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Introduction

Tekla Structures supports team work in a multi-domain design environment. An IFC model from the architect can be used as a design requirement model for the structural model. All models from different domains, for example from an architect and from a mechanical designer, can be used for design coordination to find out conflicts between different models. The IFC reference import supports all the following exchange requirements: Architecture, Structural, and Building services.

IFC models can be read in by using the reference import functionality. Tekla Structures supports both the IFC2x2 and IFC2x3 schemas, and both the STEP IFC and ifcXML formats, compressed or uncompressed. The reference import is read-only and therefore any modification to the original data is not allowed. The data content can be filtered by using the CAD layers. In this version of Tekla Structures the entity type of the object cannot be shown nor used for filtering. Additional attribute data can be added to and modified from the IFC reference objects.

The reference model can be used to help the modeling of the native structural objects. There is also a separate tool to convert IFC objects to native Tekla Structures parts, but it's not part of this certification content.

Only the objects having geometry can be selected. In this version the only exception is the IFC assembly hierarchy that can also be selected. Only from the selected objects it is possible to show the attributes and property set properties.

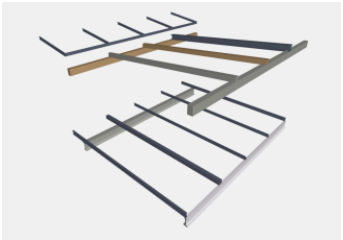
Testlist

Name test	concepts total	manually checked		
				
BeamColumn 04 / 2x3	47	36		11
Beam_01 / 2x3	10	9		1
Column 01 / 2x3	11	10		1
CoveringFurnishing-01 / 2x3	57	36		21
CurtainWall-01 / 2x3	29	7	1	21
Door 01 / 2x3	22	15		7
DoorWindow-02 / 2x3	11	7	2	2
DuplexHouse_Heating / 2x3	56	26		30
Grid 01 / 2x3	11	8	1	2
Member 01A / 2x3	10	9		1
Pile 01 / 2x3	19	14		5
PlateFastener-01 / 2x3	67	53	2	12
RampRailing-01 / 2x3	28	24		4
RampSlab-01 / 2x3	18	15		3
RandomStruc-X2 Scia / 2x3	10	10		
RandomStruc-X5 Scia / 2x3	9	9		
Reinforcement-01 / 2x3	94	60		34
Roof 02 / 2x3	12	11		1
Site 01 / 2x3	14	10		4
Slab 01S / 2x3	11	11		
Slab 02A / 2x3	24	14	3	7
Space 01A / 2x3	12	11		1
StairSlab-01 / 2x3	19	17		2
UnitTest-01S / 2x3	3	3		
Wall 01 / 2x3	19	17		2
WallSlab 03 / 2x3	32	16		16

Name test	concepts total	manually checked		
WallStandardCase 01A / 2x3	15	10	1	4
WallStandardCase 03A / 2x3	9	7		2
WallStandardCase 03S / 2x3	8	7		1
Window 01 / 2x3	22	18	1	3

Concepts

Beam_01 / 2x3



103 IfcBeam	company statement		Beam_01 / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
120 Spatial Containment	■	Not showable relation	
200 Material			
200-1 Single Material	■		
210 Property Set			
210-1 Property Set IFC Common	■		
General	company statement		Beam_01 / 2x3
_G4 Remarks	■		

BeamColumn 04 / 2x3



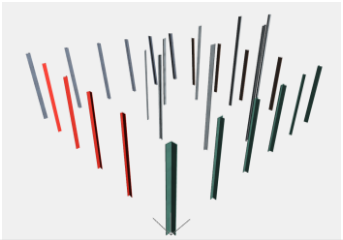
103 IfcBeam	company statement		BeamColumn 04 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-9 Geometry Mapped	■		
070 Voiding			
070-1 Voiding Geometry Explicit	■		
070-2 Voiding Geometry Mapped	■	Not supported	
070-3 Voiding Geometry SweptSolid	■		
130 Grouping			
130-1 Grouping General	■	Grouping is not supported	
200 Material			
200-1 Single Material	■		

210 Property Set	
210-1 Property Set IFC Common	■
210-3 Property Set User Defined	■
300 Type	
300-1 Type Geometry	■
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
104 IfcColumn	<i>company statement</i> <i>BeamColumn 04 / 2x3</i>
001 GUIDs	■
002 History	■
010 Naming	■
020 Placement	
020-2 Placement Relative	■
030 Geometry	
030-6 Geometry Body	
030-6-1 Geometry SweptSolid	■
030-6-9 Geometry Mapped	■
070 Voiding	
070-1 Voiding Geometry Explicit	■
070-2 Voiding Geometry Mapped	■ Not supported
070-3 Voiding Geometry SweptSolid	■
130 Grouping	
130-1 Grouping General	■ Grouping is not supported

200 Material	
200-1 Single Material	■
210 Property Set	
210-2 Property Set IFC any	■
300 Type	
300-1 Type Geometry	■
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
403 IfcFooting	<i>company statement</i> <i>BeamColumn 04 / 2x3</i>
001 GUIDs	■
002 History	■
010 Naming	■
020 Placement	
020-1 Placement Relative	■
030 Geometry	
030-6 Geometry Body	
030-6-1 Geometry SweptSolid	■
030-6-9 Geometry Mapped	■
130 Grouping	
130-1 Grouping General	■ Grouping is not supported
200 Material	
200-1 Single Material	■
210 Property Set	
210-2 Property Set IFC any	■

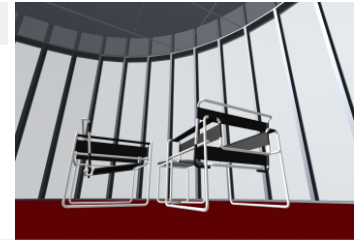
300 Type	
300-1 Type Geometry	
300-2 Type Naming	
300-3 Type Material	Not supported
300-5 Type Property Set	Not supported
General	<i>company statement</i>
_G4 Remarks	

Column 01 / 2x3



104 IfcColumn	company statement		Column 01 / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
050 CAD Layer	■		
120 Spatial Containment	■	The relation is not showable.	
200 Material			
200-1 Single Material	■		
210 Property Set			
210-1 Property Set IFC Common	■		
General	company statement		Column 01 / 2x3
_G4 Remarks	■		

CoveringFurnishing-01 / 2x3



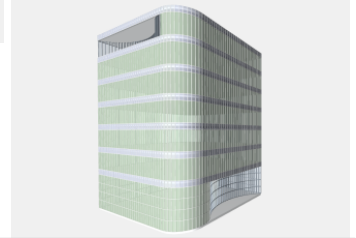
210 IfcFlowTerminal	company statement		CoveringFurnishing-01 / 2x3
001 GUIDs		■	
010 Naming		■	
020 Placement			
020-2 Placement Relative		■	
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit		■	
030-6-9 Geometry Mapped		■	
040 Presentation			
040-1 Geometric Presentation		■	
050 CAD Layer		■	
120 Spatial Containment		■	The relation is not showable.
210 Property Set			
210-1 Property Set IFC Common		■	
210-6 Property Set IFC any		■	
210-9 Property Set User Defined		■	

300 Type	
300-1 Type Geometry	■
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
303 IfcCovering	<i>company statement</i> CoveringFurnishing-01 / 2x3
010 Naming	■
020 Placement	
020-2 Placement Relative	■
030 Geometry	
030-6 Geometry Body	
030-6-1 Geometry SweptSolid	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
070 Voiding	
120 Spatial Containment	■ The relation is not showable.
200 Material	
200-1 Single Material	■
200-3 Material Layer Set	■
210 Property Set	
210-1 Property Set IFC Common	■

300 Type	
300-1 Type Geometry	■
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
304 IfcFurnishingElement	<i>company statement</i> CoveringFurnishing-01 / 2x3
001 GUIDs	■
010 Naming	■
020 Placement	
020-2 Placement Relative	■
030 Geometry	
030-6 Geometry Body	
030-6-5 Geometry Explicit	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
120 Spatial Containment	■ The relation is not showable.
200 Material	
200-1 Single Material	■
200-5 Material List	■ Not supported
210 Property Set	
210-6 Property Set IFC any	■
210-9 Property Set User Defined	■

300 Type		
300-1 Type Geometry	 Not supported	
300-2 Type Naming		
300-3 Type Material	 Not supported	
300-5 Type Property Set	 Not supported	
505 IfcSpace	<i>company statement</i>	<i>CoveringFurnishing-01 / 2x3</i>
030 Geometry		
030-3 Geometry FootPrint	 Not supported.	
030-6 Geometry Body		
030-6-1 Geometry SweptSolid		
120 Spatial Containment	 The relation is not showable.	
130 Grouping		
130-3 Grouping to Zones	 No support for zone entity.	
230 Classification	 Not supported	
508 IfcZone	<i>company statement</i>	<i>CoveringFurnishing-01 / 2x3</i>
001 GUIDs	 No support for zone entity.	
002 History	 No support for zone entity.	
010 Naming	 No support for zone entity.	
130 Grouping		
130-5 Is Group	 No support for zone entity.	
210 Property Set		
210-1 Property Set IFC Common	 No support for zone entity.	
210-9 Property Set User Defined	 No support for zone entity.	
General	<i>company statement</i>	<i>CoveringFurnishing-01 / 2x3</i>
_G4 Remarks		

CurtainWall-01 / 2x3

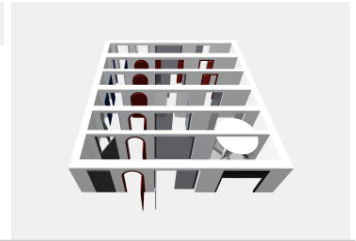


109 IfcCurtainWall	company statement		CurtainWall-01 / 2x3
001 GUIDs	■	The attributes of an element without own geometry are not supported	
002 History	■	The attributes of an element without own geometry are not supported	
010 Naming	■		
020 Placement			
020-1 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-9 Geometry By Components	■	The attributes of an element without own geometry are not shown	
040 Presentation			
040-1 Geometric Presentation	■		
050 CAD Layer	■	The attributes of an element without own geometry are not supported	
100 Element Aggregation			
100-2 Element Decomposition	■		
120 Spatial Containment	■		
200 Material			
200-1 Single Material	■	Not supported	
200-5 Material List	■	Not supported	

210 Property Set		
210-1 Property Set IFC Common	Not supported	
210-3 Property Set User Defined	The attributes of an element without own geometry are not supported	
300 Type		
300-1 Type Geometry	Not supported	
300-2 Type Naming	Not supported	
300-3 Type Material	Not supported	
300-5 Type Property Set	Not supported	
501 IfcProject	<i>company statement</i>	<i>CurtainWall-01 / 2x3</i>
010 Naming	Not supported for project entity	
502 IfcSite	<i>company statement</i>	<i>CurtainWall-01 / 2x3</i>
010 Naming	Showable only if some geometry present	
060 Location		
060-1 Geographic Location	Not supported	
060-2 Address	Not supported	
503 IfcBuilding	<i>company statement</i>	<i>CurtainWall-01 / 2x3</i>
010 Naming		
020 Placement		
020-2 Placement Relative	Not showable relation	
504 IfcBuildingStorey	<i>company statement</i>	<i>CurtainWall-01 / 2x3</i>
010 Naming	IfcBuildingStorey entity is not supported	
020 Placement		
020-2 Placement Relative	IfcBuildingStorey entity is not supported	

060 Location	
060-4 Storey Elevation	IfcBuildingStorey entity is not supported
210 Property Set	
210-1 Property Set IFC Common	IfcBuildingStorey entity is not supported
General	<i>company statement</i> CurtainWall-01 / 2x3
_G4 Remarks	

Door 01 / 2x3



302 IfcDoor	company statement		Door 01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-5 Geometry Profile	■		
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-6-9 Geometry Mapped	■		
040 Presentation			
040-1 Geometric Presentation	■		
050 CAD Layer	■		
080 Filling			
080-2 Is Filling	■	Not visualized, except that the door is in the void.	
120 Spatial Containment	■	The relation is not showable.	
200 Material			
200-1 Single Material	■		
200-5 Material List	■		

210 Property Set	
210-1 Property Set IFC Common	■
210-2 Property Set IFC any	■
210-3 Property Set User Defined	■
300 Type	
300-1 Type Geometry	■ Not supported
300-2 Type Naming	■ Not supported
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
300-6 Type Predefined Properties	
300-6-1 Type Predefined Properties Door	■ Not supported
General	<i>company statement</i>
_G4 Remarks	■

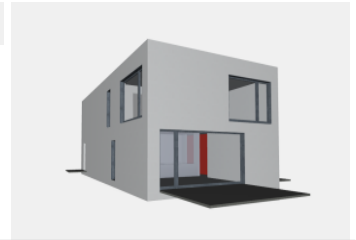
DoorWindow-02 / 2x3



301 IfcWindow	company statement		DoorWindow-02 / 2x3
001 GUIDs	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
080 Filling			
080-2 Is Filling	■	Not visualized, except that the window is in the void.	
300 Type			
300-1 Type Geometry	■	Not supported	
302 IfcDoor	company statement		DoorWindow-02 / 2x3
001 GUIDs	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
080 Filling			
080-2 Is Filling	■	Not visualized, except that the door is in the void.	

300 Type	
300-1 Type Geometry	Not supported
General	<i>company statement</i> DoorWindow-02 / 2x3
_G4 Remarks	

DuplexHouse_Heating / 2x3



204 IfcEnergyConversionDevice	company statement		DuplexHouse_Heating / 2x3
010 Naming	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-6-9 Geometry Mapped	■		
040 Presentation			
040-1 Geometric Presentation	■		
100 Element Aggregation			
100-4 Port Assignment	■	Ports are not supported	
110 Connectivity			
110-5 Connectivity by Ports	■	Connectivity not supported	
130 Grouping			
130-2 Grouping to Systems	■	Grouping is not supported	
300 Type			
300-1 Type Geometry	■	Not supported	
300-5 Type Property Set	■	Not supported	
205 IfcFlowController	company statement		DuplexHouse_Heating / 2x3
010 Naming	■		

030 Geometry	
030-6 Geometry Body	
030-6-5 Geometry Explicit	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
100 Element Aggregation	
100-4 Port Assignment	■ Ports are not supported
110 Connectivity	
110-5 Connectivity by Ports	■ Connectivity not supported
130 Grouping	
130-2 Grouping to Systems	■ Not supported
300 Type	
300-1 Type Geometry	■ Not supported
300-5 Type Property Set	■ Not supported
206 IfcFlowFitting	<i>company statement</i> <i>DuplexHouse_Heating / 2x3</i>
010 Naming	■
030 Geometry	
030-6 Geometry Body	
030-6-5 Geometry Explicit	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
100 Element Aggregation	
100-4 Port Assignment	■ Ports are not supported

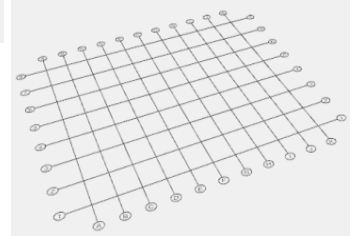
110 Connectivity		
110-5 Connectivity by Ports	■	Connectivity not supported
130 Grouping		
130-2 Grouping to Systems	■	Not supported
300 Type		
300-1 Type Geometry	■	Not supported
300-5 Type Property Set	■	Not supported
207 IfcFlowMovingDevice	company statement DuplexHouse_Heating / 2x3	
010 Naming	■	
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
040 Presentation		
040-1 Geometric Presentation	■	
100 Element Aggregation		
100-4 Port Assignment	■	Ports are not supported
110 Connectivity		
110-5 Connectivity by Ports	■	Connectivity not supported
130 Grouping		
130-2 Grouping to Systems	■	Not supported
300 Type		
300-1 Type Geometry	■	Not supported
300-5 Type Property Set	■	Not supported
208 IfcFlowSegment	company statement DuplexHouse_Heating / 2x3	

010 Naming		
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid		
030-6-5 Geometry Explicit		
030-6-9 Geometry Mapped		
040 Presentation		
040-1 Geometric Presentation		
100 Element Aggregation		
100-4 Port Assignment		Ports are not supported
110 Connectivity		
110-5 Connectivity by Ports		Connectivity not supported
130 Grouping		
130-2 Grouping to Systems		Not supported
300 Type		
300-1 Type Geometry		Not supported
300-5 Type Property Set		Not supported
210 IfcFlowTerminal		<i>company statement</i>
010 Naming		
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit		
030-6-9 Geometry Mapped		
040 Presentation		
040-1 Geometric Presentation		

100 Element Aggregation	
100-4 Port Assignment	Not supported
110 Connectivity	
110-5 Connectivity by Ports	Not supported
130 Grouping	
130-2 Grouping to Systems	Not supported
300 Type	
300-1 Type Geometry	Not supported
300-5 Type Property Set	Not supported
General	<i>company statement</i>
_G4 Remarks	

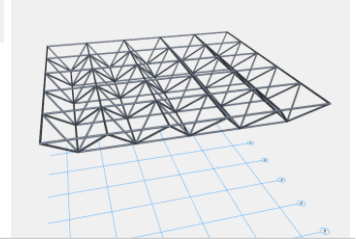
DuplexHouse_Heating / 2x3

Grid 01 / 2x3



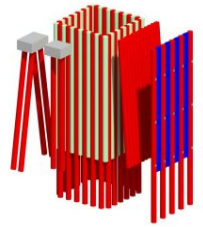
509 IfcGrid	company statement		Grid 01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-3 Geometry FootPrint	■		
040 Presentation			
040-1 Geometric Presentation	■	Not supported for grid entity	
050 CAD Layer	■	Not supported for grid entity	
120 Spatial Containment	■		
210 Property Set			
210-3 Property Set User Defined	■		
270 Grid Usage			
270-1 Grid Axes	■	Grid axes are shown, but not the tags.	
General	company statement		Grid 01 / 2x3
_G4 Remarks	■		

Member 01A / 2x3



401 IfcMember	company statement		Member 01A / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
120 Spatial Containment	■	Not showable relation	
200 Material			
200-1 Single Material	■		
300 Type			
300-1 Type Geometry	■		
General	company statement		Member 01A / 2x3
_G4 Remarks	■		

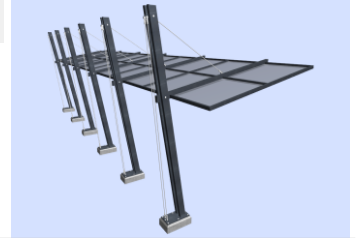
Pile 01 / 2x3



404 IfcPile	company statement		Pile 01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-1 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
030-6-9 Geometry Mapped	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
050 CAD Layer	■		
070 Voiding			
070-3 Voiding Geometry SweptSolid	■		
100 Element Aggregation			
100-2 Element Decomposition	■	The attributes of element without geometry are not supported	
120 Spatial Containment	■	Not showable relation	

200 Material	
200-1 Single Material	
210 Property Set	
210-3 Property Set User Defined	
300 Type	
300-1 Type Geometry	Not supported
300-3 Type Material	Not supported
300-5 Type Property Set	Not supported
General	<i>company statement</i>
_G4 Remarks	

PlateFastener-01 / 2x3



103 IfcBeam	company statement		PlateFastener-01 / 2x3
001 GUIDs	■		
002 History	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-9 Geometry Mapped	■		
104 IfcColumn	company statement		PlateFastener-01 / 2x3
001 GUIDs	■		
002 History	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-9 Geometry Mapped	■		
100 Element Aggregation			
100-2 Element Decomposition	■	The attributes of element without geometry are not supported	
210 Property Set			
210-3 Property Set User Defined	■		

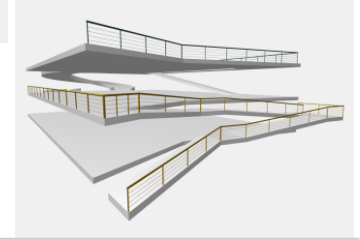
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-3 Type Material	■	Not supported
300-5 Type Property Set	■	Not supported
401 IfcMember	company statement	
		PlateFastener-01 / 2x3
001 GUIDs	■	
002 History	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-9 Geometry Mapped	■	
040 Presentation		
040-1 Geometric Presentation	■	
050 CAD Layer	■	
210 Property Set		
210-1 Property Set IFC Common	■	
210-3 Property Set User Defined	■	
300 Type		
300-2 Type Naming	■	
300-3 Type Material	■	Not supported
300-5 Type Property Set	■	Not supported
402 IfcPlate	company statement	
		PlateFastener-01 / 2x3

001 GUIDs	
002 History	
010 Naming	
020 Placement	
020-2 Placement Relative	
030 Geometry	
030-6 Geometry Body	
030-6-1 Geometry SweptSolid	
030-6-2 Geometry Clipping	
030-6-5 Geometry Explicit	
040 Presentation	
040-1 Geometric Presentation	
050 CAD Layer	
070 Voiding	
070-3 Voiding Geometry SweptSolid	
120 Spatial Containment	 Not showable relation
200 Material	
200-2 Material Layer Set	
210 Property Set	
210-1 Property Set IFC Common	
210-3 Property Set User Defined	

300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-3 Type Material	■	Not supported
300-5 Type Property Set	■	Not supported
403 IfcFooting	company statement PlateFastener-01 / 2x3	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-2 Geometry Clipping	■	
405 IfcFastener	company statement PlateFastener-01 / 2x3	
010 Naming	■	The attributes of element without geometry are not supported
020 Placement		
020-2 Placement Relative	■	Not showable relation
030 Geometry		
030-2 Geometry Axis	■	Not supported, nor relevant in referencing work flow
406 IfcMechanicalFastener	company statement PlateFastener-01 / 2x3	
001 GUIDs	■	
002 History	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	

030 Geometry	
030-6 Geometry Body	
030-6-1 Geometry SweptSolid	■
030-6-5 Geometry Explicit	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
120 Spatial Containment	■ Not showable relation
200 Material	
200-1 Single Material	■
210 Property Set	
210-6 Property Set IFC any	■
210-9 Property Set User Defined	■
300 Type	
300-1 Type Geometry	■
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
General	company statement
_G4 Remarks	■

RampRailing-01 / 2x3

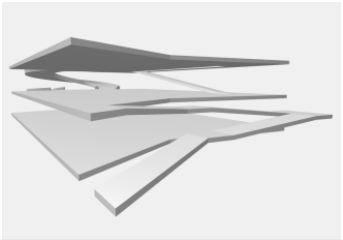


107 IfcRamp	company statement		RampRailing-01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-1 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-9 Geometry By Components	■	The attributes of element without geometry are not supported	
040 Presentation			
040-1 Geometric Presentation	■		
050 CAD Layer	■		
100 Element Aggregation			
100-2 Element Decomposition	■	The attributes of element without geometry are not supported	
120 Spatial Containment	■	Not showable relation	
200 Material			
200-1 Single Material	■		

210 Property Set		
210-1 Property Set IFC Common	■	
210-3 Property Set User Defined	■	
108 IfcRailing	company statement	
001 GUIDs	■	
002 History	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
040 Presentation		
040-1 Geometric Presentation	■	
050 CAD Layer	■	
120 Spatial Containment	■	Not showable relation
200 Material		
200-1 Single Material	■	
200-5 Material List	■	
210 Property Set		
210-1 Property Set IFC Common	■	
210-3 Property Set User Defined	■	
General	company statement	

_G4 Remarks	
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RampSlab-01 / 2x3



105 IfcSlab	company statement		RampSlab-01 / 2x3
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
070 Voiding			
070-3 Voiding Geometry SweptSolid	■		
107 IfcRamp	company statement		RampSlab-01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-1 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-9 Geometry By Components	■	The attributes of element without geometry are not supported	

040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
100 Element Aggregation	
100-2 Element Decomposition	■ The attributes of element without geometry are not supported
120 Spatial Containment	■ Not showable relation
200 Material	
200-1 Single Material	■
210 Property Set	
210-1 Property Set IFC Common	■
210-3 Property Set User Defined	■
General	company statement
_G4 Remarks	■

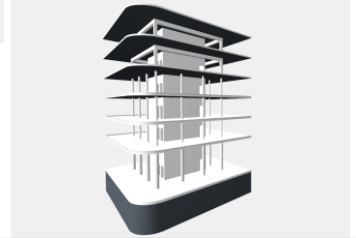
RandomStruc-X2 Scia / 2x3

411 IfcTendon		company statement	RandomStruc-X2 Scia / 2x3
001 GUIDs		■	
002 History		■	
010 Naming		■	
020 Placement			
020-2 Placement Relative		■	
030 Geometry			
030-6 Geometry Body			
030-6-4 Geometry AdvancedSweptSolid		■	
040 Presentation			
040-1 Geometric Presentation		■	
050 CAD Layer		■	
120 Spatial Containment		■	
200 Material			
200-1 Single Material		■	
General		company statement	RandomStruc-X2 Scia / 2x3
_G4 Remarks		■	

RandomStruc-X5 Scia / 2x3

403 IfcFooting	company statement		RandomStruc-X5 Scia / 2x3
001 GUIDs		■	
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit		■	
030-6-9 Geometry Mapped		■	
200 Material			
200-1 Single Material		■	
409 IfcReinforcingBar	company statement		RandomStruc-X5 Scia / 2x3
030 Geometry			
030-6 Geometry Body			
030-6-4 Geometry AdvancedSweptSolid		■	
030-6-9 Geometry Mapped		■	
050 CAD Layer		■	
200 Material			
200-1 Single Material		■	
General	company statement		RandomStruc-X5 Scia / 2x3
_G4 Remarks		■	

Reinforcement-01 / 2x3



101 IfcWallStandardCase		company statement	Reinforcement-01 / 2x3
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
120 Spatial Containment	■	Not showable relation	
103 IfcBeam		company statement	Reinforcement-01 / 2x3
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
120 Spatial Containment	■	Not showable relation	
104 IfcColumn		company statement	Reinforcement-01 / 2x3
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		

120 Spatial Containment	 Not showable relation	
105 IfcSlab	<i>company statement</i>	<i>Reinforcement-01 / 2x3</i>
020 Placement		
020-2 Placement Relative		
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid		
120 Spatial Containment	 Not showable relation	
403 IfcFooting	<i>company statement</i>	<i>Reinforcement-01 / 2x3</i>
010 Naming		
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid		
040 Presentation		
040-1 Geometric Presentation		
050 CAD Layer		
120 Spatial Containment	 Not showable relation	
210 Property Set		
210-3 Property Set User Defined		
407 IfcDiscreteAccessory	<i>company statement</i>	<i>Reinforcement-01 / 2x3</i>
001 GUIDs		
010 Naming		
020 Placement		
020-2 Placement Relative		

030 Geometry	
030-6 Geometry Body	
030-6-5 Geometry Explicit	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
120 Spatial Containment	■ Not showable relation
200 Material	
200-1 Single Material	■
210 Property Set	
210-9 Property Set User Defined	■
300 Type	
300-1 Type Geometry	■ Not supported
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
408 IfcElementAssembly	<i>company statement</i>
001 GUIDs	■
010 Naming	■
020 Placement	
020-2 Placement Relative	■
030 Geometry	
030-6 Geometry Body	
030-9 Geometry By Components	■

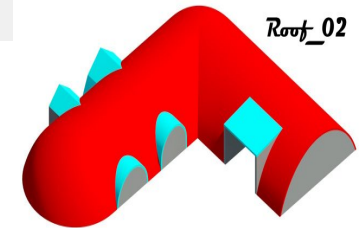
040 Presentation		
040-1 Geometric Presentation	■	
050 CAD Layer	■	
100 Element Aggregation		
100-2 Element Decomposition	■	
120 Spatial Containment	■	Not showable relation
210 Property Set		
210-9 Property Set User Defined	■	
409 IfcReinforcingBar	company statement Reinforcement-01 / 2x3	
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-4 Geometry AdvancedSweptSolid	■	
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
040 Presentation		
040-1 Geometric Presentation	■	
050 CAD Layer	■	
120 Spatial Containment	■	Not showable relation
200 Material		
200-1 Single Material	■	

210 Property Set	
210-9 Property Set User Defined	■
300 Type	
300-1 Type Geometry	■ Not supported
300-2 Type Naming	■
300-3 Type Material	■ Not supported
300-5 Type Property Set	■ Not supported
410 IfcReinforcingMesh	<i>company statement</i> Reinforcement-01 / 2x3
001 GUIDs	■
010 Naming	■
020 Placement	
020-2 Placement Relative	■
030 Geometry	
030-6 Geometry Body	
030-6-4 Geometry AdvancedSweptSolid	■
030-6-5 Geometry Explicit	■
030-6-9 Geometry Mapped	■
040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
120 Spatial Containment	■
200 Material	
200-1 Single Material	■
210 Property Set	
210-9 Property Set User Defined	■

300 Type	
300-1 Type Geometry	Not supported
300-2 Type Naming	
300-3 Type Material	Not supported
300-5 Type Property Set	Not supported
501 IfcProject	<i>company statement</i> Reinforcement-01 / 2x3
001 GUIDs	Not showable attribute for the project entity
002 History	Not showable attribute for the project entity
005 Project Units	
005-1 Project Metric Units	
008 Representation Context	
008-1 Representation Main Context	
008-2 Representation Sub Context	
008-2-2 Representation Sub Context 3D	
010 Naming	Not showable attribute for the project entity
150 Spatial Aggregation	
150-2 Spatial Decomposition	Not showable relation
503 IfcBuilding	<i>company statement</i> Reinforcement-01 / 2x3
001 GUIDs	Not showable attribute for the building entity
002 History	Not showable attribute for the building entity
010 Naming	Not showable attribute for the building entity
020 Placement	
020-1 Placement Absolute	
060 Location	
060-2 Address	Not showable attribute for the building entity

150 Spatial Aggregation		
150-1 Spatial Composition	■	Not showable relation
150-2 Spatial Decomposition	■	Not showable relation
504 IfcBuildingStorey	<i>company statement</i>	
	<i>Reinforcement-01 / 2x3</i>	
001 GUIDs	■	Not showable attribute for the building storey entity
002 History	■	Not showable attribute for the building storey entity
010 Naming	■	Not showable attribute for the building storey entity
020 Placement		
020-2 Placement Relative	■	Not showable relation
060 Location		
060-4 Storey Elevation	■	Not showable attribute for the building storey entity
120 Spatial Containment	■	Not showable relation
150 Spatial Aggregation		
150-1 Spatial Composition	■	Not showable relation
150-2 Spatial Decomposition	■	
General	<i>company statement</i>	
	<i>Reinforcement-01 / 2x3</i>	
_G4 Remarks	■	

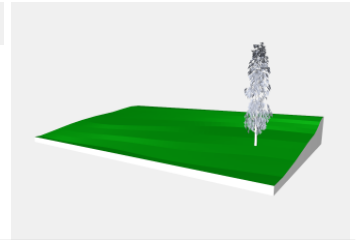
Roof 02 / 2x3



101 IfcWallStandardCase	company statement		Roof 02 / 2x3
010 Naming	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
050 CAD Layer	■		
110 IfcRoof	company statement		Roof 02 / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
050 CAD Layer	■		
100 Element Aggregation			
100-2 Element Decomposition	■	The attributes of element without geometry are not supported	
210 Property Set			
210-1 Property Set IFC Common	■		
210-3 Property Set User Defined	■		

General	company statement	Roof 02 / 2x3
_G4 Remarks		

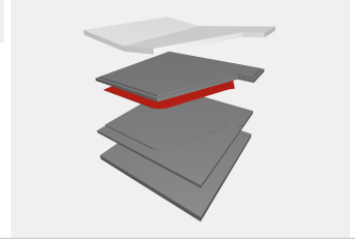
Site 01 / 2x3



502 IfcSite	company statement		Site 01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-1 Placement Absolute	■		
030 Geometry			
030-1 Geometry Box	■	Not supported anymore.	
030-3 Geometry FootPrint	■	Not supported	
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
040 Presentation			
040-1 Geometric Presentation	■		
050 CAD Layer	■		
060 Location			
060-1 Geographic Location	■	Not supported	
060-2 Address	■	Not supported	
120 Spatial Containment	■		
210 Property Set			
210-1 Property Set IFC Common	■		

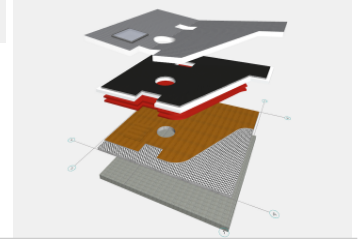
General	company statement	Site 01 / 2x3
_G4 Remarks		

Slab 01S / 2x3



105 IfcSlab		company statement	Slab 01S / 2x3
010 Naming		■	
020 Placement			
020-2 Placement Relative		■	
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid		■	
030-6-2 Geometry Clipping		■	
040 Presentation			
040-1 Geometric Presentation		■	
040-2 Material Presentation		■	
050 CAD Layer		■	
200 Material			
200-2 Material Layer Set		■	
200-3 Material Layer Usage		■	
210 Property Set			
210-1 Property Set IFC Common		■	
General		company statement	Slab 01S / 2x3
_G4 Remarks		■	

Slab 02A / 2x3

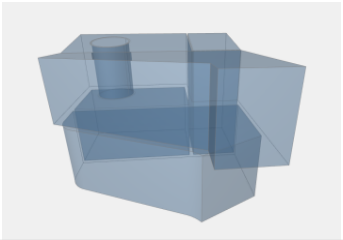


105 IfcSlab	company statement		Slab 02A / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-1 Geometry Box	■	Not supported any more	
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
030-6-5 Geometry Explicit	■		
030-6-9 Geometry Mapped	■		
070 Voiding			
070-1 Voiding Geometry Explicit	■		
070-2 Voiding Geometry Mapped	■	Not supported	
070-3 Voiding Geometry SweptSolid	■		
080 Filling			
080-1 Has Filling			
080-1-1 Has Filling Door	■	Not visualized, except that the door is in the void	
080-1-2 Has Filling Window	■	Not visualized except that the window is in the void	
120 Spatial Containment	■	Not showable relation	

130 Grouping	
130-1 Grouping General	Grouping is not supported
200 Material	
200-1 Single Material	
200-2 Material Layer Set	Supported as attributes
210 Property Set	
210-1 Property Set IFC Common	
210-2 Property Set IFC any	
210-3 Property Set User Defined	
300 Type	
300-1 Type Geometry	
300-2 Type Naming	Not supported
300-3 Type Material	Not supported
300-5 Type Property Set	Not supported
General	<i>company statement</i>
_G4 Remarks	

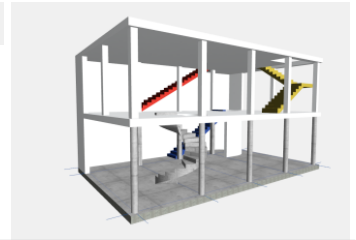
Slab 02A / 2x3

Space 01A / 2x3



505 IfcSpace	company statement		Space 01A / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
040 Presentation			
040-1 Geometric Presentation	■		
050 CAD Layer	■		
150 Spatial Aggregation			
150-1 Spatial Composition	■	Not showable relation	
210 Property Set			
210-1 Property Set IFC Common	■		
210-6 Property Set IFC any	■		
General	company statement		Space 01A / 2x3
_G4 Remarks	■		

StairSlab-01 / 2x3

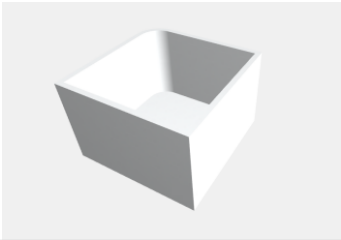


105 IfcSlab	company statement		StairSlab-01 / 2x3
001 GUIDs	■		
002 History	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
070 Voiding			
070-3 Voiding Geometry SweptSolid	■		
106 IfcStair	company statement		StairSlab-01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-1 Placement Relative	■		

030 Geometry	
030-6 Geometry Body	
030-6-5 Geometry Explicit	■
030-9 Geometry By Components	■ The attributes of element without geometry are not supported
040 Presentation	
040-1 Geometric Presentation	■
050 CAD Layer	■
100 Element Aggregation	
100-2 Element Decomposition	■
120 Spatial Containment	■ Not showable relation
200 Material	
200-1 Single Material	■
210 Property Set	
210-1 Property Set IFC Common	■
General	<i>company statement</i>
_G4 Remarks	■

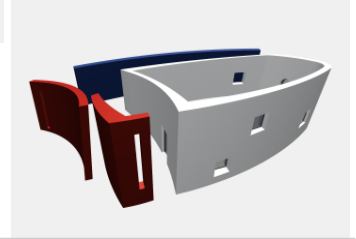
StairSlab-01 / 2x3

UnitTest-01S / 2x3



501 IfcProject	company statement		UnitTest-01S / 2x3
005 Project Units			
005-1 Project Metric Units	■		
005-2 Project Imperial Units	■		
General	company statement		UnitTest-01S / 2x3
_G4 Remarks	■		

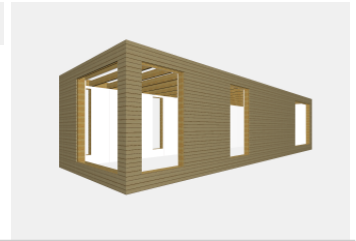
Wall 01 / 2x3



102 IfcWall	company statement		Wall 01 / 2x3
002 History		■	
010 Naming		■	
020 Placement			
020-2 Placement Relative		■	
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid		■	
030-6-2 Geometry Clipping		■	
030-6-5 Geometry Explicit		■	
040 Presentation			
040-1 Geometric Presentation		■	
040-2 Material Presentation		■	
070 Voiding			
070-1 Voiding Geometry Explicit		■	
070-3 Voiding Geometry SweptSolid		■	
080 Filling			
080-1 Has Filling			
080-1-1 Has Filling Door		■	
080-1-2 Has Filling Window		■	

200 Material		
200-1 Single Material	■	
210 Property Set		
210-1 Property Set IFC Common	■	
300 Type		
300-3 Type Material	■	Not supported
300-5 Type Property Set	■	Not supported
301 IfcWindow	company statement Wall 01 / 2x3	
020 Placement		
020-2 Placement Relative	■	
302 IfcDoor	company statement Wall 01 / 2x3	
020 Placement		
020-2 Placement Relative	■	
General	company statement Wall 01 / 2x3	
_G4 Remarks	■	

WallSlab 03 / 2x3

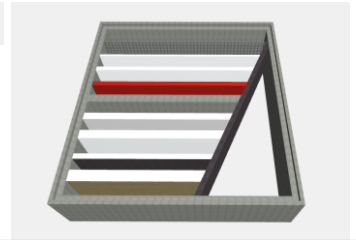


102 IfcWall	company statement		WallSlab 03 / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-9 Geometry By Components	■		
070 Voiding			
070-3 Voiding Geometry SweptSolid	■		
100 Element Aggregation			
100-2 Element Decomposition	■		
210 Property Set			
210-1 Property Set IFC Common	■	Not showable	
105 IfcSlab	company statement		WallSlab 03 / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-9 Geometry By Components	■		
100 Element Aggregation			
100-2 Element Decomposition	■		

501 IfcProject	company statement		WallSlab 03 / 2x3
001 GUIDs		GUID value is not supported for the project entity	
002 History		History is not supported for the project entity	
005 Project Units			
005-1 Project Metric Units			
008 Representation Context			
008-1 Representation Main Context			
008-2 Representation Sub Context			
008-2-2 Representation Sub Context 3D			
010 Naming		Naming is not supported for the project -entity	
150 Spatial Aggregation			
150-2 Spatial Decomposition			
503 IfcBuilding	company statement		WallSlab 03 / 2x3
001 GUIDs		IfcBuilding entity without geometry is not supported	
002 History		IfcBuilding entity without geometry is not supported	
010 Naming		IfcBuilding entity without geometry is not supported	
020 Placement			
020-1 Placement Absolute		IfcBuilding entity without geometry is not supported	
150 Spatial Aggregation			
150-1 Spatial Composition		IfcBuilding entity without geometry is not supported	
150-2 Spatial Decomposition		IfcBuilding entity without geometry is not supported	
504 IfcBuildingStorey	company statement		WallSlab 03 / 2x3
001 GUIDs		IfcBuildingStorey entity is not supported	
002 History		IfcBuildingStorey entity is not supported	
010 Naming		IfcBuildingStorey entity is not supported	

020 Placement		
020-2 Placement Relative	■ IfcBuildingStorey entity is not supported	
150 Spatial Aggregation		
150-1 Spatial Composition	■ IfcBuildingStorey entity is not supported	
150-2 Spatial Decomposition	■ IfcBuildingStorey entity is not supported	
505 IfcSpace	<i>company statement</i>	<i>WallSlab 03 / 2x3</i>
010 Naming	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
General	<i>company statement</i>	<i>WallSlab 03 / 2x3</i>
_G4 Remarks	■	

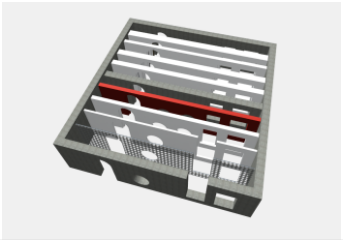
WallStandardCase 01A / 2x3



101 IfcWallStandardCase	company statement		WallStandardCase 01A / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-2 Geometry Axis	■	Not supported, nor relevant for referencing work flow	
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
030-6-2 Geometry Clipping	■		
040 Presentation			
040-1 Geometric Presentation	■		
040-2 Material Presentation	■		
050 CAD Layer	■		
110 Connectivity			
110-2 Connectivity Path	■	Not supported, nor relevant for referencing work flow	
120 Spatial Containment	■	Not showable relation	
200 Material			
200-4 Material Layer Usage	■		
210 Property Set			
210-3 Property Set User Defined	■		

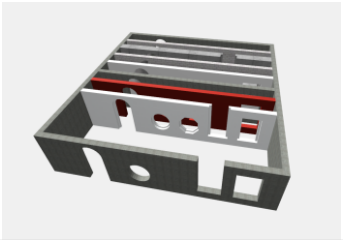
300 Type	
300-3 Type Material	Not supported
300-5 Type Property Set	Not supported
General	<i>company statement</i> WallStandardCase 01A / 2x3
_G4 Remarks	

WallStandardCase 03A / 2x3



101 IfcWallStandardCase	company statement		WallStandardCase 03A / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-2 Geometry Axis	■	Not supported, nor relevant in referencing work flow	
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
070 Voiding			
070-1 Voiding Geometry SweptSolid	■		
070-2 Voiding Geometry Explicit	■		
070-3 Voiding Geometry Mapped	■	Not supported	
120 Spatial Containment	■		
General	company statement		WallStandardCase 03A / 2x3
_G4 Remarks	■		

WallStandardCase 03S / 2x3



101 IfcWallStandardCase	company statement		WallStandardCase 03S / 2x3
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-2 Geometry Axis	■	Not supported, nor relevant in referencing work flow	
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
070 Voiding			
070-1 Voiding Geometry SweptSolid	■		
070-2 Voiding Geometry Explicit	■		
120 Spatial Containment	■		
General	company statement		WallStandardCase 03S / 2x3
_G4 Remarks	■		

Window 01 / 2x3



301 IfcWindow	company statement		Window 01 / 2x3
001 GUIDs	■		
002 History	■		
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-5 Geometry Profile	■		
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-6-9 Geometry Mapped	■		
040 Presentation			
040-1 Geometric Presentation	■		
050 CAD Layer	■		
080 Filling			
080-2 Is Filling	■	Not visualized, except that the window is in the void.	
120 Spatial Containment	■		
200 Material			
200-1 Single Material	■		
200-5 Material List	■		

210 Property Set	
210-1 Property Set IFC Common	
210-2 Property Set IFC any	
210-3 Property Set User Defined	
300 Type	
300-1 Type Geometry	Not supported
300-2 Type Naming	
300-3 Type Material	Not supported
300-5 Type Property Set	Not supported
300-6 Type Predefined Properties	
300-6-1 Type Predefined Properties Window	
General	<i>company statement</i>
_G4 Remarks	