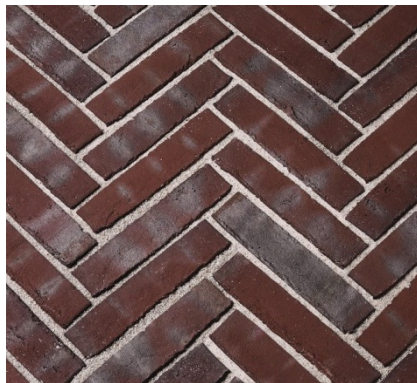




PAVING PRODUCTS

AUTODESK REVIT CONTENT

USER GUIDE



*VERSION 1.0*

## CONTENTS

<b>WHAT IS INCLUDED IN THIS BIM CONTENT .....</b>	<b>3</b>
LIST OF PRODUCTS IN THIS DATASET .....	4
<b>USING THIS CONTENT .....</b>	<b>5</b>
INSTALLING INTO A AUTODESK REVIT PROJECT OR TEMPLATE.....	5
USING MATERIALS IN OTHER VERSIONS OF AUTODESK REVIT .....	7
<b>PRODUCT IMAGE INFORMATION .....</b>	<b>8</b>
WHAT IS A PRODUCT IMAGE? .....	8
<b>PARAMETER INFORMATION.....</b>	<b>9</b>
PARAMETER METHODOLOGY EMPLOYED.....	9
INCLUDED PARAMETER PROTOCOLS .....	9
<b>PARAMETERS INCLUDED IN THIS DATASET .....</b>	<b>10</b>
UTILISED REVIT HARD CODED PARAMETERS.....	10
GENERAL SHARED PARAMETERS.....	10
COBie PARAMETERS .....	11
INDUSTRY FOUNDATION CLASS (IFC).....	12
GENERAL DATA PARAMETERS.....	13
PAVER SPECIFICATION PARAMETERS .....	13
<b>DOCUMENT REVISIONS .....</b>	<b>14</b>

## 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\*
- Declaration of Performance (DOP) parameter data for each product
- COBie UK 2012 data
- IFC data
- Uniclass 2 data
- NBS specification data
- CAD appearance data including hatch patterns

\*=For example, Weight is inputted in  $\text{kN/m}^3$  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 roof tile materials are installed into host roofs with the Autodesk Revit project (RVT) files.

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**LIST OF PRODUCTS IN THIS DATASET**

0125	Aquata	0127	Hague Cream DF
0131	Astra UWF tumbled	0143	Hamburg Buff Multi
0132	Atlas UWF tumbled	0144	Hannover Brindled
0148	Blister Paver	0137	Herne Dark Brindled
0140	Bochum Orange Multi	0138	Koln Red Multi
0136	Bonn Golden Multi	0128	Mastiek Waterstruck WF tumbled
0142	Bremen Brown	0145	Munster Red Brindled
0124	Diamond Pattern	0130	Nero Waterstruck WF tumbled
0133	Dione UWF tumbled	0134	Orion UWF tumbled
0141	Dortmund Dark Multi	0121	Promenade Square Edged
0147	Dragfaced Chamfered Blue	0122	Promenade Tumbled
0146	Dragfaced Chamfered Multi brindled	0149	Slip-top Deterrent Paver
0123	Dragfaced Cobbles	0150	Stretcher Ridge Deterrent Paver
0126	Eindhoven Mixed Red WF	0129	Toledo WF tumbled
0002	Eindoven Mixed Red	0135	Triton UWF tumbled
0139	Essen Red		

## USING THIS CONTENT

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

### INSTALLING INTO A AUTODESK REVIT PROJECT OR TEMPLATE

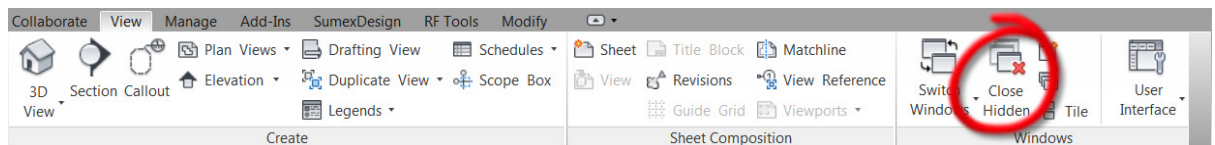
To install either a single or multiple pavers into another Autodesk Revit project or template please follow these instructions. If you are installing into a later version of Autodesk Revit or using software other than Autodesk Revit please follow the instructions below on how to upgrade the file.

#### Summary

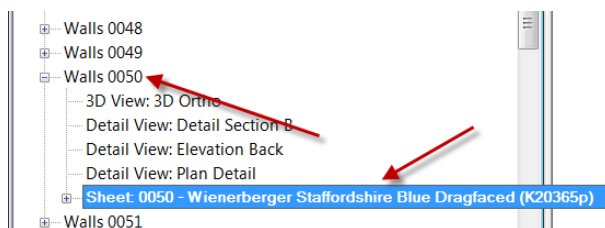
Select the pavers that you require in your project from the Revit project file and copy and paste them into your project or template to make the Wienerberger materials available.

#### 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

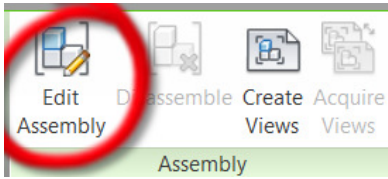


5. Open the Wienerberger Revit project file that you have downloaded in Autodesk Revit, it should open on the product you have selected. If it does not, refer to the "List of Products" above, noting the 4 digit number next to it. You will be able to find the product in the "Assemblies" section of the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

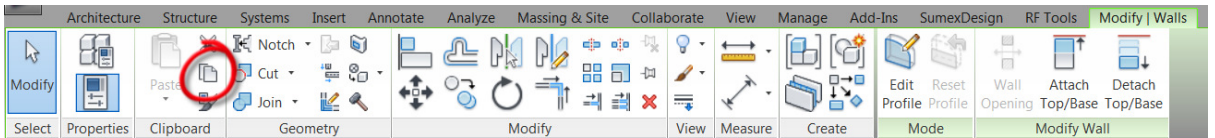


6. In the Sheet, however over the "Plan Detail". Click the Right Mouse Button and select Activate View

7. Select the wall, and select Edit Assembly

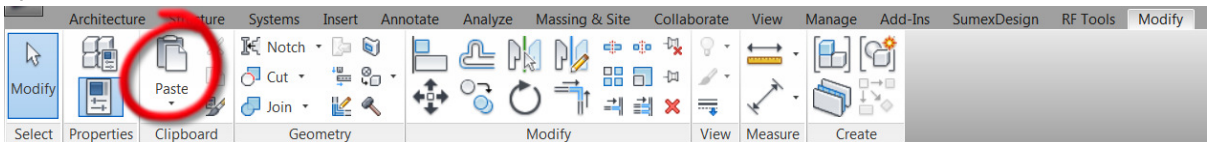


8. Left click on the wall and Hold down CNTRL key and press the letter C, or go to the Modify | Floors tab and select the Copy to Clipboard tool



9. Switch to the project that you want to copy the wall into.

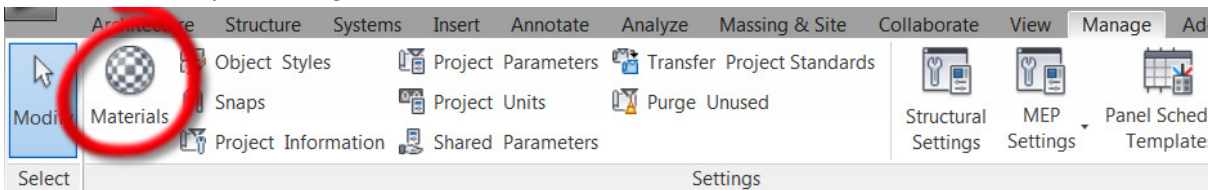
10. Hold down the CNTRL key and press the letter V, or go to the Modify tab and select the Paste option



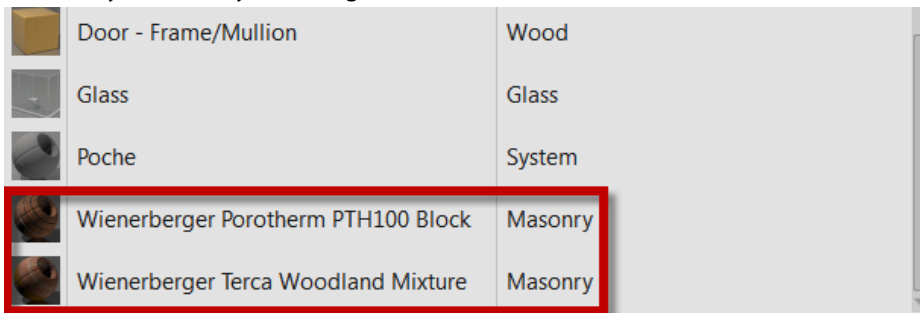
11. This will place the walls onto your cursor. Place these with a left click in open space within your project.

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 floors.



## 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 materials are saved in the Autodesk Revit version 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 (all disciplines) 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”

## PRODUCT IMAGE INFORMATION

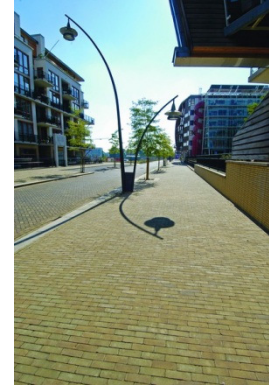
### WHAT IS A PRODUCT IMAGE?

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 Penter products, you must download that product separately.



**Figure 1 Hague Cream Installation**



## 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 Floor object.

### PARAMETER METHODOLOGY EMPLOYED

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

Wienerberger have were 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/m<sup>3</sup> 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 <sup>3</sup>
Behaviour		Isotropic/Orthotropic
Density	The density of a substance is its mass per unit volume	kg/m <sup>3</sup>
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 $k$ , $\lambda$ , or $\kappa$ ) 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](http://www.nibs.org/?page=bsa_cobie)

The following COBIE Parameters are utilised;

Parameter Name	Description	Revit Units
<b>Autodesk Revit Toolkit parameter system</b>		
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
<b>BIMStore US Army Corps of Engineers parameter system</b>		
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.

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, <a href="http://www.buildingsmart-tech.org/ifc/IFC2x4/alpha/html/ifcmaterialresource/lexical/ifcmaterial.htm">http://www.buildingsmart-tech.org/ifc/IFC2x4/alpha/html/ifcmaterialresource/lexical/ifcmaterial.htm</a>	Text

## GENERAL DATA PARAMETERS

Parameter Name	Description	Revit Units
RangeDeviations_mtrl	Dimensional deviations	Text
UnitDimensions_mtrl	Individual element such as an individual tiles dimensions	Text
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 tiles within a standard pack as sold to market	Number
WeightEachPack_mtrl	Weight of a standard pack as sold to market	kN/m3

## PAVER SPECIFICATION PARAMETERS

Parameter Name	Description	Revit Units
Abrasion Resistance		Text
Mean Transverse Breaking Load		Text
Unpolished Slip/Skid Resistance		Text

**DOCUMENT REVISIONS**

This document is version V1.0

Date	Revision	Summary
03/02/2014	V1.0	First release