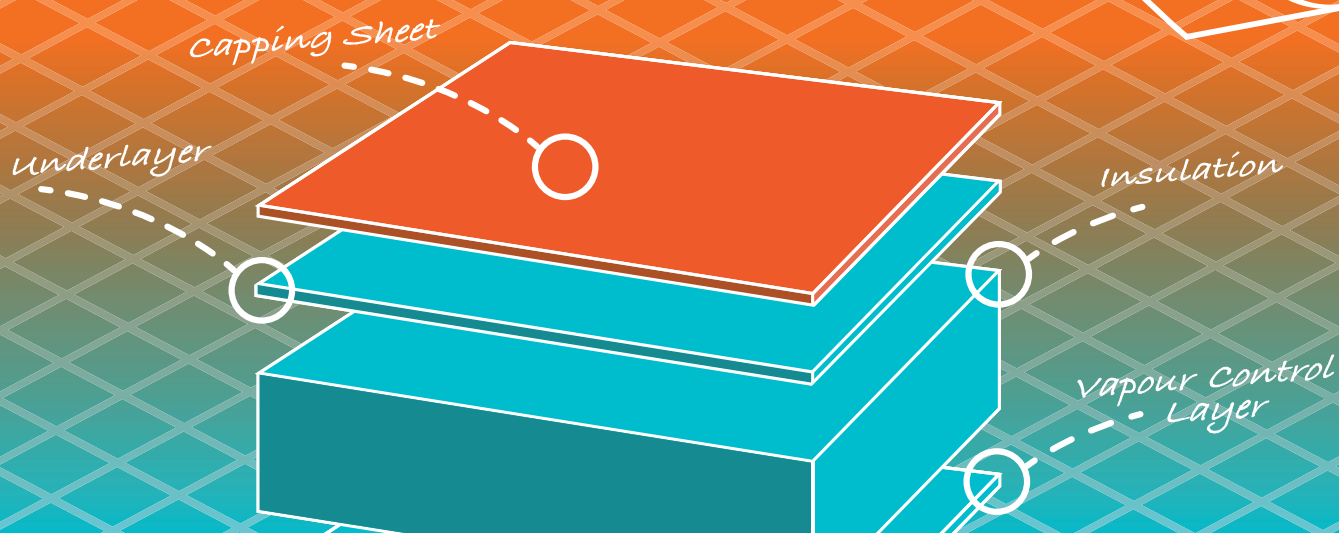




BIM OBJECTS & NBS SPECIFICATIONS



BIM OBJECT USER GUIDE

WARM, COLD AND INVERTED ROOF COVERINGS AND GREEN ROOF SYSTEMS

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1 PRINCIPLES

These BIM Objects must be supported by a project specific specification from Bauder, incorporating system build-up, detail design and performance calculations if a full Bauder system guarantee is required. Please contact your local Bauder Technical Manager or technical@bauder.co.uk for further information.

The BIM objects created include data from the following sources:

[buildingSMART IFC2X3](#)

[NBS BIM Object Standard](#)

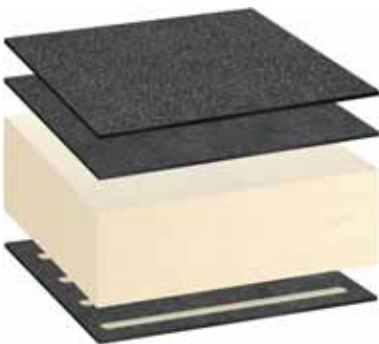
[NBS BIM Toolkit](#) (Level of information – Section 5)

1.1 Modelled Systems

The Bauder BIM objects available through our website represent the following construction products; bespoke objects are available, contact technical@bauder.co.uk for further information.

1.1.1 Reinforced Bitumen Membrane Systems

BAUDER TOTAL ROOF SYSTEM



Bauder Total Roof System – Reinforced bitumen membrane warm roof covering systems – Torch Applied

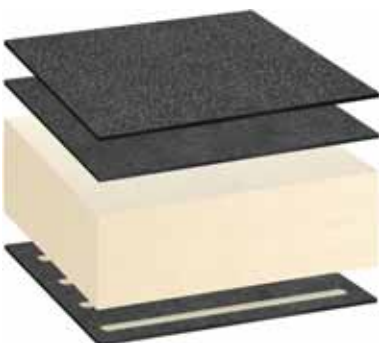


Bauder Total Roof System – Reinforced bitumen membrane warm roof covering systems – Self Adhered



Bauder Total Roof System – Reinforced bitumen membrane inverted roof covering systems – Torch Applied

BAUDERFLEX



Bauderflex System – Reinforced bitumen membrane warm roof covering system – Torch Applied



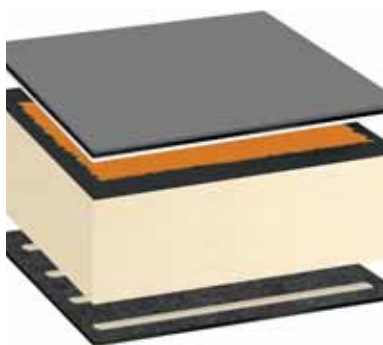
Bauderflex System – Reinforced bitumen membrane warm roof covering systems – Self Adhered



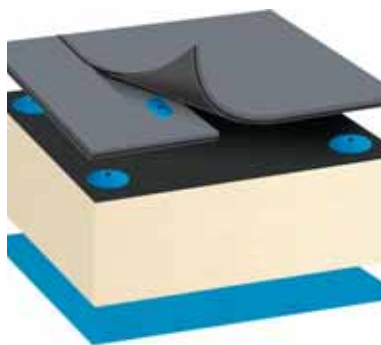
Bauderflex System – Reinforced bitumen membrane inverted roof covering systems – Torch Applied

1.1.2 Single Ply Membrane Systems - PVC and FPO

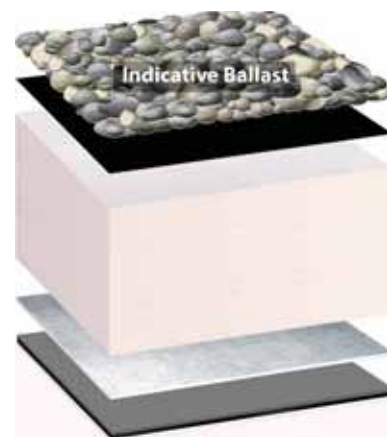
THERMOFOL PVC



Bauder Thermofol PVC - Single layer sheet warm roof covering systems - Adhered

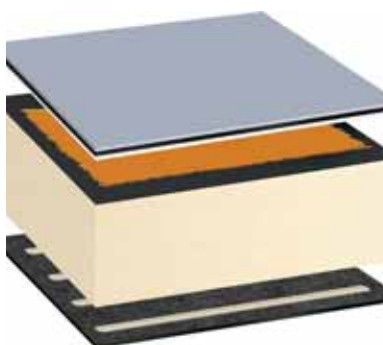


Bauder Thermofol PVC - Single layer sheet warm roof covering systems - Mechanically Fixed

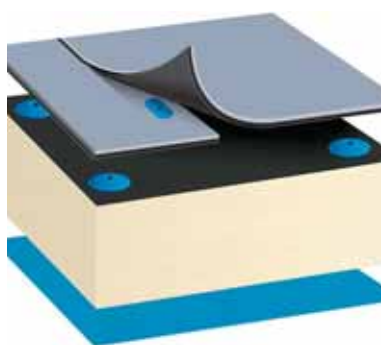


Bauder Thermofol PVC - Single layer sheet inverted roof covering systems – Loose Ballasted

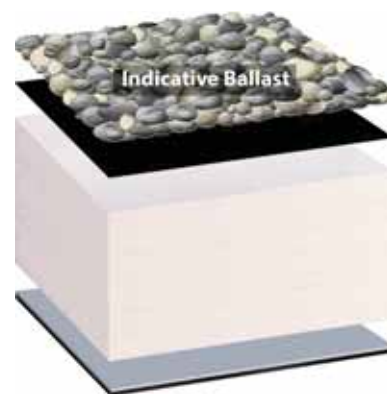
THERMOPLAN FPO



Bauder Thermoplan FPO - Single layer sheet warm roof covering systems - Adhered



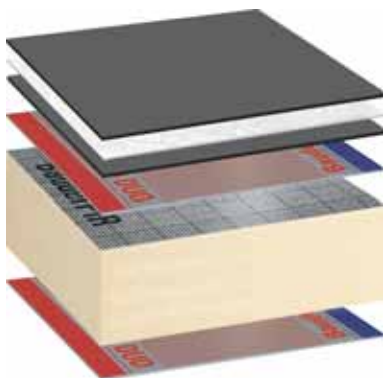
Bauder Thermoplan FPO - Single layer sheet warm roof covering systems - Mechanically Fixed



Bauder Thermoplan FPO - Single layer sheet inverted roof covering systems – Loose Ballasted

1.1.3 Liquid Applied Systems - Cold Applied

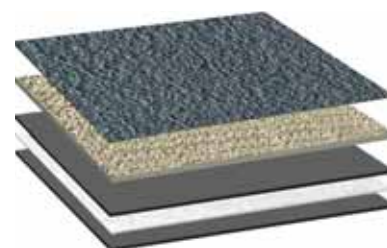
LIQUITEC COLD APPLIED



Bauder LiquiTEC Roof System – Liquid-applied warm roof covering systems – Cold Applied



Bauder LiquiTEC Roof System – Liquid-applied cold roof covering systems – Cold Applied



Bauder LiquiTEC Balcony, Walkway and Terrace System – Liquid-applied cold roof covering systems – Cold Applied

1.1.4 Liquid Applied Systems - Hot Applied

BAUDER BAKOR HOT MELT



Bauder Bakor Hot Melt – Single layer sheet inverted roof covering systems – Hot Applied

1.1.5 Green Roof Systems - Extensive and Intensive

EXTENSIVE



Bauder Sedum Blanket - Extensive Green Roof System



Bauder Biodiverse Wildflower Blanket - Extensive Green Roof System

INTENSIVE



Bauder Intensive Landscaping and Substrate - Intensive Green Roof System

2 PROPERTIES

2.1 IFC

All IFC Definitions have been obtained from: <http://www.buildingsmart-tech.org/ifc/IFC2x3/TC1/html/index.htm>

IfcRoofCommon

Reference	Reference ID for this specified type in this project (e.g. type 'A-1')
FireRating	Fire rating for this object. It is given according to the national fire safety classification.
IsExternal	Indication whether the element is designed for use in the exterior (TRUE) or not (FALSE). If (TRUE) it is an external element and faces the outside of the building.

IfcSlabCommon

AcousticRating	Acoustic rating for this object. It is given according to the national building code. It indicates the sound transmission resistance of this object by an index ration (instead of providing full sound absorption values).
Combustible	Indication whether the object is made from combustible material (TRUE) or not (FALSE).
SurfaceSpreadOfFlame	Indication on how the flames spread around the surface. It is given according to the national building code that governs the fire behaviour for materials.
ThermalTransmittance	Thermal transmittance coefficient (U-Value) of a material. Here the total thermal transmittance coefficient through the slab (including all materials).
LoadBearing	Indicates whether the object is intended to carry loads (TRUE) or not (FALSE).
Compartmentation	Indication whether the object is designed to serve as a fire compartmentation (TRUE) or not (FALSE).
PitchAngle	Angle of the slab to the horizontal when used as a component for the roof (specified as 0 degrees or not asserted for cases where the slab is not used as a roof component).

2.2 COBie

NBS BIM Object Standard refer to section 2.6

www.nationalbimlibrary.com/nbs-bim-object-standard/information

2.3 NBS_Data

https://toolkit.thenbs.com/Definitions/Ss_30_40_30_40/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_42/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_43/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_70/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_71/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_72/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_78/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_79/
https://toolkit.thenbs.com/Definitions/Ss_30_40_30_80/

2.4 NBS_General

NBS BIM Object Standard refer to section 2.7

www.nationalbimlibrary.com/nbs-bim-object-standard/information

3 LOADING BAUDER BIM OBJECTS INTO AUTODESK REVIT

3.1 Layered BIM Objects

The Bauder layered BIM objects represent generic multiple layered construction systems and components for roofs.

The Bauder BIM objects are intended to be added to a project as a system family and are delivered as .rvt files with associated IFC property sets and product data.

These are generic build-ups and only certain properties should be altered as per this guide, otherwise this will invalidate the associated data.

Note: As the data is contained as type parameters in the actual build-up, there is limited material data for the Bauder products.

For further information, or for bespoke BIM objects specific to a particular Bauder Specification build-up please contact your local Bauder representative or technical@bauder.co.uk

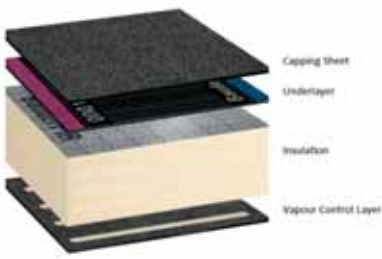
Each BIM object is accompanied by a 'front cover' image (see Fig.1 below) detailing the variable options available within that particular object.

BAUDER

BAUDER TOTAL BITUMEN WARM ROOF SYSTEM, SELF ADHERED, INCORPORATING BITUMEN CAPPING SHEET WITH BITUMEN UNDERLAYER, INSULATION AND BITUMEN VAPOUR BARRIER

Two layer, self adhered, warm roof, bitumen membrane waterproofing system suitable for new build and refurbishment applications. Root-resistant capping sheet available for green roof scenarios.





This BIM Object must be supported by a project specific specification from Bauder, incorporating system build-up, detail design and performance calculations if a full Bauder system guarantee is required. Please contact your Bauder Technical Manager or Bauder Technical Services:
E: technical@bauder.co.uk
T: 0845 271 8800



Capping Sheet
Underlayer
Insulation
Vapour Control Layer

Please contact Bauder Technical Services for confirmation of suitability to deck type
E: technical@bauder.co.uk
T: 0845 271 8800

SYSTEM OPTIONS

BAUDER TOTAL ROOF SYSTEM CAPPING SHEETS			
Colour Availability			
KSK	KSK	KSK	Plant E
Charcoal grey	Natural slate	Brown	Root resistant
			
Thickness: 3mm	3mm	3mm	5.2mm

INSULATIONS	BauderPIR FA-TE	BauderPIR Tapered
	Flatboard (full board)	(5in faced)
THICKNESSES (mm)	Approximate U* VALUE (W/m ²) Assuming concrete, metal or plywood deck with no further products beneath the deck.	
120	0.17	0.20**
150*	0.26	0.28**
180	0.35	0.37**
240	0.53	0.57**
300*	0.72	0.77**
200*	0.33	0.37**

VAPOUR CONTROL LAYERS	
BAUDER MEMBRANE	SUITABILITY TO DECK TYPE
K50 Mica	Metal Plywood OSB
	Concrete
	Contact Bauder for suitable alternatives.

* denotes only available in thicknesses over 1000mm²
** denotes U-value based on the average thickness

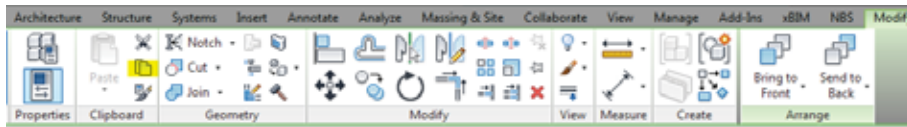
Figure.1 Screenshot

Example of one of the images shown on a Revit file detailing the variable options within that BIM object.

3.2 Adding Layered BIM Objects to a Project

The typical method for adding a layered BIM object to a project is:

1. From the library object file select the BIM object required and copy it (Ctrl + C on your keyboard) or using the 'Modify' tab on the toolbar and selecting 'copy to clipboard'.



2. Now in the project destination file paste the object (Ctrl + V on your keyboard) or using the 'Modify' tab on the tool bar and selecting paste. The BIM object will now be available for use in the project file.



Note: Typically the object will be placed in the project file as a System Family and can be deleted to avoid duplication.

3.3 Using a Layered Object Within a Project

The object can be selected from the relevant function within Revit. For example; if the product is a Roof finish; then the Roof function should be selected and then the required BIM object would be selected.

An alternative approach is that the BIM object can be added to an existing construction system within the project.

In this approach the designer would select the appropriate construction system and edit the build up to replace an existing material or layer with the required BIM Object from the material editor.

3.4 Modifying the Bauder BIM Object Variables

These BIM objects are generic build-ups and as such only certain properties should be altered.

The general properties that can be altered are:

Capping sheet colour and type	Signified by 'TYPE & COLOUR TBC' within Type properties
Insulation Type and *thickness	Signified by 'TYPE TBC' within Type properties

Note: Only certain insulation thicknesses are available from stock, please contact your local Bauder representative or technical@bauder.co.uk for confirmation.

4 ABBREVIATIONS

COBie	Construction Operations Building Information Exchange
IFC	Industry Foundation Classes
NBS	National Building Specification



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