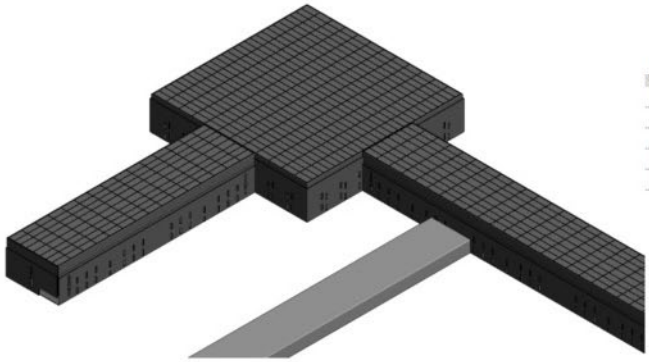
With End Plate Selected

Using the ACO FreeDeck channel system and components

Step 5: Access Frames and Drainage Ducts

FreeDeck Access Frames and grates are available in both fixed height and adjustable height versions, and in both Galvanised and Stainless Steel variants.

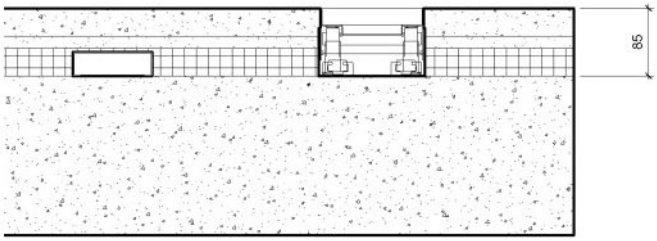
They are inserted and modified in the same way as standard channel sections; with inverts and grate options (where applicable) determined by “properties”.



Dimensions	
Total Height	105.0
Top Void Height Start	2.0
Top Void Height End	-30.0
Height for Adjustable Access Frame	85.0
Drainage Duct – Level below FFL	30.0

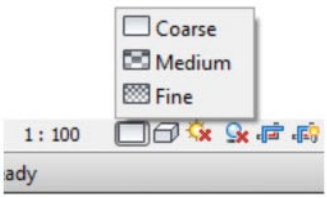
Drainage Duct is positioned and oriented as a channel, and the depth set as “Level below FFL”

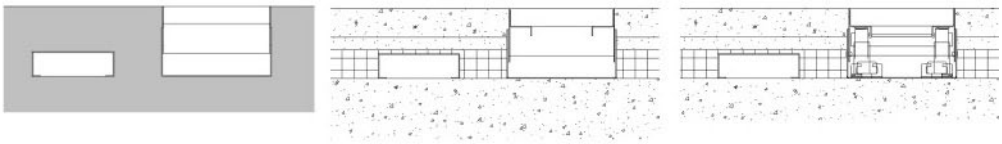
Dimensions	
Total Height	105.0
Top Void Height Start	2.0
Top Void Height End	0.0
Height for Adjustable Access Frame	105.0
Drainage Duct – Level below FFL	85.0
Base Height	3000.0
Access Frame Extension Position Height	5000.0



Step 6: Sectional Accuracy

ACO FreeDeck family components are designed with varying levels of detail, which can be accessed via the Revit “Detail Level” function.





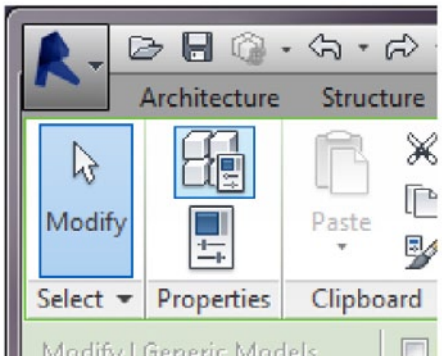
Type properties

The ACO FreeDeck file has a collection of useful information embedded with it, including site installation and operations and maintenance details.

This information, along with much more is stored within the files or available through hyperlinks within the component type properties.

1. To access the information within a component, simply select the item and click the “Type Properties” icon on the Revit ribbon at the top of the dialogue.

2. The “Type Properties” information screen will now display. Simply scroll up and down the screen to find the information you require.



Grating Product Code 36952	Load Class A15 - Mesh Grating - 14mm x 30mm Mesh - Galvanized Steel - 500mm long - 1.6kg
Grating Product Code 00277	Load Class A15 - Slotted Grating - 10 x 80mm Slot - Galvanized Steel - 500mm long - 1.0kg
Grating Product Code 00276	Load Class A15 - Slotted Grating - 10 x 80mm Slot - Galvanized Steel - 1000mm long - 2.2kg
End Plate Product Code 36793	End Plate Galvanized Steel for Invert Depth - 75/105mm - 0.1Kg
General	
Weight (Kg)	3.3kg
Product Type	Linear Deck Drainage System
Product Standard	BS EN 1433:2002, CE marked
Product Range	ACO Freedeck
Product Description	ACO Freedeck Adjustable Channel - Intermediate Section
Product Code	36780
Price	POA - contact ACO
NBS Specification	NBS Section R10 Gravity Rainwater Drainage Systems, Subsection 365
Maintenance Guidelines	http://www.acobuildingdrainage.co.uk/media/5441/ACO%20FreeDeck%20Brochure.pdf
Load Class	A15
Installation Guidelines	http://www.acobuildingdrainage.co.uk/media/5441/ACO%20FreeDeck%20Brochure.pdf
Dimensions (LxWxH)	500 x 130 x 75/105
Channel Recycled Material Content	25 - 30 %
Channel Recyclable	Fully recyclable
Channel Material	Hot Dipped Galvanised Steel
Channel Colour	Galvanised

Material library

The ACO FreeDeck file contains materials that are already pre-loaded into the components. When loading the ACO FreeDeck file into your project the pre-loaded materials will automatically transfer through.

Other notes

You can add ACO FreeDeck systems to your company template file. They will then be available without the need to load them when starting a new project.

The ACO FreeDeck families have been created in Revit 2014.

Further information on the use of ACO FreeDeck can be obtained from the Technical Guide, available at www.acobd.co.uk

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