

Table of contents

Introduction

Testlist

Concepts




Introduction

DDS-CAD has been IFC compliant for many years, supporting both import as well as export. The IFC interface is delivered with DDS-CAD and automatically installed, as it is fully integrated into the software.

The certified IFC2x3 CV2.0 MEP Export is available for DDS-CAD version 10 and all DDS-CAD users with an active support & maintenance get automatic access to it.

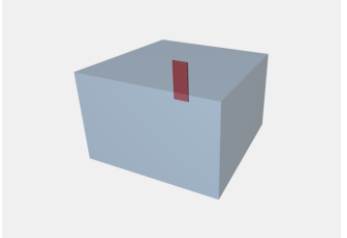
DDS-CAD has support for the following IFC 2x3 file formats: .ifc and .ifcZIP, with export supporting the MEP Exchange Requirements. All required IFC data are automatically integrated as native data inside a DDS-CAD project. IFC data can be managed in the Manage Exchange Requirements dialog, allowing the user to export DDS-CAD specific properties as well.

Testlist

Name test	concepts total	manually checked		
				
CharsetTest-01MEP / 2x3	2	1	1	
DuplexHouse_Electrical / 2x3	65	41	6	18
DuplexHouse_Heating / 2x3	56	54	1	1
DuplexHouse_Sanitary / 2x3	52	48		4
DuplexHouse_Ventilation / 2x3	44	43		1
RandomMEP-X1 / 2x3	58	56		2
RandomMEP-X2 / 2x3	71	71		
RandomMEP-X3 / 2x3	76	76		
RandomMEP-X4 / 2x3	43	43		
RandomMEP-X5 / 2x3	43	43		
Space_01MEP / 2x3	15	13		2
UnitTest-01MEP / 2x3	3	2	1	

Concepts

CharsetTest-01MEP / 2x3
















General	<i>company statement</i>		<i>CharsetTest-01MEP / 2x3</i>
_G1 Character sets	■	DDS 9 is restricted to western European languages (English, German and Norwegian).	
_G4 Remarks	■		














DuplexHouse_Electrical / 2x3






























DuplexHouse_Electrical / 2x3

204 IfcEnergyConversionDevice	<i>company statement</i>	
010 Naming	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
020 Placement 020-2 Placement Relative	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
030 Geometry 030-6 Geometry Body 030-6-5 Geometry Explicit 030-6-9 Geometry Mapped	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
100 Element Aggregation 100-4 Port Assignment	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
110 Connectivity 110-5 Connectivity by Ports	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
120 Spatial Containment	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
130 Grouping 130-2 Grouping to Systems	■	We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.

300 Type		
300-1 Type Geometry		We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
300-2 Type Naming		We do not currently support the devices that plugs into the electrical sockets, they are simply proxy elements in our electrical software.
205 IfcFlowController	<i>company statement</i>	
010 Naming		
020 Placement		
020-2 Placement Relative		
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit		All flow controllers have mapped geometry.
030-6-9 Geometry Mapped		
100 Element Aggregation		
100-4 Port Assignment		The 4 flow controllers without ports in the model are distribution boards. The objects inside them have the ports.
110 Connectivity		
110-5 Connectivity by Ports		Distribution boards (IfcFlowController) will not get ports, only the objects inside them.
120 Spatial Containment		
130 Grouping		
130-2 Grouping to Systems		
300 Type		
300-1 Type Geometry		Flow controllers representing distribution boards will not get a type element.
300-2 Type Naming		Flow controllers representing distribution boards will not get a type element.
206 IfcFlowFitting	<i>company statement</i>	
010 Naming		

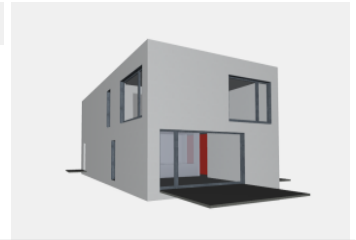
020 Placement		
020-2 Placement Relative		
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit		All flow fittings have mapped geometry.
030-6-9 Geometry Mapped		
100 Element Aggregation		
100-4 Port Assignment		
110 Connectivity		
110-5 Connectivity by Ports		
120 Spatial Containment		
130 Grouping		
130-2 Grouping to Systems		
300 Type		
300-1 Type Geometry		
300-2 Type Naming		
208 IfcFlowSegment		<i>company statement</i> <i>DuplexHouse_Electrical / 2x3</i>
010 Naming		
020 Placement		
020-2 Placement Relative		
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit		We do not export cables to 2x3, only to version 4. The cables in the export are only virtual ones inside the centrals.
030-6-9 Geometry Mapped		We do not export cables to 2x3, only to version 4. The cables in the export are only virtual ones inside the centrals.

040 Presentation		
040-1 Geometric Presentation		We do not export cables to 2x3, only to version 4. The cables in the export are only virtual ones inside the centrals.
100 Element Aggregation		
100-4 Port Assignment		
110 Connectivity		
110-5 Connectivity by Ports		
120 Spatial Containment		
130 Grouping		
130-2 Grouping to Systems		
300 Type		
300-1 Type Geometry		We do not export cables to 2x3, only to version 4. The cables in the export are only virtual ones inside the centrals.
300-2 Type Naming		
210 IfcFlowTerminal		<i>company statement</i> <i>DuplexHouse_Electrical / 2x3</i>
010 Naming		Can't set names freely. Will get name automatically.
020 Placement		
020-2 Placement Relative		
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit		All flow terminals have mapped geometry.
030-6-9 Geometry Mapped		
040 Presentation		
040-1 Geometric Presentation		Colors will be set according to material used. Can't be set manually.
050 CAD Layer		

100 Element Aggregation			
100-4 Port Assignment			
110 Connectivity			
110-5 Connectivity by Ports			
120 Spatial Containment			
130 Grouping			
130-2 Grouping to Systems			
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			
501 IfcProject		<i>company statement</i>	<i>DuplexHouse_Electrical / 2x3</i>
010 Naming			
503 IfcBuilding		<i>company statement</i>	<i>DuplexHouse_Electrical / 2x3</i>
010 Naming			
504 IfcBuildingStorey		<i>company statement</i>	<i>DuplexHouse_Electrical / 2x3</i>
010 Naming			
020 Placement			
020-2 Placement Relative			
150 Spatial Aggregation			
150-1 Spatial Composition			
507 IfcSystem		<i>company statement</i>	<i>DuplexHouse_Electrical / 2x3</i>

010 Naming	■		
130 Grouping			
130-2 Grouping to Systems	■		
130-5 Is Group	■		
General		<i>company statement</i>	<i>DuplexHouse_Electrical / 2x3</i>
_G4 Remarks	■		














DuplexHouse_Heating / 2x3



204 IfcEnergyConversionDevice	<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	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
130 Grouping			
130-2 Grouping to Systems	■		
300 Type			
300-1 Type Geometry	■		
300-5 Type Property Set	■		
205 IfcFlowController	<i>company statement</i>		<i>DuplexHouse_Heating / 2x3</i>
010 Naming	■		

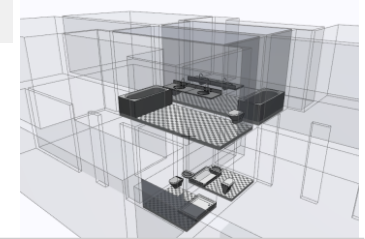
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
040 Presentation		
040-1 Geometric Presentation	■	
100 Element Aggregation		
100-4 Port Assignment	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
130 Grouping		
130-2 Grouping to Systems	■	
300 Type		
300-1 Type Geometry	■	
300-5 Type Property Set	■	
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	■	

110 Connectivity			
110-5 Connectivity by Ports		■	
130 Grouping			
130-2 Grouping to Systems		■	
300 Type			
300-1 Type Geometry		■	
300-5 Type Property Set		■	
207 IfcFlowMovingDevice			<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		■	
110 Connectivity			
110-5 Connectivity by Ports		■	
130 Grouping			
130-2 Grouping to Systems		■	
300 Type			
300-1 Type Geometry		■	
300-5 Type Property Set		■	
208 IfcFlowSegment			<i>company statement</i> <i>DuplexHouse_Heating / 2x3</i>

010 Naming		
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid		
030-6-5 Geometry Explicit		
030-6-9 Geometry Mapped		We export swept solid for segments, as we found mapped geometry to not decrease file size on such objects
040 Presentation		
040-1 Geometric Presentation		
100 Element Aggregation		
100-4 Port Assignment		
110 Connectivity		
110-5 Connectivity by Ports		
130 Grouping		
130-2 Grouping to Systems		Floor heating systems are supported, but the underfloor tubing will not be part of the systems. The distribution chamber element represents the floor tubing in the system.
300 Type		
300-1 Type Geometry		
300-5 Type Property Set		
210 IfcFlowTerminal		<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		■	
110 Connectivity			
110-5 Connectivity by Ports		■	
130 Grouping			
130-2 Grouping to Systems		■	
300 Type			
300-1 Type Geometry		■	
300-5 Type Property Set		■	
General			<i>company statement</i>
_G4 Remarks		■	
			<i>DuplexHouse_Heating / 2x3</i>














DuplexHouse_Sanitary / 2x3
















205 IfcFlowController		<i>company statement</i>	<i>DuplexHouse_Sanitary / 2x3</i>
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	■		
100 Element Aggregation			
100-4 Port Assignment	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
120 Spatial Containment	■		
130 Grouping			
130-2 Grouping to Systems	■		
206 IfcFlowFitting		<i>company statement</i>	<i>DuplexHouse_Sanitary / 2x3</i>
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	■
100 Element Aggregation	
100-4 Port Assignment	■
110 Connectivity	
110-5 Connectivity by Ports	■
120 Spatial Containment	■
130 Grouping	
130-2 Grouping to Systems	■
208 IfcFlowSegment	<i>company statement</i>
010 Naming	■
020 Placement	
020-2 Placement Relative	■

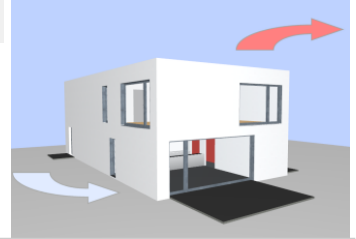
DuplexHouse_Sanitary / 2x3

030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid		
030-6-5 Geometry Explicit		
030-6-9 Geometry Mapped		Since we normally use SweptSolid, we didn't see much use in mapping the geometry. The mapping overhead would make the file bigger than just explicitly giving the SweptSolid geometry.
040 Presentation		
040-1 Geometric Presentation		
100 Element Aggregation		
100-4 Port Assignment		
110 Connectivity		
110-5 Connectivity by Ports		
120 Spatial Containment		
130 Grouping		
130-2 Grouping to Systems		
210 IfcFlowTerminal		<i>company statement</i> <i>DuplexHouse_Sanitary / 2x3</i>
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		
100 Element Aggregation		
100-4 Port Assignment		
110 Connectivity		
110-5 Connectivity by Ports		
120 Spatial Containment		
130 Grouping		
130-2 Grouping to Systems		
200 Material		
200-1 Single Material		
210 Property Set		
210-6 Property Set IFC any		
210-9 Property Set User Defined		We can only export our own proprietary psets, if wanted, not user defined. This will come in future version.
300 Type		
300-1 Type Geometry		
300-2 Type Naming		
300-3 Type Material		
300-5 Type Property Set		
507 IfcSystem		<i>company statement</i> <i>DuplexHouse_Sanitary / 2x3</i>
010 Naming		
130 Grouping		
130-5 Is Group		

250 System Assignment			
250-2 Services Spatial Element	■		
General		<i>company statement</i>	<i>DuplexHouse_Sanitary / 2x3</i>
_G4 Remarks	■		




DuplexHouse_Ventilation / 2x3



206 IfcFlowFitting		<i>company statement</i>	<i>DuplexHouse_Ventilation / 2x3</i>
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	■		
100 Element Aggregation			
100-4 Port Assignment	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
120 Spatial Containment	■		
130 Grouping			
130-2 Grouping to Systems	■		
207 IfcFlowMovingDevice		<i>company statement</i>	<i>DuplexHouse_Ventilation / 2x3</i>
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	■	
100 Element Aggregation		
100-4 Port Assignment	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
208 IfcFlowSegment		<i>company statement</i>
		<i>DuplexHouse_Ventilation / 2x3</i>
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	■	Flow moving devices are now in file. We normally use swept solids for flow segments, then mapped geometry only creates bigger files, so we do not use it.
040 Presentation		
040-1 Geometric Presentation	■	
100 Element Aggregation		
100-4 Port Assignment	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
210 IfcFlowTerminal		<i>company statement</i> <i>DuplexHouse_Ventilation / 2x3</i>
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			
100 Element Aggregation			
100-4 Port Assignment			
110 Connectivity			
110-5 Connectivity by Ports			
120 Spatial Containment			
130 Grouping			
130-2 Grouping to Systems			
507 IfcSystem		<i>company statement</i>	<i>DuplexHouse_Ventilation / 2x3</i>
010 Naming			
130 Grouping			
130-5 Is Group			
250 System Assignment			
250-2 Services Spatial Element			
General		<i>company statement</i>	<i>DuplexHouse_Ventilation / 2x3</i>
_G4 Remarks			

RandomMEP-X1 / 2x3

204 IfcEnergyConversionDevice		<i>company statement</i>	<i>RandomMEP-X1 / 2x3</i>
010 Naming	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
120 Spatial Containment	■		
130 Grouping			
130-2 Grouping to Systems	■		
230 Classification	■		
300 Type			
300-1 Type Geometry	■		
300-2 Type Naming	■		
300-5 Type Property Set	■		
205 IfcFlowController		<i>company statement</i>	<i>RandomMEP-X1 / 2x3</i>
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		

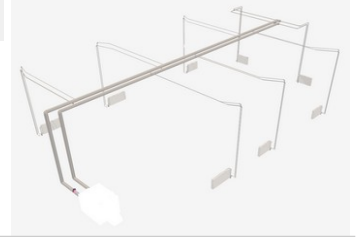
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
230 Classification	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
206 IfcFlowFitting		<i>company statement</i>
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	■	

110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
<i>230 Classification</i>	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
208 IfcFlowSegment		<i>company statement</i> <i>RandomMEP-X1 / 2x3</i>
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
<i>230 Classification</i>	■	

300 Type		
300-1 Type Geometry		
300-2 Type Naming		
300-5 Type Property Set		
210 IfcFlowTerminal		<i>company statement</i> <i>RandomMEP-X1 / 2x3</i>
010 Naming		
020 Placement		
020-2 Placement Relative		
030 Geometry		
030-6 Geometry Body		
<i>030-6-1 Geometry SweptSolid</i>		
030-6-5 Geometry Explicit		
030-6-9 Geometry Mapped		
110 Connectivity		
110-5 Connectivity by Ports		The sinks are a bit special. They do in our system not have ports, only the pipes leading to and from the sink have ports. The sink itself just surrounds the system.
120 Spatial Containment		
130 Grouping		
130-2 Grouping to Systems		The sinks are a bit special. They do in our system not belong in the system, only the pipes leading to and from the sink are in the system. The sink itself just surrounds the system.
230 Classification		

300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
507 IfcSystem		<i>company statement</i> <i>RandomMEP-X1 / 2x3</i>
010 Naming	■	
130 Grouping		
General		<i>company statement</i> <i>RandomMEP-X1 / 2x3</i>
_G4 Remarks	■	

RandomMEP-X2 / 2x3

















204 IfcEnergyConversionDevice		<i>company statement</i>	<i>RandomMEP-X2 / 2x3</i>
001 GUIDs	■		
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-9 Geometry Mapped	■		
050 CAD Layer	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
120 Spatial Containment	■		
130 Grouping			
130-2 Grouping to Systems	■		
300 Type			
300-1 Type Geometry	■		
300-2 Type Naming	■		
300-5 Type Property Set	■		
205 IfcFlowController		<i>company statement</i>	<i>RandomMEP-X2 / 2x3</i>
001 GUIDs	■		

010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-9 Geometry Mapped	■	
050 CAD Layer	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
<i>230 Classification</i>	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
206 IfcFlowFitting		<i>company statement</i>
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	














030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
230 Classification	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
207 IfcFlowMovingDevice		<i>company statement</i> <i>RandomMEP-X2 / 2x3</i>
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	

120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
<i>230 Classification</i>	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
208 IfcFlowSegment		<i>company statement</i> <i>RandomMEP-X2 / 2x3</i>
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
<i>230 Classification</i>	■	
300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	

210 IfcFlowTerminal		<i>company statement</i>	<i>RandomMEP-X2 / 2x3</i>
001 GUIDs			
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			
110 Connectivity			
110-5 Connectivity by Ports			
120 Spatial Containment			
130 Grouping			
130-2 Grouping to Systems			
<i>230 Classification</i>			
300 Type			
300-1 Type Geometry			
300-2 Type Naming			
300-5 Type Property Set			
General		<i>company statement</i>	<i>RandomMEP-X2 / 2x3</i>
_G4 Remarks			

RandomMEP-X3 / 2x3

204 IfcEnergyConversionDevice	<i>company statement</i>	<i>RandomMEP-X3 / 2x3</i>
001 GUIDs	■	
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	■ ■ ■ ■ ■	
110 Connectivity 110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping 130-2 Grouping to Systems	■	
230 Classification	■	
300 Type 300-1 Type Geometry 300-2 Type Naming 300-5 Type Property Set	■ ■ ■	

205 IfcFlowController		<i>company statement</i>	<i>RandomMEP-X3 / 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			
110 Connectivity			
110-5 Connectivity by Ports			
120 Spatial Containment			
130 Grouping			
130-2 Grouping to Systems			
<i>230 Classification</i>			
300 Type			
300-1 Type Geometry			
300-2 Type Naming			
300-5 Type Property Set			
206 IfcFlowFitting		<i>company statement</i>	<i>RandomMEP-X3 / 2x3</i>
001 GUIDs			
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	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
230 Classification	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
208 IfcFlowSegment		<i>company statement</i> <i>RandomMEP-X3 / 2x3</i>
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
110 Connectivity		
110-5 Connectivity by Ports	■	

120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
210 Property Set		
210-6 Property Set IFC any	■	
<i>230 Classification</i>	■	
300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
210 IfcFlowTerminal		<i>company statement</i> <i>RandomMEP-X3 / 2x3</i>
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
<i>030-6-1 Geometry SweptSolid</i>	■	
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	

210 Property Set		
210-6 Property Set IFC any	■	
230 Classification	■	
300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
211 IfcFlowTreatmentDevice		<i>company statement</i> <i>RandomMEP-X3 / 2x3</i>
001 GUIDs	■	
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
230 Classification	■	

300 Type		
300-1 Type Geometry	■	
300-2 Type Naming	■	
300-5 Type Property Set	■	
General		<i>company statement</i>
_G4 Remarks	■	

RandomMEP-X3 / 2x3

RandomMEP-X4 / 2x3

205 IfcFlowController		<i>company statement</i>	<i>RandomMEP-X4 / 2x3</i>
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-6-9 Geometry Mapped	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
120 Spatial Containment	■		
130 Grouping			
130-2 Grouping to Systems	■		
230 Classification	■		
300 Type			
300-2 Type Naming	■		
300-5 Type Property Set	■		
206 IfcFlowFitting		<i>company statement</i>	<i>RandomMEP-X4 / 2x3</i>
010 Naming	■		

020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-5 Geometry Explicit	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
<i>230 Classification</i>	■	
300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
208 IfcFlowSegment		<i>company statement</i> <i>RandomMEP-X4 / 2x3</i>
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
<i>230 Classification</i>	■	

300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
210 IfcFlowTerminal		<i>company statement</i> <i>RandomMEP-X4 / 2x3</i>
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	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
230 Classification	■	
300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
507 IfcSystem		<i>company statement</i> <i>RandomMEP-X4 / 2x3</i>
010 Naming	■	
130 Grouping		
130-2 Grouping to Systems	■	

210 Property Set			
210-6 Property Set IFC any	■		
230 Classification	■		
General		company statement	RandomMEP-X4 / 2x3
_G4 Remarks	■		

RandomMEP-X5 / 2x3

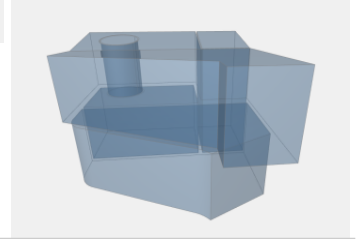
204 IfcEnergyConversionDevice		<i>company statement</i>	<i>RandomMEP-X5 / 2x3</i>
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-5 Geometry Explicit	■		
030-6-9 Geometry Mapped	■		
110 Connectivity			
110-5 Connectivity by Ports	■		
120 Spatial Containment	■		
130 Grouping			
130-2 Grouping to Systems	■		
230 Classification	■		
300 Type			
300-2 Type Naming	■		
300-5 Type Property Set	■		
206 IfcFlowFitting		<i>company statement</i>	<i>RandomMEP-X5 / 2x3</i>
010 Naming	■		

020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
230 Classification	■	
300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
208 IfcFlowSegment		<i>company statement</i>
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-1 Geometry SweptSolid	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	






130 Grouping		
130-2 Grouping to Systems	■	
210 Property Set		
210-6 Property Set IFC any	■	
<i>230 Classification</i>	■	
300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
210 IfcFlowTerminal		<i>company statement</i> <i>RandomMEP-X5 / 2x3</i>
010 Naming	■	
020 Placement		
020-2 Placement Relative	■	
030 Geometry		
030-6 Geometry Body		
030-6-9 Geometry Mapped	■	
110 Connectivity		
110-5 Connectivity by Ports	■	
120 Spatial Containment	■	
130 Grouping		
130-2 Grouping to Systems	■	
210 Property Set		
210-6 Property Set IFC any	■	
<i>230 Classification</i>	■	

300 Type		
300-2 Type Naming	■	
300-5 Type Property Set	■	
507 IfcSystem		<i>company statement</i> <i>RandomMEP-X5 / 2x3</i>
010 Naming	■	
250 System Assignment		
250-2 Services Spatial Element	■	
General		<i>company statement</i> <i>RandomMEP-X5 / 2x3</i>
_G4 Remarks	■	

Space_01MEP / 2x3

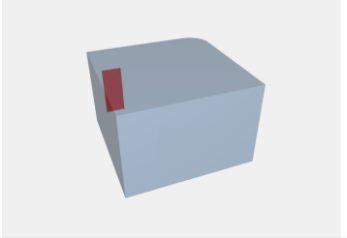


111 IfcBuildingElementProxy		<i>company statement</i>	<i>Space_01MEP / 2x3</i>
010 Naming	■		
020 Placement			
020-2 Placement Relative	■		
030 Geometry			
030-6 Geometry Body			
030-6-1 Geometry SweptSolid	■		
210 Property Set			
210-2 Property Set IFC any	■		
505 IfcSpace		<i>company statement</i>	<i>Space_01MEP / 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	■		
030-6-2 Geometry Clipping	■		

<p>040 Presentation</p> <p>040-1 Geometric Presentation</p>	<p> Since the space is not a physical object, we do not export colors or other geometric formatting. We leave it to receiving applications to visualize the spaces as they see fit.</p>
<p>050 CAD Layer</p>	<p> We only have layers for physical objects in our internal models.</p>
<p>150 Spatial Aggregation</p> <p>150-1 Spatial Composition</p>	<p></p>
<p>210 Property Set</p> <p>210-6 Property Set IFC any</p>	<p></p>
<p>General</p>	<p><i>company statement</i></p>
<p>_G4 Remarks</p>	<p></p>

Space_01MEP / 2x3

UnitTest-01MEP / 2x3



501 lfcProject	<i>company statement</i>	<i>UnitTest-01MEP / 2x3</i>
005 Project Units		
005-1 Project Metric Units	■	
005-2 Project Imperial Units	■	
General	<i>company statement</i>	<i>UnitTest-01MEP / 2x3</i>
_G4 Remarks	■ We can't model round walls in our internal model. I have used a lfcFlowFitting instead, to prove the deg/rad support.	