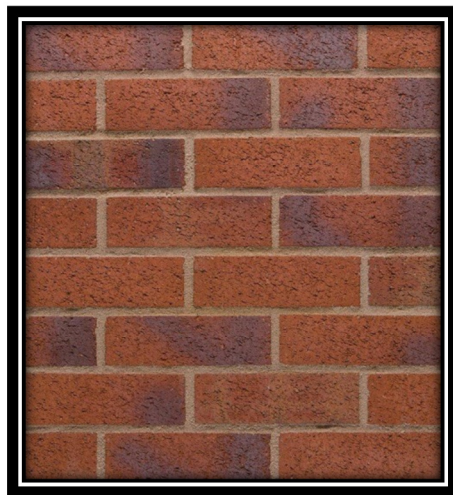




TERCA BRICKS

AUTODESK REVIT CONTENT

USER GUIDE



VERSION 2.0

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WHAT IS INCLUDED IN THIS BIM CONTENT

This content includes the following;

Within the Autodesk Revit platform;

- Product identification information
- Material physical and structural parameters with correct units set*
- Material thermal parameters with correct units set*
- Revit material asset data
- Declaration of Performance (DOP) parameter data for each product
- COBie UK 2012 data
- IFC data
- Uniclass 2 data
- NBS specification data
- Appearance data including visualisation images where available.
- CAD appearance data including hatch patterns

*=For example, Weight is inputted in kN/m^3 structural units and not as text.

In addition;

- This user guide
- A Autodesk Revit shared parameter file including all Wienerberger custom parameters
- A IFC 2x3 export from latest Revit exporters

All Wienerberger brick materials are installed into host walls with the Autodesk Revit project (RVT) files.

LIST OF PRODUCTS IN THIS DATASET

0003	Woodland Mixture	0071	Dorton Manor
0021	65mm Class B Engineer (Denton)	0072	Durham Claret Red
0022	65mm Class B Engineer (Denton)	0073	Durham Dark Multi
0023	Chepstow Multi	0074	Durham Red Multi
0023	Crofters Medley	0075	Eastfield Grey
0025	Dartmoor Heather	0076	Gainsborough Multi
0026	Oakwood Multi	0077	Heartland Brown Multi
0027	Old Castle Blend	0078	Heartland Light Multi
0028	Old Castle Blend	0079	Heartland Red Multi
0029	Peak Mixed Red 50/50	0080	Highfield Cream
0030	Rothsay Blend	0081	Newfield Multi
0031	Stockbury Multi	0082	Westerton Orange Multi
0032	Windmill Orange Mult	0083	Witton Multi
0033	Woodland Mixture	0084	Abbeydale Red Multi
0034	Autumn Russet Stock	0085	Blended Orange Gilt
0035	Oast Russet Stock	0086	Blended Red Multi Gilt
0036	65mm DORCHESTER RED	0087	Brookhurst Yellow Multi
0037	65mm Hathaway Brindled	0088	Caldera Red Multi
0038	65mm Heritage Blend	0089	Cinnabar Red Multi
0039	65mm KASSANDRA MULTI	0090	Harvest Buff Multi
0040	65mm Kempley Antique	0091	Ingle Red
0041	65mm Maldon Antique	0092	Kingshurst Multi
0042	65mm Mardale Antique	0093	Maple Multi 65mm
0043	65mm OLDE WELWYN RED	0094	New Red Multi Gilt
0044	65mm RENAISSANCE MULTI	0095	Orange Multi Gilt
0045	65mm WOODSTOCK BUFF	0096	Sandalwood Yellow Multi
0046	65mm Class B Engineer (Kingsbury)	0097	Smoked Orange Multi Gilt
0047	Blue Engineer Perforated (K209)	0098	Sunset Red Multi
0048	Blue Engineer Solid	0099	Tabasco Red Multi
0049	Class A Blue Engineer Solid (Kingsbury)	0100	Tawny Buff (New)
0050	Staffordshire Blue Dragfaced (K20365p)	0101	Trinity Cream Gilt
0051	Staffordshire Brown Dragfaced	0102	Tuscan Red Multi
0052	Staffordshire Cream Dragfaced	0103	Warm Golden Buff
0053	Staffordshire Golden Dragfaced	0104	Willowed Buff Multi
0054	Staffordshire Red Dragfaced	0105	Bloomsbury Multi
0055	Staffordshire Smooth Blue Perforated (K201)	0106	Chartham Multi Stock
0056	Staffordshire Smooth Brown	0107	Hestia Multi
0057	Staffordshire Smooth Cream	0108	Hurstwood Multi
0058	Staffordshire Smooth Crimson	0109	Lingfield Red Multi
0059	Staffordshire Smooth Golden	0110	Maplehurst Multi
0060	65mm Red Class B Engineer - SOLID (Sandown)	0111	Marpessa Multi
0061	65mm Red Class B Engineer (Sandown)	0112	Nutcombe Multi
0062	Berkshire Red	0113	Olde Cranleigh Multi
0063	Nevada Buff BS EN 77	0114	Olde Henfield Multi
0064	Pembridge Red	0115	Olde Horsham
0065	Staffordshire Smooth Red	0116	Olde Wealden Multi
0066	Docklands Yellow Multi	0117	Rudgwick Multi Stock
0067	Smeed Dean London Stock	0118	Warnham Red
0068	65mm Ashington Red Multi	0119	Warnham Terracotta
0069	Bamburgh Red Stock	0120	Winchester Multi
0070	Bradfield Multi		

USING THIS CONTENT

The following instructions are intended for use by experienced users of Autodesk Revit software.

INSTALLING MATERIAL INTO A AUTODESK REVIT PROJECT OR TEMPLATE

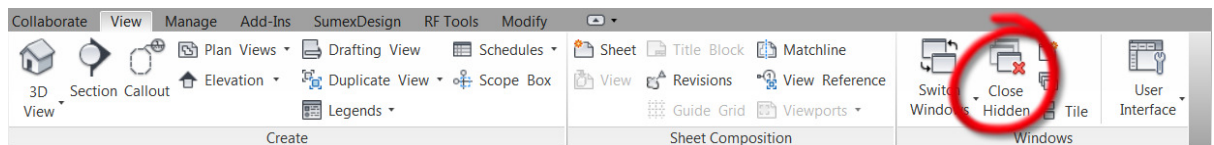
To install either a single or multiple walls into another Autodesk Revit project or template please follow these instructions. If you are installing into a later version of Autodesk Revit or using software other than Autodesk Revit please follow the instructions below on how to upgrade the file.

Summary

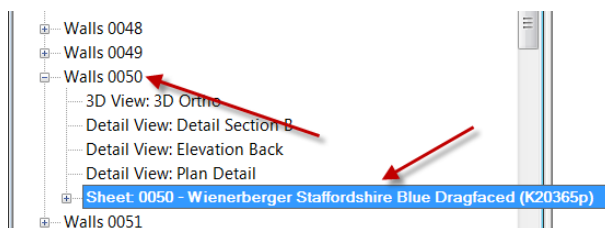
Select the walls that you require in your project from the Revit project file and copy and paste them into your project or template to make the Wienerberger materials available.

Step by step

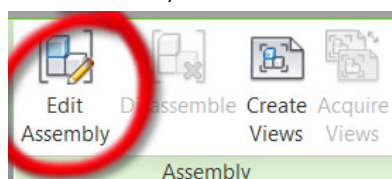
1. Open the Autodesk Revit project or template file that you wish to copy the materials into
2. Ensure no other models are open.
3. Open up a Floor Plan view, typically the Ground floor is best and maximise the view.
4. Use Close Hidden on the Windows tab to close all other views



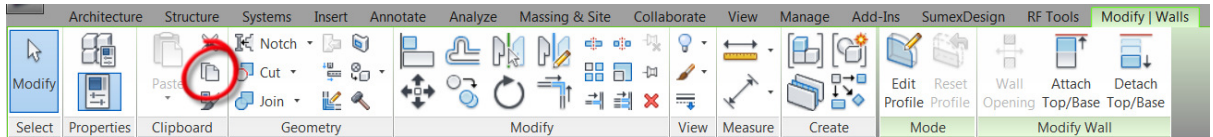
5. Open the Wienerberger Revit project file that you have downloaded in Autodesk Revit, it should open on the product you have selected. If it does not, refer to the "List of Products" above, noting the 4 digit number next to it. You will be able to find the product in the "Assemblies" section of the Project Browser using this number;



6. In the Sheet, hover over the "Plan Detail". Click the Right Mouse Button and select Activate View
7. Select the wall, and select Edit Assembly

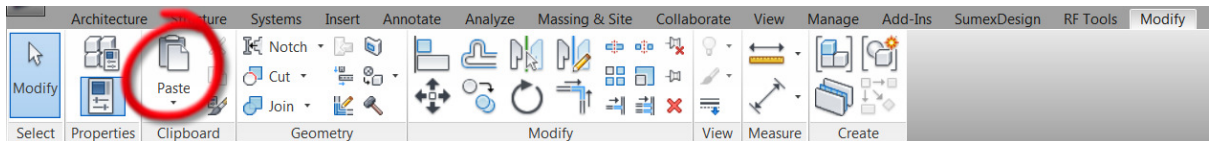


8. Left click on the wall and Hold down CNTRL key and press the letter C, or go to the Modify | Walls tab and select the Copy to Clipboard tool



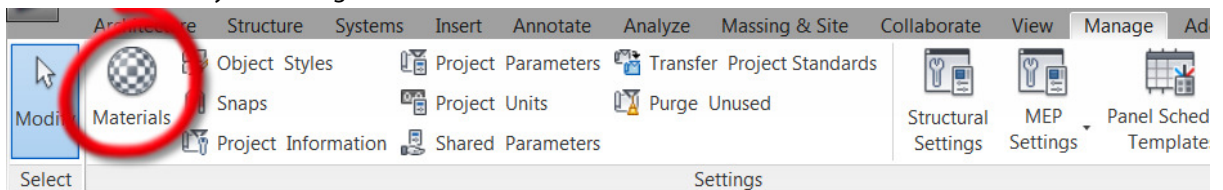
9. Switch to the project that you want to copy the wall into.
Tip. Use CTRL-TAB to quickly switch between open windows.

10. Hold down the CTRL key and press the letter V, or go to the Modify tab and select the Paste option








11. This will place the walls onto your cursor. Place these with a left click in open space within your project.
12. Once placed you can delete them again by selecting them and then pressing the DELETE key on your keyboard.

13. Go to Materials on your Manage tab



14. You should now be able to find the Wienerberger materials in your material list for use within any suitable system family including walls.

	Door - Frame/Mullion	Wood
	Glass	Glass
	Poche	System
	Wienerberger Porotherm PTH100 Block	Masonry
	Wienerberger Terca Woodland Mixture	Masonry

USING MATERIALS IN OTHER VERSIONS OF AUTODESK REVIT

It is not possible to utilise the materials in Autodesk Revit software released prior to the version release. The material you have downloaded is in Autodesk Revit 2013 format.

If using Autodesk Revit , Autodesk Revit Structure , Autodesk Revit Architecture , Autodesk Revit MEP or Autodesk Revit LT you are able to use the materials and can install them using the instruction included under "Installing into a Autodesk Revit project or template"

To install these materials into a later version of Autodesk Revit you will need to upgrade the file first. Please note that upgraded files cannot be opened in earlier versions of Autodesk Revit. Therefore if you use multiple versions it is advisable to retain the original version.

To upgrade a file;

1. Open it in the version of Autodesk Revit or Autodesk Revit LT that you wish to use it in. During the opening process the file will be upgraded.
2. Use Save As to create an upgraded version or Save to overwrite the original version with the upgraded file.
3. Follow the step by step under "Installing into a Autodesk Revit project or template"

TEXTURE AND PRODUCT IMAGE INFORMATION

Where available to us, we have included two types of images with the BIM content. These are textures and product images.

WHAT IS A TEXTURE?

Textures are images created especially for use in computerised visualisation. They are colour matched on all sides and tile seamlessly. This means that rendering engines like the one built into Autodesk Revit can utilise these to produce high quality realistic visualisations of the design intent. More information on rendering can be found here,

[http://en.wikipedia.org/wiki/Rendering_\(computer_graphics\)](http://en.wikipedia.org/wiki/Rendering_(computer_graphics))

The materials contained with the Autodesk Revit file you have download have these textures already built into them under the Appearance asset of the material.

Autodesk Revit does not store the texture image file within the Revit project file, but instead references to it. You will find the texture file in the download under a folder labelled "Texture".

Unfortunately we currently do not have texture images for the following products;

Dartmoor Heather	Staffordshire Smooth Golden	Cinnabar Red Multi
Old Castle Blend	Docklands Yellow Multi	Kingshurst Multi
65mm Hathaway Brindled	65mm Ashington Red Multi	Tawny Buff (New)
65mm Heritage Blend	Bradfield Multi	Bloomsbury Multi
65mm Kempley Antique	Eastfield Grey	Hestia Multi
65mm Maldon Antique	Heartland Brown Multi	Hurstwood Multi
65mm Mardale Antique	Heartland Light Multi	Lingfield Red Multi
Staffordshire Brown Dragfaced	Heartland Red Multi	Marpessa Multi
Staffordshire Cream Dragfaced	Highfield Cream	Olde Cranleigh Multi
Staffordshire Golden Dragfaced	Newfield Multi	Olde Henfield Multi
Staffordshire Red Dragfaced	Westerton Orange Multi	Olde Horsham
Staffordshire Smooth Brown	Abbeydale Red Multi	Olde Wealden Multi
Staffordshire Smooth Cream	Brookhurst Yellow Multi	Rudgwick Multi Stock

In these products the texture image supplied is simply a white JPG file.

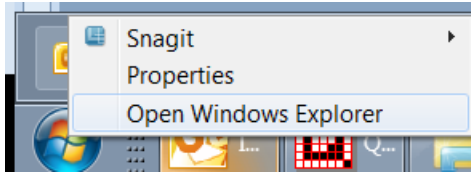


Figure 1 Terca Dorchester Red as rendered in Autodesk Revit 2013

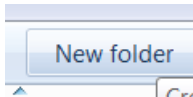
INSTALLING THE TEXTURE TO THE AUTODESK MATERIAL LIBRARY

A texture file is available for all other products. To install this file in Windows 7 follow these instructions;

1. Open Windows Explorer. This can be done by right clicking on the Start Menu.



2. Navigate to the Texture folder in the download.
3. Right click on the image file and select Copy to copy it to the clip board.
4. Navigate in Windows Explorer to (assuming Revit is installed on the C:\ drive, otherwise replace) C:\Program Files (x86)\Common Files\Autodesk Shared\Materials\Textures
5. Select New Folder at the top and call the new folder "Wienerberger"

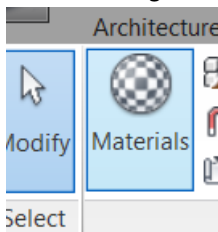


6. Navigate into new folder and right click and select Paste to copy the image file to this location.

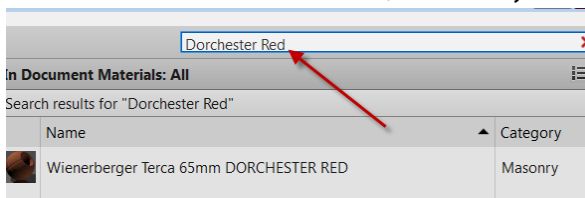
INSTALLING TEXTURE TO ANOTHER LOCATION

Alternatively, you can save the image to another chosen location and in the material within Revit, reset the file location of the file. This can be done as follows;

1. Copy and paste the texture image to your desired location
2. Go the Manage tab in Revit and then Materials

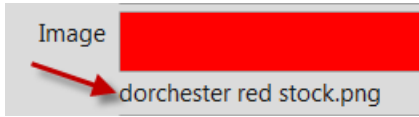


3. In the Material Browser search box, search for your material



4. Double click the material, at the top it will say in red that "One or more texture files cannot be found"

5. In the appearance asset click on the image name directly under the preview



6. In the Select File window, navigate to the location you saved the texture file and click Open.

INSTALLING TEXTURES FOR MATERIALS OTHER THAN THE DOWNLOADED MATERIAL

In order to manage the size of the download, we have included only the texture for material that you have downloaded. However, this file also contains many other Wienerberger Terca products that you may wish to utilise. Please see the list at the start of this user guide.

Therefore the entire texture library for Terca can be downloaded

1. Download the full Texture library from this location; (110mb download). [\[BIMSTORE to enter download location here\]](#)
2. Extract the ZIP file to the following location
(assuming Revit is installed on the C:\ drive, otherwise replace)
C:\Program Files (x86)\Common Files\Autodesk Shared\Materials\Textures\Wienerberger

WHAT IS A PRODUCT IMAGE?

Where available to us we have also supplied product images of the materials. Product images are photos taken for marketing requirements. They cannot be used in rendering as textures.

The images supplied have being reduced in quality and size to manage download size. If you would like a high quality version of any of the product images please email us at [\[Wienerberger to enter suitable contact details\]](#)

The product images are available as files in the download under the folder "Product Images" and are also installed on the title sheet for the product.

To manage download size, product images are only available for the product downloaded. To obtain the product images for other Terca products, you must download that product separately.

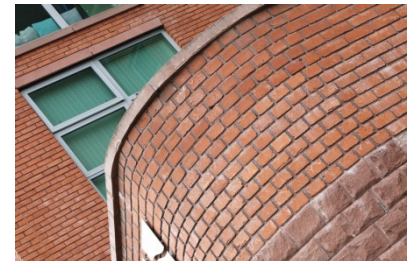


Figure 2 Terca Bamburgh Red in use at Brewery Wharf

PARAMETER INFORMATION

The following information relates to the information include with the material which can be assigned to your Autodesk Revit system family, such as a Wall object.

PARAMETER METHODOLOGY EMPLOYED

1. **Preference to Autodesk hard coded parameters.**

Wienerberger have where possible utilised hard coded Autodesk Revit parameters to ensure the information can be utilised by the analytical functions of the software and can be appropriately exported.

2. **Correct unit specification over text.**

Wienerberger have utilised Autodesk Revit ability to use correct units in parameters rather than setting all to either text or number. This ensures that the information can be used correctly in formulas and exported to analytical packages. For example Weight is set to be inputted in kN/m³ structural units.

3. **Autodesk Revit Material Assets utilised.**

Wienerberger have utilised the assets function of the software in for appearance, physical and thermal properties for the materials. This, like using correct units will assist with analytical calculations.

4. **Known protocol parameters utilised.**

Where parameters do not exist within Autodesk Revit, but do exist in other known protocols (see below) these parameter have been utilised. The exception to this is when we cannot fulfil the requirement of using correct units. This should assist in the interoperability of data with content provided by other suppliers.

INCLUDED PARAMETER PROTOCOLS

The Wienerberger material parameter systems include the following protocols

1. **COBie UK 2012 FM Export.**
2. **National Building Specification (NBS).**
3. **Uniclass 2**
4. **IFC**

Further information on each of these protocols can be found in the "Parameters Included In This Dataset" section.

PARAMETERS INCLUDED IN THIS DATASET

Hard coded parameters are built into the Autodesk Revit database and are present in all RVT files by default. Shared parameters are user created parameters used to ensure data is stored in the same location within the database for many items of the same type, even if installed from many file locations. All Shared Parameters are contained in the file Wienerberger Products Shared Parameters.txt

UTILISED REVIT HARD CODED PARAMETERS

The following Autodesk Revit hard coded parameters are utilised;

Parameter Name	Description	Revit Units
Comments	General comments on the material	Text
Description	Product marketing description	Text
Manufacture	Listed as Wienerberger to assist with specification	Text
Model	Wienerberger product codes	Text
Name (Type)	Materials full name	Text
Type (Material)	Autodesk material designations, i.e. Masonry	Text
URL	Website URL listing further information on the product	URL
Density	The density of a substance is its mass per unit volume	kg/m ³
Behaviour		Isotropic/Orthotropic
Density	The density of a substance is its mass per unit volume	kg/m ³
Porosity	Porosity or void fraction is a measure of the void (i.e., "empty") spaces in a material, and is a fraction of the volume of voids over the total volume, between 0–1, or as a percentage between 0–100%	0-1
Thermal Conductivity	Thermal conductivity (often denoted k , λ , or κ) is the property of a material to conduct heat	Watts per meter kelvin (W/m*K)

GENERAL SHARED PARAMETERS

The following general reference parameters are utilised;

Parameter Name	Description	Revit Units
Uniclass2Desc_mtrl	Uniclass 2 table description	Text
Uniclass2_mtrl	Uniclass 2 designation	Text
UniqueID_mtrl	Unique sequential id for Wienerberger products	Text
WienerbergerCode_mtrl	Wienerberger product codes	Number
NBSDescription_mtrl	NBS description	Text
NBSReference_mtrl	NBS clause number	Text
NBSTypeID_mtrl	A reference to the object for the user if one or more is used within the project	Text

For further information on Uniclass 2, please visit the HM Government's BIM Task Group website at <http://www.bimtaskgroup.org/uniclass2/>

For further information on NBS Product Specification, please visit <http://www.thenbs.com/corporate/about.asp>

COBIE PARAMETERS

COBie is the information exchange specification specified by a number of clients, including those utilising the processes included in BSi PAS1192-2-2013. It is part of the Government Construction Strategy published May 2011 which calls for implementation in 2016.

The content includes two sets of COBie UK-2012 parameters. The first set is generated from the Autodesk Revit COBie Toolkit and the second set is generated by BIMStore in compliance with the US Army Corps of Engineers parameter advice. Not all parameters included would likely be needed to ensure a COBie data drop, however both are included to try to ensure compatibility with your chosen exporter. A number of exporters are available and while nowhere near an exhaustive list this includes Codebook and dRofus.

For further information on COBie and for a example COBie spreadsheet, please visit the HM Government BIM Task Groups website, <http://www.bimtaskgroup.org/cobie-uk-2012/>. The buildingSMARTalliance also has information including instructional videos online at http://www.nibs.org/?page=bsa_cobie

The following COBIE Parameters are utilised;

Parameter Name	Description	Revit Units
Autodesk Revit Toolkit parameter system		
COBie-Type-AssetType	Listed as Fixed due to non-movable nature of wall objects	Text
COBie-Type-Category	Listed as Uniclass2 categorisation code	Text
COBie-Type-CreatedBy	List as email address of Wienerberger product manager	Text
COBie-Type-CreatedOn	To be filled out at time of install by user	Text
COBie-Type-ExtObject	Listed as IFCMaterial to ensure interoperability	Text
COBie-Type-Manufacturer	Listed as Wienerberger to assist with specification	
COBie-Type-ModelNumber	Wienerberger product codes	
COBie-Type-Name	Commercial name of material	Text
COBie-Type-WarrantyDescription	Materials full name	Text
COBie-Type-WarrantyDurationLabor	Description of the warranty. Not specified by Wienerberger. Contact us for further information.	Text
COBie-Type-WarrantyDurationParts	Duration of labour warranty (years). Not specified by Wienerberger. Contact us for further information.	Text
COBie-Type-WarrantyDurationUnit	Duration of parts warranty (years). Not specified by Wienerberger. Contact us for further information.	Text
COBie-Type-WarrantyGuarantorLabor	Organization acting as guarantor of labour warranty. Not specified by Wienerberger. Contact us for further information.	Text
COBie-Type-WarrantyGuarantorParts	Organization acting as guarantor of parts warranty. Not specified by Wienerberger. Contact us for further information.	Text
BIMStore US Army Corps of Engineers parameter system		
Name	Commercial name of material	Text
SerialNumber	Wienerberger product codes	Text
InstallationDate	Date installed. Filled out by user	Text
AssetIdentifier	Wienerberger product codes	Text
BarCode	On site asset monitoring bar code or NFC number.	Text
TypeName	Filled in by user	
TagNumber	Commercial name of material	Text
ExtIdentifier	Wienerberger product codes	Text
WarrantyDuration	Length of product warranty period. Not specified by Wienerberger. Contact us for further information.	Number
WarrantyStartDate	Start date of warranty. Not specified by Wienerberger. Contact us for further information.	Text

INDUSTRY FOUNDATION CLASS (IFC)

The IFC file type is a platform neutral, open file format specification that is not controlled by a single vendor or group of vendors. It is an object-based file format with a data model developed by buildingSMART to facilitate interoperability in the architecture, engineering and construction (AEC) industry, and is a commonly used collaboration format in Building information modelling (BIM) based projects. The IFC model specification is open and available. In theory, it should enable you to use data such as material information in other BIM software such as Graphisoft ArchiCAD.

Autodesk Revit allows for IFC export using an in-built exporter. IFC is a rapidly developing schema and several new releases of the IFC exporter are often developed within a single Revit software release cycle. If you are required to export to IFC we recommend you update the IFC exporter included in Revit to the latest addition. These can be found on the Autodesk Exchange Store, <http://apps.exchange.autodesk.com/RVT/en/Home/Index>

The Revit models are accompanied by an Industry Foundation Class (IFC) file in the download. The IFC file was created using the latest Autodesk Revit exporter available at the time of export. The version the IFC is saved in is IFC2x3. We understand that the new IFC4 schema which is only partially implemented within Revit, will allow for greater compatibility with materials and we will look to supply this with our content in the future.

Please note that Wienerberger, the content hosts nor authors are able to offer further advice or support on using this content in software other than Autodesk Revit. The IFC file is offered in good faith only.

For information on Industry Foundation Class, visit the BuildingSmart website information page at <http://www.buildingsmart-tech.org/specifications/ifc-overview>

Autodesk Revit will likely do a good job of exporting correctly with little change. However the following parameter is included and the latest addition of the IFC exporters allows you to select the "Classification Field Name". This allows a user to specify the name of one parameter that will serve as a classification.

Parameter Name	Description	Revit Units
COBie-Type-ExtObject	Listed as IFCMaterial. IfcMaterial is the basic entity for material designation and definition; this includes identification by name and classification (via reference to an external classification), as well as association of material properties (isotropic or anisotropic) defined in IfcMaterialPropertyResource schema. Further information here, http://www.buildingsmart-tech.org/ifc/IFC2x4/alpha/html/ifcmaterialresource/lexical/ifcmaterial.htm	Text

GENERAL DATA PARAMETERS

Parameter Name	Description	Revit Units
RangeDeviations_mtrl	Dimensional deviations	Text
UnitDimensions_mtrl	Individual element such as an individual bricks dimensions	Text
UnitDimenstionsCoordinating_mtrl	Individual element dimensions with mortar joint.	
DurabilityDesignation_mtrl	Category for freeze and thaw resistance plus soluble salt content.	Text
FireRating_mtrl	Fire rating of products	Text
PackQuantity_mtrl	Number of elements such as individual bricks within a standard pack as sold to market	Number
WeightEachPack_mtrl	Weight of a standard pack as sold to market with moisture	kN/m3

BRICK SPECIFICATION PARAMETERS

Parameter Name	Description	Revit Units
VolumeOfFormedVoids_mtrl	Volume of formed voids in material	Number
ActiveSolubleSaltContent_mtrl	Activate soluble salt content rating	Text
AirTightness_mtrl	Air tightness of material	Text
DensityTolerance_mtrl	Density tolerance rating	Text
DensityGross_mtrl	Gross value of the material density	Kg/m3
DensityNet_mtrl	Net value of the material density	Kg/m3
InitialRateOfWaterAbsorptionMIN_mtrl	Minimum Initial Rate of Water Absorption	Text
InitialRateOfWaterAbsorptionMAX_mtrl	Maximum Initial Rate of Water Absorption	Text
InitialRateOfWaterAbsorption_mtrl	Combination of min and max ratings.	Text
Water vapour diffusion coefficient	Water vapour diffusion coefficient rating	Text
PackDimensions_mtrl	Dimensions of pack as sold to market	Text
BondStrength_mtrl	Strength of bonding material	N/mm2
CompressiveStrengthCategory_mtrl	Strength per square meter in compression	N/mm2
StrengthCat_mtrl	Strength category	Text
ToleranceClass_mtrl	Tolerance rating	Text
ToleranceMean_mtrl	Tolerance mean value	Text
WeightEach_mtrl	Weight of an individual brick element	kN/m3
WaterAbsorption_mtrl	Maximum water absorption amount	

DOCUMENT REVISIONS

This document is version V1.0.

Date	Revision	Summary
01/02/2014	V1.0	First release
03/03/2014	V2.0	Updated with texture and product image information. Product list updated and minor IFC description revision.