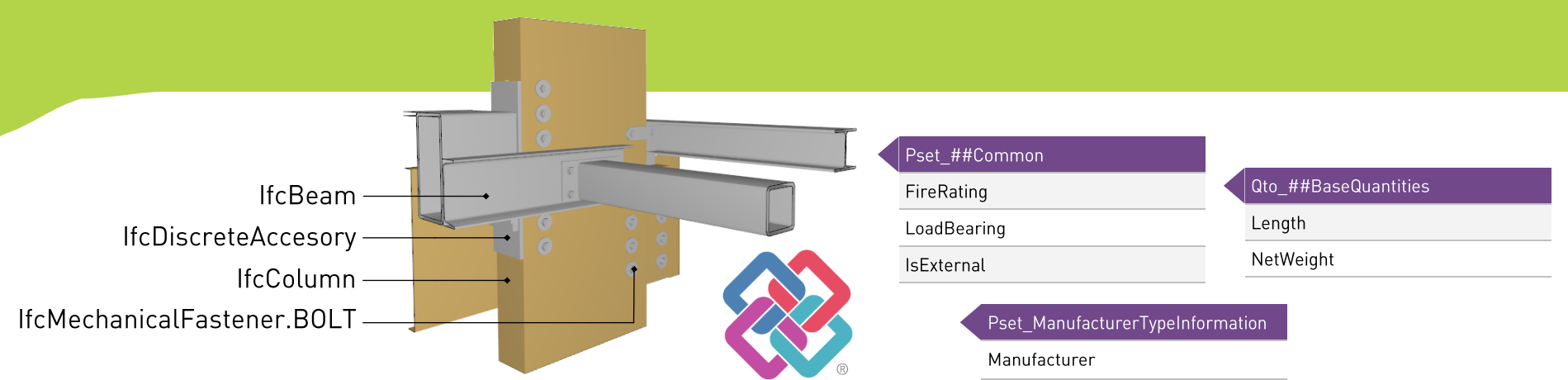


IFC EXPORT MAPPING TABLE



ENTITEITEN, TYPES EN EIGENSCHAPPEN

Aside from a good export, it is crucial to supply the IFC model with the right information (read: properties). These properties vary by Entity and Type. With the use of the Export Mapping Table you can edit which (sub)category is exported to a specific Entity. In turn, the Entity determines what information the element can natively carry.

The PD-list determines which information JP requires at certain stages. There are three kinds of properties:

- Properties with are part of the BIM Basic IDM
- Properties with "IFC" are found native in IFC
- Properties with "TBI" are not found native in IFC

CORRECT USE OF ENTITIES...?

The BIM Basic IDM sets requirements for the correct use of entities. What exactly is correct, is sometimes hard to judge. Especially for the lesser known elements. As a contractor, JP advises following the list below when exporting to IFC. Notice: installations are not included, for simplicity's sake.

Onderdeel	IFC Class Name	IFC Type
Beams	IfcBeam	
Levels	IfcBuildingStorey	
Chimney	IfcChimney	
Ceilings	IfcCovering	CEILING
Architectural floors	IfcCovering	FLOORING
Columns	IfcColumn	
Curtain Walls	IfcCurtainWall	
Stekkenbak / balkdragers / ankers	IfcDiscreteAccessory	
Doors	IfcDoor	
Glue / morter / welds	IfcFastener	
Foundation	IfcFooting	
Furniture	IfcFurniture	
Grids	IfcGrid	
Bolts / nuts / screws	IfcMechanicalFastener	
Part of a whole, like Mullions of a Curtain Wall	IfcMember	
Voids	IfcOpeningElement	
Pile	IfcPile	
Plate	IfcPlate	
Railing	IfcRailing	
Ramps	IfcRamp	
Rebar	IfcReinforcingBar	
Rebar mesh / net	IfcReinforcingMesh	
Roof	IfcRoof	
Sun shading	IfcShadingDevice	
Floors	IfcSlab	
Room / Area	IfcSpace / IfcZone	
Stairs	IfcStair	
Prestressed rebar	IfcTendon	
Elevator	IfcTransportElement	ELEVATOR
Escalator	IfcTransportElement	ESCALATOR
Moving walkway	IfcTransportElement	MOVINGWALKWAY
Walls	IfcWall	
Windows	IfcWindow	

MAPPING TABLE SETTINGS GUIDE

From top to bottom... :

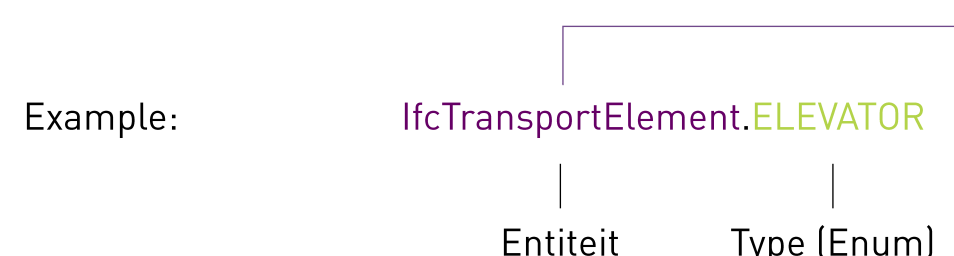
- Load... Load an existing Export Mapping...
- Standard Don't save current edits and reset back to the last loaded Export Mapping
- Save as... Save current Export Mapping...

IFCEXPORTAS EN IFCEXPORTTYPE

Aside from the Export Mapping Table, there is another way to edit the Export to IFC. This is made possible by adding two parameters, IfcExportAs and IfcExportType, as Family- or Project Parameter. In summary:

- IfcExportAs functions as IFC Class Name, and houses the Entity.
- IfcExportType functions as IFC Type, and influences Type (Enum), but...

...IfcExportAs can be used for both Entity and Type in one parameter, by putting a dot at the end of the Entity, followed by the Type (Enum).



Do you not yet have these parameters? Ask your BIM director for the Shared Parameter file.

This way, GUIDs match between projects and can be read in Revit through tags / schedules.

IfcExportAs and IfcExportType override the Export Mapping Table when exporting to IFC.

Double check your notation
IfcTransportElement and IfcTransportElementType work both. We advise writing the Entity name without -Type.

Hierarchy and inherited propertysets

Higher in the IFC hierarchy exist overarching entities. These entities contain their own propertysets. These properties are inherited by the entities below it, and are commonly generic in nature. The most known overarching entity is IfcElement.

Some examples of Psets in IfcElement are...

- Pset_ManufacturerOccurrence
 - Pset_ManufacturerTypeInformation
 - Pset_Warranty
 - Pset_Condition
 - Pset_ServiceLife
-

IFC STRUCTURE

To really get control of IFC, you need to know the structure behind the format. BuildingSMART has, since IFC4, greatly improved their online documentation. This makes it easier to explain where certain Entities and Enumerations belong, and how this influences their Property- and Quantitysets.

Almost all entities we use in the Built Environment exist within the IfcSharedBldgElements. Most of the time, they follow the same structure:

- 6.1 IfcSharedBldgElements
 - 6.1.1 Schema Definition = Discription of elements in the schema
 - 6.1.2 Types = Available Types (Enums) per Entity
 - 6.1.2.7 IfcCoveringTypeEnum
 - 6.1.3 Entities = Available Entities
 - 6.1.3.12 IfcCovering
 - 6.1.4 Property Sets = Property Sets per Entiteit / Enum
 - 6.1.4.7 Pset_CoveringCeiling
 - 6.1.4.8 Pset_CoveringCommon
 - 6.1.4.9 Pset_CoveringFlooring
 - 6.1.5 Quantity Sets = Quantity Sets per Entiteit
 - 6.1.5.5 Qto_CoveringBaseQuantities

In this example we use the Revit category 'Ceiling'. According to BuildingSmart, a Ceiling belongs to IfcCovering. However, just the entity is not specific enough; a Type Enumeration is needed to determine this is actually a ceiling.

IfcCoveringTypeEnum: CEILING = Plafondafwerking
 FLOORING = Vloerafwerking
 ...

Every IfcCovering has access to... >> Pset_CoveringCommon
 ...and additionally...

IfcCovering.CEILING has access to... >> Pset_CoveringCeiling
 IfcCovering.FLOORING has access to... >> Pset_CoveringFlooring

The choice of IFC-version, Entity and Type great influences the possible properties an element can natively hold. Please check if your Export Mapping Table is set up in a way that it meets the project requirements.

IFC TIMELINE

To showcase the development of IFC throughout the years, we put together a timeline. The most recent version is IFC4 ADD2, published in July 2016.

BuildingSMART is currently developing IFC5. It is not yet known when this IFC version goes live. This version's main focus is on infrastructure.

It is interesting to note that the most used IFC version is still IFC2x3 TC1. This version is released in september of 2007, over 12 years ago, and is no longer supported by BuildingSMART.

Release IFC2x3

- First real online documented IFC version
- Still the most used IFC version, however...
- ...it is no longer supported by BuildingSMART

Release IFC4

- Huge improvement in online documentation
- Improved geometry export
- Additional Entities, Enums and Psets
- Improvements in 4D / 5D Psets
- Standardisation for Qto (quantity take offs)

Release IFC5

- Currently in 'early development'
- Main focus on Infrastructure
- New Psets en Enums