

Project

Statsbygg TEMPLATE: SIMBA 2.0

Actor

Structural Engineer (RIB)

Discipline Model

Structural Engineer (RIB)

Project Phase(s)

B3.1 : Outline conceptual design (B3.1 Skisseprosjekt)

B3.2 : Full conceptual design (B3.2 Forprosjekt)

B4.1 : Coordinated design (B4.1 Detaljprosjekt)

B5.1 : Handover (B5.1 Ferdigstillelse)

Date: 27.01.2021
Created by: Frode Mohus

Project Description: [EN] SIMBA 2.0 contains new requirement set templates, independent from earlier versions. It is exclusively for use with IFC4 models. It is released 2021-01-29.

[NO] SIMBA 2.0 inneholder nye kravsettmaler, uavhengig av tidligere versjoner. Den er kun for bruk med IFC4-modeller. Det lanseres 2021-01-29.

Project Phases and Use Cases

The following tables show the required specific applications and their use in the project phases.

Additional information on the selected phases

Code	Project Phase	Description
B3.1	Outline conceptual design (B3.1 Skisseprosjekt)	According to Statsbygg's Project Model 2016. B = Beslutningsport = Decision Gate.
B3.2	Full conceptual design (B3.2 Forprosjekt)	According to Statsbygg's Project Model 2016. B = Beslutningsport = Decision Gate.
B4.1	Coordinated design (B4.1 Detaljprosjekt)	According to Statsbygg's Project Model 2016. B = Beslutningsport = Decision Gate.
B5.1	Handover (B5.1 Ferdigstillelse)	According to Statsbygg's Project Model 2016. B = Beslutningsport = Decision Gate.

Detailed Information Requirements

The following sections contain a tabular summary of all geometrical and alphanumeric levels of detail.

<p>Project</p> <p>IfcProject indicates the undertaking of some design, engineering, construction, or maintenance activities leading towards a product. The project establishes the context for information to be exchanged or shared, and it may represent a construction project but does not have to. The IfcProject's main purpose in an exchange structure is to provide the root instance and the context for all other information items included.</p> <p>One and only one project object (IfcProject) shall be present for each project.</p> <p>NS3451:</p> <p>IFC 4 Add2: IfcProject</p>	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
<p>Name</p> <p>IFC 4 Add2 : IfcRoot.Name</p>	X	X	X	X	
<p>Longname</p> <p>IFC 4 Add2 : IfcContext.LongName</p>	X	X	X	X	
<p>Georeference</p> <p>IFC 4 Add2 : [Project Global Positioning]</p> <p>EPSG compound code is a unique code indicating the combination of geodetic datum (typically ETRS89 / EUREF89), projection (typically NTM zone 10, UTM Zone 32N etc.), and height datum (typically NN2000).</p>	X	X	X	X	

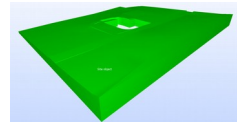
Site

A site is a defined area of land, possibly covered with water, on which the project construction is to be completed. A site may be used to erect, retrofit or turn down building(s), or for other construction related developments.

One and only one site object (IfcSite) shall be present for each project.

NS3451:

IFC 4 Add2: IfcSite



Level of Geometry (LOG)

B3.1

B3.2

B4.1

B5.1

No requirements required.

Level of Information (LOI)

B3.1

B3.2

B4.1

B5.1

Name

IFC 4 Add2 : IfcRoot.Name

The official name of the property [no: Eiendomsnavn]

X

X

Longname

IFC 4 Add2 : IfcSpatialElement.LongName

X

X

LandTitleNumber

IFC 4 Add2 : IfcSite.LandTitleNumber

The site shall contain the official ID of the Cadastre [no:Matrikkel] - the Cadastral Number.

X

X

X

X

A complete Cadastral number [no:Matrikkelnummer] in Norway consists of the following components:

knr – Municipality number [no:Kommunennummer] gnr – Estate Registration Number [no:gårdsnummer] bnr – Title Number [no:bruksnummer] fnr – Leasehold Number [no:festennummer] snr – Section Number [no:seksjonsnummer]

In the IfcSite.LandTitleNumber the Cadastral number shall be expressed according to the following naming scheme:

knr gnr bnr fnr snr

The format shall always follow this layout:

- The knr always has four digits, possibly with leading zeros
- The gnr, bnr, fnr and snr must not have leading zeros - All fields must be included - Fields not in active use shall be defined by a zero (0).
- knr is separated from gnr, bnr, and fnr fields by a hyphen.
- gnr, bnr, snr, and fnr fields are separated by a slash .
- Do not use characters other than spaces and numbers

Examples:

0904-200/2430/0/14 (fnr is unused)

0904-200/2430/1/0 (snr is unused)

0904-200/2430/0/0 (fnr and snr are both unused)

Building A building represents a structure that provides shelter for its occupants or contents and stands in one place. The building is also used to provide a basic element within the spatial structure hierarchy for the components of a building project (together with site, storey, and space). NS3451: IFC 4 Add2: IfcBuilding	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name A descriptive name of the building volume represented by the building object, e.g. "Block D".	X	X	X	X	
Longname IFC 4 Add2 : IfcSpatialElement.LongName Statsbygg's internal "Byggnummer".	X	X	X	X	
<i>Pset_BuildingCommon</i> Properties common to the definition of all instances of IfcBuilding. Please note that several building attributes are handled directly at the IfcBuilding instance, the building number (or short name) by IfcBuilding.Name, the building name (or long name) by IfcBuilding.LongName, and the description (or comments) by IfcBuilding.Description. Actual building quantities, like building perimeter, building area and building volume are provided by IfcElementQuantity, and the building classification according to national building code by IfcClassificationReference.					
BuildingID IFC 4 Add2 : Pset_BuildingCommon.BuildingID Building Number - In Norway the Building number is assigned by the municipality in which the building is located. Each municipality has assigned a numbering range that can be used for the registration of new buildings. Example: 10469228			X	X	

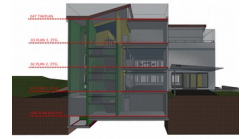
Building Storey

The building storey has an elevation and typically represents a (nearly) horizontal aggregation of spaces that are vertically bound.

One or more storey objects (IfcBuildingStorey) shall be present for each building, reflecting the number of floor levels in the building, including mezzanine floors and similar structures that cover only parts of a full storey.

NS3451:

IFC 4 Add2: IfcBuildingStorey



Level of Geometry (LOG)

B3.1

B3.2

B4.1

B5.1

No requirements required.

Level of Information (LOI)

B3.1

B3.2

B4.1

B5.1

Name

IFC 4 Add2 : IfcRoot.Name

The storey names shall be an integer starting from "0" or "1" at a defined base level storey (typically the main entrance storey), incremented by one for each storey above the base level storey, and reduced by one below the base level storey.

X

X

X

X

Longname

IFC 4 Add2 : IfcSpatialElement.LongName

Storey name according to Statsbygg document "PA0602" type naming scheme (if so required in the project).

X

X

X

X

Pset_BuildingStoreyCommon

Properties common to the definition of all instances of IfcBuildingStorey. Please note that several building attributes are handled directly at the IfcBuildingStorey instance, the building storey number (or short name) by IfcBuildingStorey.Name, the building storey name (or long name) by IfcBuildingStorey.LongName, and the description (or comments) by IfcBuildingStorey.Description. Actual building storey quantities, like building storey perimeter, building storey area and building storey volume are provided by IfcElementQuantity, and the building storey classification according to national building code by IfcClassificationReference.

EntranceLevel

IFC 4 Add2 : Pset_BuildingStoreyCommon.EntranceLevel

X

X

X

AboveGround

IFC 4 Add2 : Pset_BuildingStoreyCommon.AboveGround

X

X

X

X

Geographic Element An IfcGeographicElement is a generalization of all elements within a geographical landscape. It includes occurrences of typical geographical elements, often referred to as features, such as trees or terrain. Common type information behind several occurrences of IfcGeographicElement is provided by the IfcGeographicElementType. NS3451: IFC 4 Add2: IfcGeographicElement	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	

Building Element Proxy NB! Only to be used if the element cannot be expressed by a specific object class in IFC. The IfcBuildingElementProxy is a proxy definition that provides the same functionality as subtypes of IfcBuildingElement, but without having a predefined meaning of the special type of building element, it represents. Proxies can also be used as spatial place holders or provisions, that are later replaced by special types of elements. NS3451: IFC 4 Add2: IfcBuildingElementProxy	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description	X	X	X	X	
NOSSB_Process					
Duplicate object IFC 4 Add2 : NOSSB_Process.IsDuplicate Communicates that another discipline is responsible for information of the element. The duplicate object is represented in this model for coordination or model technical purpose. The attribute specifies the code for the responsible discipline e.g. RIB, ARK, RIV, RIE etc.		X	X	X	
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has acoustic requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasAcousticRequirements		X	X	X	
Has controls connection IFC 4 Add2 : NOSSB_ReqTriggers.HasControlsConnection		X	X	X	
Has data communication connection IFC 4 Add2 : NOSSB_ReqTriggers.HasDataCommunication		X	X	X	
Has electrical connection IFC 4 Add2 : NOSSB_ReqTriggers.HasElectricalConnection		X	X	X	
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements		X	X	X	

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Has thermal requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasThermalRequirements		X	X	X	
<i>NOSSB_Thermal</i>					
Thermal transmittance requirement IFC 4 Add2 : NOSSB_Thermal.ThermalTransmittanceReq		X	X	X	
<i>Pset_BuildingElementProxyCommon</i> Properties common to the definition of all instances of IfcBuildingElementProxy.					
IsExternal IFC 4 Add2 : Pset_BuildingElementProxyCommon.IsExternal		X	X	X	
ThermalTransmittance IFC 4 Add2 : Pset_BuildingElementProxyCommon.ThermalTransmittance		X	X	X	
LoadBearing IFC 4 Add2 : Pset_BuildingElementProxyCommon.LoadBearing	X	X	X	X	
FireRating IFC 4 Add2 : Pset_BuildingElementProxyCommon.FireRating		X	X	X	
<i>Pset_ManufacturerTypeInfoInformation</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

Plate An IfcPlate is a planar and often flat part with constant thickness. A plate may carry loads between or beyond points of support, or provide stiffening. The location of the plate (being horizontal, vertical or sloped) is not relevant to its definition (in contrary to IfcWall and IfcSlab (as floor slab)). NS3451: IFC 4 Add2: IfcPlate	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types of planar elements an IfcPlate or IfcPlateType object can fulfill. Enumerations; CURTAIN_PANEL: A planar element within a curtain wall, often consisting of a frame with fixed glazing. SHEET: A planar, flat and thin element, comes usually as metal sheet, and is often used as an additional part within an assembly. USERDEFINED: User-defined linear element. NOTDEFINED: Undefined linear element.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	
<i>Pset_PlateCommon</i> Properties common to the definition of all occurrences of IfcPlate.					
IsExternal IFC 4 Add2 : Pset_PlateCommon.IsExternal			X	X	
LoadBearing IFC 4 Add2 : Pset_PlateCommon.LoadBearing			X	X	
FireRating IFC 4 Add2 : Pset_PlateCommon.FireRating			X	X	

Ramp

A ramp is a vertical passageway which provides a human circulation link between one floor level and another floor level at a different elevation. It may include a landing as an intermediate floor slab. A ramp normally does not include steps.

NS3451:

IFC 4 Add2: IfcRamp



Level of Geometry (LOG)

B3.1

B3.2

B4.1

B5.1

No requirements required.

Level of Information (LOI)

B3.1

B3.2

B4.1

B5.1

Name

IFC 4 Add2 : IfcRoot.Name

Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01

X

X

X

X

Description

IFC 4 Add2 : IfcRoot.Description

X

X

X

Predefined type

IFC 4 Add2 : [ProductConceptTemplate]

[Definition from IFC]: This enumeration defines the basic configuration of the ramp type in terms of the number and shape of ramp flights, as shown in Figure 190. The type also distinguished turns by landings. In addition the subdivision of the straight and changing direction ramps is included. The ramp configurations are given for ramps without and with one and two landings.

Ramps which are subdivided into more than two landings, or ramps with non-regular shapes are to be defined with type being USERDEFINED or NOTDEFINED.

Enumerations;

STRAIGHT_RUN_RAMP: A ramp - which is a sloping floor, walk, or roadway - connecting two levels. The straight ramp consists of one straight flight without turns or winders.

TWO_STRAIGHT_RUN_RAMP: A straight ramp consisting of two straight flights without turns but with one landing.

QUARTER_TURN_RAMP: A ramp making a 90° turn, consisting of two straight flights connected by a quarterspace landing. The direction of the turn is determined by the walking line.

TWO_QUARTER_TURN_RAMP: A ramp making a 180° turn, consisting of three straight flights connected by two quarterspace landings. The direction of the turn is determined by the walking line.

HALF_TURN_RAMP: A ramp making a 180° turn, consisting of two straight flights connected by a halfspace landing. The orientation of the turn is determined by the walking line.

SPIRAL_RAMP: A ramp constructed around a circular or elliptical well without newels and landings.

USERDEFINED: Free form ramp (user defined operation type).

NOTDEFINED:

X

X

X

X

NOSSB_Process

Designed status

IFC 4 Add2 : NOSSB_Process.DesignedStatus

X

X

X

X

Constructed status

IFC 4 Add2 : NOSSB_Process.ConstructedStatus

X

NOSSB_Reference

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
<i>NOSSB_ReqTriggers</i>					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements		X	X	X	
<i>Pset_RampCommon</i> Properties common to the definition of all occurrences of IfcRamp.					
RequiredHeadroom IFC 4 Add2 : Pset_RampCommon.RequiredHeadroom		X	X	X	
IsExternal IFC 4 Add2 : Pset_RampCommon.IsExternal	X	X	X	X	
FireRating IFC 4 Add2 : Pset_RampCommon.FireRating		X	X	X	
FireExit IFC 4 Add2 : Pset_RampCommon.FireExit		X	X	X	
HandicapAccessible IFC 4 Add2 : Pset_RampCommon.HandicapAccessible	X	X	X	X	
LoadBearing IFC 4 Add2 : Pset_RampCommon.LoadBearing	X	X	X	X	
<i>Pset_ManufacturerTypeInfoInformation</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

Ramp Flight A ramp comprises a single inclined segment, or several inclined segments that are connected by a horizontal segment, referred to as a landing. A ramp flight is the single inclined segment and part of the ramp construction. In case of single flight ramps, the ramp flight and the ramp are identical. NS3451: IFC 4 Add2: IfcRampFlight	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types an IfcRampFlight or IfcRampFlightType object can fulfill. Enumerations; STRAIGHT: A ramp flight with a straight walking line. SPIRAL: A ramp flight with a circular or elliptic walking line. USERDEFINED: User-defined ramp flight. NOTDEFINED: Undefined ramp flight.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements		X	X	X	
Pset_RampFlightCommon Properties common to the definition of all occurrences of IfcRampFlight.					
Headroom IFC 4 Add2 : Pset_RampFlightCommon.Headroom		X	X	X	

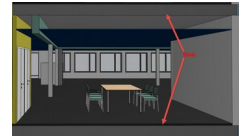
Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
<p><i>Pset_ManufacturerTypeInfoInformation</i></p> <p>Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.</p>					
<p>GlobalTradeItemNumber</p> <p>IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber</p>				X	

Slab

A slab is a component of the construction that normally encloses a space vertically. The slab may provide the lower support (floor) or upper construction (roof slab) in any space in a building.

NS3451:

IFC 4 Add2: IfcSlab



Level of Geometry (LOG)

B3.1

B3.2

B4.1

B5.1

No requirements required.

Level of Information (LOI)

B3.1

B3.2

B4.1

B5.1

Name

IFC 4 Add2 : IfcRoot.Name

Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01

X

X

X

X

Description

IFC 4 Add2 : IfcRoot.Description

X

X

X

Predefined type

IFC 4 Add2 : [ProductConceptTemplate]

[Definition from IFC]: This enumeration defines the available predefined types of slabs that can further specify an IfcSlab or IfcSlabType.

X

X

X

X

Enumerations;

FLOOR: The slab is used to represent a floor slab.

ROOF: The slab is used to represent a roof slab (either flat or sloped).

LANDING: The slab is used to represent a landing within a stair or ramp.

BASESLAB: The slab is used to represent a floor slab against the ground (and thereby being a part of the foundation). Another name is mat foundation.

USERDEFINED:

NOTDEFINED:

NOSSB_Process

Designed status

IFC 4 Add2 : NOSSB_Process.DesignedStatus

X

X

X

X

Constructed status

IFC 4 Add2 : NOSSB_Process.ConstructedStatus

X

NOSSB_Reference

Aggregated Code (RefString)

IFC 4 Add2 : NOSSB_Reference.RefString

Complete aggregated code on appointing partys preferred format.

X

X

Pset_ManufacturerTypeInfo

Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider.

HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.

GlobalTradeItemNumber

IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber

X

Pset_SlabCommon

Properties common to the definition of all occurrences of IfcSlab. Note: Properties for PitchAngle added in IFC 2x3

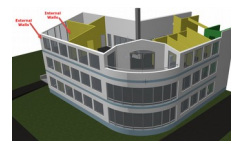
Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
AcousticRating IFC 4 Add2 : Pset_SlabCommon.AcousticRating			X	X	
IsExternal IFC 4 Add2 : Pset_SlabCommon.IsExternal	X	X	X	X	
LoadBearing IFC 4 Add2 : Pset_SlabCommon.LoadBearing	X	X	X	X	
PitchAngle IFC 4 Add2 : Pset_SlabCommon.PitchAngle			X	X	

Wall

The wall represents a vertical construction that bounds or subdivides spaces. Wall are usually vertical, or nearly vertical, planar elements, often designed to bear structural loads. A wall is however not required to be load bearing.

NS3451:

IFC 4 Add2: IfcWall



Level of Geometry (LOG)

B3.1

B3.2

B4.1

B5.1

No requirements required.

Level of Information (LOI)

B3.1

B3.2

B4.1

B5.1

Name

IFC 4 Add2 : IfcRoot.Name

Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01

X

X

X

X

Description

IFC 4 Add2 : IfcRoot.Description

X

X

X

Predefined type

IFC 4 Add2 : [ProductConceptTemplate]

[Definition from IFC]: This enumeration defines the different types of walls that can further specify an IfcWall or IfcWallType.

X

X

X

X

Enumerations;

MOVABLE: A movable wall that is either movable, such as folding wall or a sliding wall, or can be easily removed as a removable partitioning or mounting wall. Movable walls do normally not define space boundaries and often belong to the furnishing system.

PARAPET: A wall-like barrier to protect human occupants from falling, or to prevent the spread of fires. Often designed at the edge of balconies, terraces or roofs.

PARTITIONING: A wall designed to partition spaces that often has a light-weight, sandwich-like construction (e.g. using gypsum board). Partitioning walls are normally non load bearing.

PLUMBINGWALL: A pier, or enclosure, or encasement, normally used to enclose plumbing in sanitary rooms. Such walls often do not extent to the ceiling.

SHEAR: A wall designed to withstand shear loads. Such shear walls are often designed having a non-rectangular cross section along the wall path. Also called retaining walls or supporting walls they are used to protect against soil layers behind.

SOLIDWALL: A massive wall construction for the wall core being the single layer or having multiple layers attached. Such walls are often masonry or concrete walls (both cast in-situ or precast) that are load bearing and fire protecting.

STANDARD: A standard wall, extruded vertically with a constant thickness along the wall path.

POLYGONAL: A polygonal wall, extruded vertically, where the wall thickness varies along the wall path.

IFC4 DEPRECATION The enumerator POLYGONAL is deprecated and shall no longer be used.

ELEMENTEDWALL: A stud wall framed with studs and faced with sheetings, sidings, wallboard, or plasterwork.

USERDEFINED: User-defined wall element.

NOTDEFINED: Undefined wall element.

NOSSB_Process

Designed status

IFC 4 Add2 : NOSSB_Process.DesignedStatus

X

X

X

X

Constructed status

IFC 4 Add2 : NOSSB_Process.ConstructedStatus

X

NOSSB_Reference

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
<i>Pset_ManufacturerTypeInfoInformation</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	
<i>Pset_WallCommon</i> Properties common to the definition of all occurrences of IfcWall and IfcWallStandardCase.					
IsExternal IFC 4 Add2 : Pset_WallCommon.IsExternal	X	X	X	X	
LoadBearing IFC 4 Add2 : Pset_WallCommon.LoadBearing	X	X	X	X	

Pile A pile is a slender timber, concrete, or steel structural element, driven, jetted, or otherwise embedded on end in the ground for the purpose of supporting a load. A pile is also characterized as deep foundation, where the loads are transferred to deeper subsurface layers. NS3451: IFC 4 Add2: IfcPile	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: Enumeration defining the pile type. Enumerations: BORED: A bore pile. DRIVEN: A rammed, vibrated, or otherwise driven pile. JETGROUTING: An injected pile-like construction. COHESION: A cohesion pile. FRICTION: A friction pile. SUPPORT: A support pile. USERDEFINED: The type of pile function is user defined. NOTDEFINED: The type of pile function is not defined.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	
Pset_PileCommon Properties common to the definition of all occurrences of IfcPile.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
LoadBearing IFC 4 Add2 : Pset_PileCommon.LoadBearing	X	X	X	X	

Footing A footing is a part of the foundation of a structure that spreads and transmits the load to the soil. A footing is also characterized as shallow foundation, where the loads are transferred to the ground near the surface. NS3451: IFC 4 Add2: IfcFooting	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: Enumeration defining the generic footing type. Enumerations; CAISSON_FOUNDATION: A foundation construction type used in underwater construction. FOOTING_BEAM: Footing elements that are in bending and are supported clear of the ground. They will normally span between piers, piles or pile caps. They are distinguished from beams in the building superstructure since they will normally require a lower grade of finish. They are distinguished from STRIP_FOOTING since they are clear of the ground surface and hence require support to the lower face while the concrete is curing. PAD_FOOTING: An element that transfers the load of a single column (possibly two) to the ground. PILE_CAP: An element that transfers the load from a column or group of columns to a pier or pile or group of piers or piles. STRIP_FOOTING: A linear element that transfers loads into the ground from either a continuous element, such as a wall, or from a series of elements, such as columns. USERDEFINED: Special types of footings which meet specific local requirements. NOTDEFINED: The type of footing is not defined.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	
<i>Pset_FootingCommon</i> Properties common to the definition of all occurrences of IfcFooting.					
LoadBearing IFC 4 Add2 : Pset_FootingCommon.LoadBearing	X	X	X	X	

Member An IfcMember is a structural member designed to carry loads between or beyond points of support. It is not required to be load bearing. The orientation of the member (being horizontal, vertical or sloped) is not relevant to its definition (in contrary to IfcBeam and IfcColumn). An IfcMember represents a linear structural element from an architectural or structural modeling point of view and shall be used if it cannot be expressed more specifically as either an IfcBeam or an IfcColumn. NS3451: IFC 4 Add2: IfcMember	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types of linear elements an IfcMember or IfcMemberType object can fulfill. Enumerations; BRACE: A linear element (usually sloped) often used for bracing of a girder or truss. CHORD: Upper or lower longitudinal member of a truss, used horizontally or sloped. COLLAR: A linear element (usually used horizontally) within a roof structure to connect rafters and posts. MEMBER: A linear element within a girder or truss with no further meaning. MULLION: A linear element within a curtain wall system to connect two (or more) panels. PLATE: A linear continuous horizontal element in wall framing, such as a head piece or a sole plate. POST: A linear member (usually used vertically) within a roof structure to support purlins. PURLIN: A linear element (usually used horizontally) within a roof structure to support rafters. RAFTER: A linear elements used to support roof slabs or roof covering, usually used with slope. STRINGER: A linear element used to support stair or ramp flights, usually used with slope. STRUT: A linear element often used within a girder or truss. STUD: Vertical element in wall framing. USERDEFINED: User-defined linear element. NOTDEFINED: Undefined linear element.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	

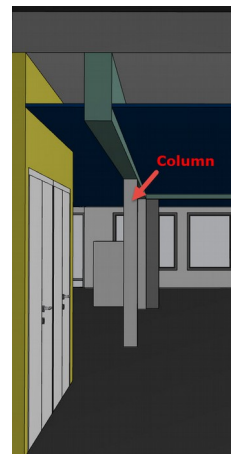
Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
<i>Pset_MemberCommon</i> Properties common to the definition of all occurrences of IfcMember.					
IsExternal IFC 4 Add2 : Pset_MemberCommon.IsExternal		X	X	X	
LoadBearing IFC 4 Add2 : Pset_MemberCommon.LoadBearing	X	X	X	X	
<i>Pset_ManufacturerTypeInfoInformation</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

Column

IfcColumn is a vertical structural member which often is aligned with a structural grid intersection. It represents a vertical, or nearly vertical, structural member that transmits, through compression, the weight of the structure above to other structural elements below. It represents such a member from an architectural point of view. It is not required to be load bearing.

NS3451:

IFC 4 Add2: IfcColumn



Level of Geometry (LOG)

B3.1

B3.2

B4.1

B5.1

No requirements required.

Level of Information (LOI)

B3.1

B3.2

B4.1

B5.1

Name

IFC 4 Add2 : IfcRoot.Name
Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01

X

X

X

X

Description

IFC 4 Add2 : IfcRoot.Description

X

X

X

Predefined type

IFC 4 Add2 : [ProductConceptTemplate]
[Definition from IFC]: This enumeration defines the different predefined types of columns that can further specify an IfcColumn or IfcColumnType.

X

X

X

X

Enumerations;

COLUMN: A standard member usually vertical and requiring resistance to vertical forces by compression but also sometimes to lateral forces.

PILASTER: A column element embedded within a wall that can be required to be load bearing but may also only be used for decorative purposes.

USERDEFINED: User-defined linear element.

NOTDEFINED: Undefined linear element.

NOSSB_Process

Designed status

IFC 4 Add2 : NOSSB_Process.DesignedStatus

X

X

X

X

Constructed status

IFC 4 Add2 : NOSSB_Process.ConstructedStatus

X

NOSSB_Reference

Aggregated Code (RefString)

IFC 4 Add2 : NOSSB_Reference.RefString
Complete aggregated code on appointing partys preferred format.

X

X

Pset_ColumnCommon

Properties common to the definition of all occurrence and type objects of column.

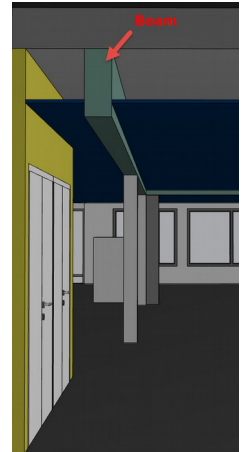
Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
IsExternal IFC 4 Add2 : Pset_ColumnCommon.IsExternal		X	X	X	
LoadBearing IFC 4 Add2 : Pset_ColumnCommon.LoadBearing	X	X	X	X	
<i>Pset_ManufacturerTypeInfo</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

Beam

An IfcBeam is a horizontal, or nearly horizontal, structural member that is capable of withstanding load primarily by resisting bending. It represents such a member from an architectural point of view. It is not required to be load bearing.

NS3451:

IFC 4 Add2: IfcBeam



Level of Geometry (LOG)

No requirements required.

B3.1

B3.2

B4.1

B5.1

Level of Information (LOI)

Name

IFC 4 Add2 : IfcRoot.Name
Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01

Description

IFC 4 Add2 : IfcRoot.Description

Predefined type

IFC 4 Add2 : [ProductConceptTemplate]
[Definition from IFC]: This enumeration defines the different predefined types of beams that can further specify an IfcBeam or IfcBeamType.

Enumerations;
BEAM: A standard beam usually used horizontally.
JOIST: A beam used to support a floor or ceiling.
HOLLOWCORE: A wide often prestressed beam with a hollow-core profile that usually serves as a slab component.
LINTEL: A beam or horizontal piece of material over an opening (e.g. door, window).
SPANDREL: A tall beam placed on the facade of a building. One tall side is usually finished to provide the exterior of the building. Can be used to support joists or slab elements on its interior side.
T_BEAM: A beam that forms part of a slab construction and acts together with the slab which it carries. Such beams are often of T-shape (therefore the English name), but may have other shapes as well, e.g. an L-Shape or an Inverted-T-Shape.
USERDEFINED: User-defined linear beam element.
NOTDEFINED: Undefined linear beam element.

NOSSB_Process

Designed status

IFC 4 Add2 : NOSSB_Process.DesignedStatus

Constructed status

IFC 4 Add2 : NOSSB_Process.ConstructedStatus

NOSSB_Reference

B3.1

B3.2

B4.1

B5.1

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

X

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
<i>Pset_ManufacturerTypeInfo</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	
<i>Pset_BeamCommon</i> Properties common to the definition of all occurrence and type objects of beam.					
IsExternal IFC 4 Add2 : Pset_BeamCommon.IsExternal		X	X	X	
LoadBearing IFC 4 Add2 : Pset_BeamCommon.LoadBearing	X	X	X	X	

Anchor Bolt A special bolt which is anchored into concrete, stone, or brickwork. NS3451: IFC 4 Add2: IfcMechanicalFastener ANCHORBOLT	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions a sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
<i>NOSSB_Process</i>					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
<i>NOSSB_Reference</i>					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing party's preferred format.			X	X	
<i>NOSSB_ReqTriggers</i>					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements			X	X	
<i>Pset_ManufacturerTypeInfo</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

Bolt A threaded cylindrical rod that engages with a similarly threaded hole in a nut or any other part to form a fastener. The mechanical fastener often also includes one or more washers and one or more nuts. NS3451: IFC 4 Add2: IfcMechanicalFastener BOLT	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements			X	X	
Pset_ManufacturerTypeInfoInformation Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

Fastener Representations of fixing parts which are used as fasteners to connect or join elements with other elements. Excluded are mechanical fasteners which are modeled by a separate entity (IfcMechanicalFastener). NS3451: IFC 4 Add2: IfcFastener	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types of fasteners, except for mechanical fasteners. Enumerations; GLUE: A fastening connection where glue is used to join together elements. MORTAR: A composition of mineralic or other materials used to fill jointing gaps and possibly fulfilling a load carrying role. WELD: A weld seam between parts of metallic material or other suitable materials. USERDEFINED: User-defined fastener. NOTDEFINED: Undefined fastener.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

MechanicalFastener A mechanical fasteners connecting building elements mechanically. A single instance of this class may represent one or many of actual mechanical fasteners, for example an array of bolts or a row of nails. NS3451: IFC 4 Add2: IfcMechanicalFastener	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types of mechanical fasteners. Enumerations; ANCHORBOLT: A special bolt which is anchored into concrete, stone, or brickwork. BOLT: A threaded cylindrical rod that engages with a similarly threaded hole in a nut or any other part to form a fastener. The mechanical fastener often also includes one or more washers and one or more nuts. DOWEL: A cylindrical rod that is driven into holes of the connected pieces. NAIL: A thin pointed piece of metal that is hammered into materials as a fastener. NAILPLATE: A piece of sheet metal with punched points that overlaps the connected pieces and is pressed into their material. RIVET: A fastening part having a head at one end and the other end being hammered flat after being passed through holes in the pieces that are fastened together. SCREW: A fastener with a tapered threaded shank and a slotted head. SHEARCONNECTOR: A ring connector that is accepted by ring keyways in the connected pieces; or a toothed circular or square connector that is pressed into the connected pieces. STAPLE: A doubly pointed piece of metal that is hammered into materials as a fastener. STUDSHEARCONNECTOR: Stud shear connectors are cylindrical fastening parts with a head on one side. On the other side they are welded on steel members for the use in composite steel and concrete structures. USERDEFINED: User-defined mechanical fastener. NOTDEFINED: Undefined mechanical fastener.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing party's preferred format.			X	X	
NOSSB_ReqTriggers					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements			X	X	
<i>Pset_ManufacturerTypeInfoInformation</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

ReinforcingBar A reinforcing bar is usually made of steel with manufactured deformations in the surface, and used in concrete and masonry construction to provide additional strength. A single instance of this class may represent one or many of actual rebars, for example a row of rebars. NS3451: IFC 4 Add2: IfcReinforcingBar	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: Enumeration defining standard types for the role, purpose or usage of the bar, i.e. the kind of loads and stresses they are intended to carry. Enumerations; ANCHORING: Anchoring reinforcement. EDGE: Edge reinforcement. LIGATURE: The reinforcing bar is a ligature (link, stirrup). MAIN: The reinforcing bar is a main bar. PUNCHING: Punching reinforcement. RING: Ring reinforcement. SHEAR: The reinforcing bar is a shear bar. STUD: The reinforcing bar is a stud. USERDEFINED: The type of reinforcement is user defined. NOTDEFINED: The type of reinforcement is not defined.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

ReinforcingElement A reinforcing element represents bars, wires, strands, meshes, tendons, and other components embedded in concrete in such a manner that the reinforcement and the concrete act together in resisting forces. NS3451: IFC 4 Add2: IfcReinforcingElement	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description NOSSB_Process			X	X	
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus NOSSB_Reference				X	
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

ReinforcingMesh A reinforcing mesh is a series of longitudinal and transverse wires or bars of various gauges, arranged at right angles to each other and welded at all points of intersection; usually used for concrete slab reinforcement. It is also known as welded wire fabric. In scope are plane meshes as well as bent meshes. NS3451: IFC 4 Add2: IfcReinforcingMesh	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: Enumeration defining the reinforcing mesh type. Enumerations; USERDEFINED: The type of mesh is user defined. NOTDEFINED: The type of mesh is not defined.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

Chimney Chimneys are typically vertical, or as near as vertical, parts of the construction of a building and part of the building fabric. Often constructed by pre-cast or insitu concrete, today seldom by bricks. NS3451: IFC 4 Add2: IfcChimney	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements		X	X	X	
Pset_ChimneyCommon Properties common to the definition of all occurrence and type objects of chimneys.					
IsExternal IFC 4 Add2 : Pset_ChimneyCommon.IsExternal		X	X	X	
LoadBearing IFC 4 Add2 : Pset_ChimneyCommon.LoadBearing	X	X	X	X	
FireRating IFC 4 Add2 : Pset_ChimneyCommon.FireRating		X	X	X	
Pset_ManufacturerTypeInfoInformation Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

Stair Flight A stair flight is an assembly of building components in a single "run" of stair steps (not interrupted by a landing). The stair steps and any stringers are included in the stair flight. A winder is also regarded a part of a stair flight. NS3451: IFC 4 Add2: IfcStairFlight	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types of stair flights that can further specify an IfcStairFlight or IfcStairFlightType. Enumerations; STRAIGHT: A stair flight with a straight walking line. WINDER: A stair flight with a walking line including straight and curved sections. SPIRAL: A stair flight with a circular or elliptic walking line. CURVED: A stair flight with a curved walking line. FREEFORM: A stair flight with a free form walking line (and outer boundaries). USERDEFINED: User-defined stair flight. NOTDEFINED: Undefined stair flight.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_StairFlightCommon Properties common to the definition of all occurrences of IfcStairFlight.					
Headroom IFC 4 Add2 : Pset_StairFlightCommon.Headroom		X	X	X	
Pset_ManufacturerTypeInfoInformation Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

Covering A covering is an element which covers some part of another element and is fully dependent on that other element. The IfcCovering defines the occurrence of a covering type, that (if given) is expressed by the IfcCoveringType. NS3451: IFC 4 Add2: IfcCovering	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the range of different types of covering that can further specify an IfcCovering or an IfcCoveringType. Enumerations; CEILING: The covering is used to represent a ceiling. FLOORING: The covering is used to represent a flooring. CLADDING: The covering is used to represent a cladding. ROOFING: The covering is used to represent a roof covering. MOLDING: The covering is used to represent a molding being a strip of material to cover the transition of surfaces (often between wall cladding and ceiling). SKIRTINGBOARD: The covering is used to represent a skirting board being a strip of material to cover the transition between the wall cladding and the flooring. INSULATION: The covering is used to insulate an element for thermal or acoustic purposes. MEMBRANE: An impervious layer that could be used for e.g. roof covering (below tiling - that may be known as sarking etc.) or as a damp proof course membrane. SLEEVEING: The covering is used to isolate a distribution element from a space in which it is contained. WRAPPING: The covering is used for wrapping particularly of distribution elements using tape. USERDEFINED: User defined type of covering. NOTDEFINED: Undefined type of covering.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_CoveringCommon Properties common to the definition of all occurrence and type objects of covering					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
FlammabilityRating IFC 4 Add2 : Pset_CoveringCommon.FlammabilityRating			X	X	
IsExternal IFC 4 Add2 : Pset_CoveringCommon.IsExternal		X	X	X	
<i>Pset_ManufacturerTypeInfoInformation</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

Covering Insulation The covering is used to insulate an element for thermal or acoustic purposes. NS3451: IFC 4 Add2: IfcCovering INSULATION	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
<i>NOSSB_Process</i>					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
<i>NOSSB_Reference</i>					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
<i>Pset_CoveringCommon</i> Properties common to the definition of all occurrence and type objects of covering					
IsExternal IFC 4 Add2 : Pset_CoveringCommon.IsExternal		X	X	X	
<i>Pset_ManufacturerTypeInfo</i> Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

Discrete Accessory <p>ANCHORPLATE: An accessory consisting of a steel plate, shear stud connectors or welded-on rebar which is embedded into the surface of a concrete element so that other elements can be welded or bolted onto it later.</p> <p>BRACKET: An L-shaped or similarly shaped accessory attached in a corner between elements to hold them together or to carry a secondary element.</p> <p>SHOE: A column shoe or a beam shoe (beam hanger) used to support or secure an element.</p> <p>NS3451:</p> <p>IFC 4 Add2: IfcDiscreteAccessory</p>	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the different types of discrete accessories. Enumerations; ANCHORPLATE: An accessory consisting of a steel plate, shear stud connectors or welded-on rebar which is embedded into the surface of a concrete element so that other elements can be welded or bolted onto it later. BRACKET: An L-shaped or similarly shaped accessory attached in a corner between elements to hold them together or to carry a secondary element. SHOE: A column shoe or a beam shoe (beam hanger) used to support or secure an element. USERDEFINED: User-defined accessory. NOTDEFINED: Undefined accessory.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
NOSSB_ReqTriggers					
Has fire safety requirement IFC 4 Add2 : NOSSB_ReqTriggers.HasFireRequirements			X	X	

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
<p><i>Pset_ManufacturerTypeInfoInformation</i></p> <p>Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.</p>					
<p>GlobalTradelItemNumber</p> <p>IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradelItemNumber</p>				X	

OpeningElement The opening element stands for opening, recess or chase, all reflecting voids. It represents a void within any element that has physical manifestation. Openings can be inserted into walls, slabs, beams, columns, or other elements. NS3451: IFC 4 Add2: IfcOpeningElement	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the basic types for opening elements. Enumerations; OPENING: An opening as subtraction feature that cuts through the element it voids. It thereby creates a hole. An opening in addition have a particular meaning for either providing a void for doors or windows, or an opening to permit flow of air and passing of light. RECESS: An opening as subtraction feature that does not cut through the element it voids. It creates a niche or similar voiding pattern. USERDEFINED: User-defined opening element. NOTDEFINED: Undefined opening element.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	

Tendon A tendon is a steel element such as a wire, cable, bar, rod, or strand used to impart prestress to concrete when the element is tensioned. NS3451: IFC 4 Add2: IfcTendon	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01	X	X	X	X	
Description IFC 4 Add2 : IfcRoot.Description		X	X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: Enumeration defining the types of tendons. Enumerations; BAR: The tendon is configured as a bar. COATED: The tendon is coated. STRAND: The tendon is a strand. WIRE: The tendon is a wire. USERDEFINED: The type of tendon is user defined. NOTDEFINED: The type of tendon is not defined.	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfoInformation Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfoInformation.GlobalTradeItemNumber				X	

TendonAnchor A tendon anchor is the end connection for tendons in prestressed or posttensioned concrete. NS3451: IFC 4 Add2: IfcTendonAnchor	
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Level of Geometry (LOG)	B3.1	B3.2	B4.1	B5.1	
No requirements required.					

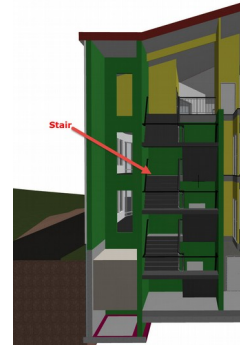
Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Name IFC 4 Add2 : IfcRoot.Name Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01			X	X	
Description IFC 4 Add2 : IfcRoot.Description			X	X	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: Enumeration defining the types of tendon anchors. Enumerations; COUPLER: The anchor is an intermediate device which connects two tendons. FIXED_END: The anchor fixes the end of a tendon. TENSIONING_END: The anchor is used or can be used to prestress the tendon. USERDEFINED: The type of tendon anchor is user defined. NOTDEFINED: The type of tendon anchor is not defined.			X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus			X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					
GlobalTradeItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradeItemNumber				X	

Stair

A stair is a vertical passageway allowing occupants to walk (step) from one floor level to another floor level at a different elevation. It may include a landing as an intermediate floor slab.

NS3451:

IFC 4 Add2: IfcStair



Level of Geometry (LOG)

No requirements required.

B3.1

B3.2

B4.1

B5.1

Level of Information (LOI)

Name

IFC 4 Add2 : IfcRoot.Name

Mandatory: Building component code (no: NS3457-8:2021 Komponentkode) + type code (three digit serial number). Example syntax AVA.001 Optionally: In case a subcode is required to differ between variations within an object type or specific object type functions an sub type code (two digit number) can be added. Example syntax AVA.001.01

X

X

X

X

Description

IFC 4 Add2 : IfcRoot.Description

X

X

X

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
Predefined type IFC 4 Add2 : [ProductConceptTemplate] [Definition from IFC]: This enumeration defines the basic configuration of the stair type in terms of the number of stair flights and the number of landings, as illustrated in Figure 192. The type also distinguished turns by windings or by landings. In addition the subdivision of the straight and changing direction stairs is included. The stair configurations are given for stairs without and with one, two or three landings. Stairs which are subdivided into more than three landings, or stairs with non-regular shapes are to be defined with type being USERDEFINED or NOTDEFINED. Enumerations; STRAIGHT_RUN_STAIR: A stair extending from one level to another without turns or winders. The stair consists of one straight flight. TWO_STRAIGHT_RUN_STAIR: A straight stair consisting of two straight flights without turns but with one landing. QUARTER_WINDING_STAIR: A stair consisting of one flight with a quarter winder, which is making a 90° turn. The direction of the turn is determined by the walking line. QUARTER_TURN_STAIR: A stair making a 90° turn, consisting of two straight flights connected by a quarterspace landing. The direction of the turn is determined by the walking line. HALF_WINDING_STAIR: A stair consisting of one flight with one half winder, which makes a 180° turn. The orientation of the turn is determined by the walking line. HALF_TURN_STAIR: A stair making a 180° turn, consisting of two straight flights connected by a halfspace landing. The orientation of the turn is determined by the walking line. TWO_QUARTER_WINDING_STAIR: A stair consisting of one flight with two quarter winders, which make a 90° turn. The stair makes a 180° turn. The direction of the turns is determined by the walking line. TWO_QUARTER_TURN_STAIR: A stair making a 180° turn, consisting of three straight flights connected by two quarterspace landings. The direction of the turns is determined by the walking line. THREE_QUARTER_WINDING_STAIR: A stair consisting of one flight with three quarter winders, which make a 90° turn. The stair makes a 270° turn. The direction of the turns is determined by the walking line. THREE_QUARTER_TURN_STAIR: A stair making a 270° turn, consisting of four straight flights connected by three quarterspace landings. The direction of the turns is determined by the walking line. SPIRAL_STAIR: A stair constructed with winders around a circular newel often without landings. Depending on outer boundary it can be either a circular, elliptical or rectangular spiral stair. The orientation of the winding stairs is determined by the walking line. DOUBLE_RETURN_STAIR: A stair having one straight flight to a wide quarterspace landing, and two side flights from that landing into opposite directions. The stair is making a 90° turn. The direction of traffic is determined by the walking line. CURVED_RUN_STAIR: A stair extending from one level to another without turns or winders. The stair is consisting of one curved flight. TWO_CURVED_RUN_STAIR: A curved stair consisting of two curved flights without turns but with one landing. USERDEFINED: Free form stair (user defined operation type). NOTDEFINED:	X	X	X	X	
NOSSB_Process					
Designed status IFC 4 Add2 : NOSSB_Process.DesignedStatus	X	X	X	X	
Constructed status IFC 4 Add2 : NOSSB_Process.ConstructedStatus				X	
NOSSB_Reference					
Aggregated Code (RefString) IFC 4 Add2 : NOSSB_Reference.RefString Complete aggregated code on appointing partys preferred format.			X	X	
Pset_ManufacturerTypeInfo Defines characteristics of types (ranges) of manufactured products that may be given by the manufacturer. Note that the term 'manufactured' may also be used to refer to products that are supplied and identified by the supplier or that are assembled off site by a third party provider. HISTORY: This property set replaces the entity IfcManufacturerInformation from previous IFC releases. IFC 2x4: AssemblyPlace property added.					

Level of Information (LOI)	B3.1	B3.2	B4.1	B5.1	
GlobalTradelItemNumber IFC 4 Add2 : Pset_ManufacturerTypeInfo.GlobalTradelItemNumber				X	
<i>Pset_StairCommon</i> Properties common to the definition of all occurrences of IfcStair.					
IsExternal IFC 4 Add2 : Pset_StairCommon.IsExternal		X	X	X	
LoadBearing IFC 4 Add2 : Pset_StairCommon.LoadBearing	X	X	X	X	

