CONSTRUCTION ELEMENT SPECIFICATIONS
– for selected construction elements in building and landscaping models

REV5

DiKon
Digital Konvergens

BIM7AA
praksisorienteret tværfaglig digitalisering

MOLIO
viden, du bygger på

CONTENTS

**THE CONSTRUCTION ELEMENT SPECIFICATIONS
ARE A RESULT OF A COLLABORATION BETWEEN**

INSTRUCTION

INTRODUCTION

As construction elements (objects) and the associated information (properties) gets an increasing significance for the participants in construction projects, there is a demand for specifications of the contents of a building model in terms of reliability, geometrical representation and the associated properties.

This demand will typically arise in two situations:

• When making agreements where there must be a precise mutual understanding of the reliability, geometrical representation and properties of construction elements at a given point in time. This is typically agreed and documented in a model delivery specification.

• Support of the project execution, where there is a need to establish when to deliver which information in the process and by whom.

These insights are preconditions for using the building model for specific purposes, as well as determining the responsibility for a specific object in the building model.

In order to establish a simple method for describing the contents of the building model at a given point in time, DiKon and BIM7AA have collaboratively developed the Specification of Construction elements for selected construction elements (Danish: Bygningsdelsspecifikation) in collaboration with Molio.

The basis for the Specification of Construction elements is Description of services for Building and Landscape 2018, BIMforums LOD levels, Molios Levels of Information as well as the experience of the members of the working groups.

LOD terminology is used in this publication to ensure future consistency with other international LOD standards and publications. This publication applies exclusively to information present in the building model and not to other project related information.

DiKon and BIM7AA have each developed a Model Delivery Specification describing the contents of the building model. These can be used to describe the specific elements in the building model for each professional discipline and project phase. Please visit dikon.info and bim7aa.dk for more information.

In the forthcoming work it is the ambition to create one common delivery specification.

DEFINITION OF LOD AND ASSOCIATED CONCEPTS

Level of Development (LOD) gives an explicit specification of the information about construction elements, which must be present in the building model at different stages during the design and construction process.

LOD for construction elements is comprised of:

Level of Reliability (LOR) specifies the reliability of the information provided for the construction elements and associated properties.

Level of Geometry (LOG) specifies the geometric representation of the construction element as well as the extent of included components/parts.

Level of Information (LOI) specifies the properties of the construction element either contained in, linked to, or in some other way connected.

LOD LEVELS

A given LOD level thereby specifies the required levels for geometrical representation and properties as well as the reliability of those aspect.

To avoid confusion with other international LOD specifications the Danish specification uses the Danish country code DK as part of the LOD levels – for example LOD 200 DK. LOD levels includes a predefined set of matching levels for LOR, LOG and LOI. E.g., LOD 200 DK consists of LOR 200 DK, LOG 200 DK and LOI 200 DK.

It is possible to combine LOR, LOG and LOI from different levels, e.g., if there is a need for a more detailed geometric representation and range of properties. In this case the LOD level is specified using the following syntax: |200|325|300|, where the first number (200) specifies the LOR level, the next (325) specifies the LOG level and the last number (300) specifies the LOI level.

Note that the LOR level still determines the reliability of the LOG and LOI levels.

LOD-levels are not bound to specific phases. This allows different construction elements to be at different LOD levels in a specific project phase.

LOD 200 DK specifies construction elements modelled as generic objects with associated properties. All information is specified as 'assumed'.

LOD 300 DK specifies construction elements modelled as specific types of objects with associated properties. All information is specified as 'defined'.

LOD 325 DK specifies construction elements modelled as detailed types of objects with associated specific properties. All information is specified as 'final'.

LOD 400 DK specifies construction elements modelled based on specific product types with associated product specific properties. All information is specified as 'final detailed'.

The BIMforum LOD levels use a level LOD 350 while DiKon and BIM7AA uses LOD325. This reflects the fact that the typical required deliverables in Denmark are structured differently from those in BIMforums LOD 350.

COHERENCE WITH OTHER DANISH STANDARDS AND AGREEMENT DOCUMENTS

The table below illustrates an approximate relation between the LOD DK-levels and the MOLIO Levels of information as well as the service §9.4 "Digital design" from the Danish Description of services for Building and Landscape 2018 (YBL 2018).

LOD DK	LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Levels of Information	3	4	5	6
YBL 2018, Digital design	Assumed geometry	Defined geometry	Final geometry	-

USE

For selected construction elements in LOD Levels 200, 300, 325 and 400 there are specifications for LOR, LOG and LOI. In some cases, the specifications regard specific construction elements, in other cases the specifications apply to a group of construction elements.

LOD 200, 300 and 325 are directly linked to design services from YBL 2018, while LOD 400 is relevant to the production process for construction elements. This is noted with each specification.
If §9.4 Digital Design Services are selected from YBL 2018 and LOD DK are used then all of LOR, LOG and LOI levels are required for each construction element.

The Specification of Construction elements is intended for use in its entirety. Changes and additions are not allowed in the catalogue. Changes and/or additions should be specified in the delivery specification or an individual attachment.

Note that requirements related to, for example, the extent of digital design services and use of classification and quantity take-off from the building model, must be defined in the contract between the parties.

ORGANIZATION OF THE WORK

The development of the Construction element specifications is governed by a steering group consisting of 2 representatives from BIM7AA, 2 representatives from DiKon, 1 client representative, 1 representative from a product manufacturer as well as 1 representative from Molio.

The steering group decides scope and time schedule for publication and foresees coordination with the BIM7AA and DiKon groups and communication with the construction sector as a whole. The development of the content of the specifications is carried out in 3 working groups for Architecture, Structural and MEP respectively.

COMMENTS

The Construction element specifications are updated on a regular basis and comments and suggestions will be appreciated. They can be mailed to:
DiKon: mail@dikon.info, BIM7AA: mail@bim7aa.dk or Molio: info@molio.dk.

WORKING GROUP

The following companies have participated in working groups related to this publication:

From DiKon:
Arkitema, COWI, NCC, Rambøll, Sweco and Aarsleff

From BIM7AA:
AART, Arkitema, C.F. Møller, Cubo, Friis & Moltke, Link arkitektur and Schmidt Hammer Lassen Architects.
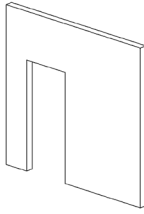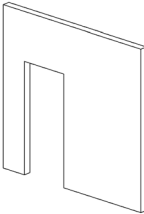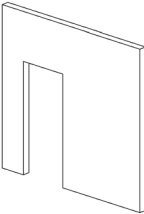
WHO ARE BIM7AA AND DIKON?

BIM7AA is a voluntary collaboration between 7 architectural companies in Denmark (AART architects, Arkitema Architects, C.F.Møller, CUBO Arkitekter A/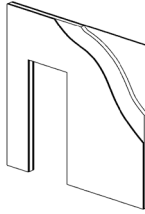S, Friis & Moltke, LINK arkitektur and schmidt hammer lassen architects). The objective for BIM7AA is to develop and finetune common BIM-tools, -methods and -processes focusing on collaboration across professional disciplines. DiKon is a collaboration between 6 construction companies (Arkitema Architects, COWI, NCC, Rambøll, Sweco and Aarsleff), who all share a vision of establishing precise IT-standards and streamline the digital construction process in the Danish construction industry. The Vision behind DiKon is to develop strong common industry standards, based on a common understanding of the need for digital standards, which can constitute a firm basis for the collaboration between parties in the digital construction process.

SPECIFICATION FOR WALL

Revision 5

Applies to all external and internal non-loadbearing walls

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Walls are specified on an assumed level for geometry, location and associated properties.	Walls are specified on a defined level for geometry, location and associated properties.	Walls are specified on a final level for geometry, location and associated properties.	Walls are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Walls including larger openings are modelled in maximum outer dimensions divided into expected types.	Walls including larger openings are modelled in maximum outer dimensions organized into types.	Walls including larger openings are modelled in maximum outer dimensions organized into types.	Walls including larger openings are modelled with constructive layers organized into types. Secondary constructive layers can be accumulated. Larger holes and components are modelled.

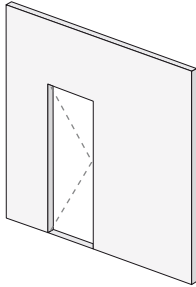| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Width	**9.4 Digital design** Type Name Width	**9.4 Digital design** Type Name Width Location: Storey Construction	**9.4 Digital design** Type Name Width Location: Storey Construction Contract

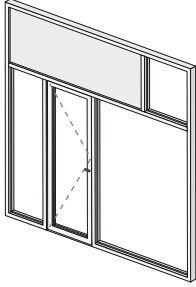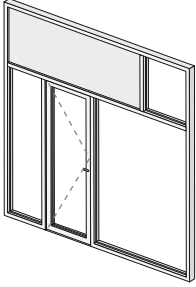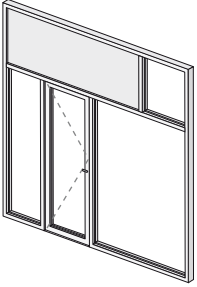**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

CONSTRUCTION ELEMENT SPECIFICATIONS
- for selected construction elements in building models

SPECIFICATION FOR GLASS/SYSTEM WALLS
Applies to all composite system walls, glazed and unglazed

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
CCS Information level 3	CCS Information level 4	CCS Information level 5	CCS Information level 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Glass/ system walls are specified on an assumed level for geometry, location and associated properties.	**DEFINED** Glass/ system walls are specified on a defined level for geometry, location and associated properties.	**FINAL** Glass/ system walls are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Glass/ system walls are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Glass/ system walls, including generic location and size of openings and panels, are modelled as maximum external extent divided into expected types.	Glass/ system walls, including grids with subdivision of panels, openings and profiles, are modelled as maximum external extent organised into types.	Glass/ system walls, including grids with subdivision of panels, openings and profiles, are modelled as maximum external extent organised into types.	Glass/ system walls, including grids with subdivision of panels, openings and profiles, are modelled as maximum external extent organised into types.

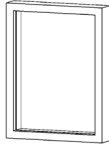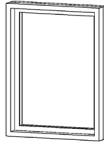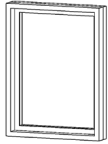| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Dimensions	**9.4 Digital design** Type Name Dimensions	**9.4 Digital design** Type Name Location: Storey Dimensions Construction	**9.4 Digital design** Type Name Location: Storey Dimensions Construction Contract

Finishing components comply with the LOD development in this specification unless otherwise stated, but are specified in their own sheets.

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | BIM7AA | MOLIO

SPECIFICATION FOR WINDOW

Revision 5

Applies to all windows, panes and panels

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Windows are specified on an assumed level for geometry, location and associated properties.	Windows are specified on a defined level for geometry, location and associated properties.	Windows are specified on a final level for geometry, location and associated properties.	Windows are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Windows are modelled with overall width and height divided into expected types.	Windows are modelled with overall width and height and frame organized into types.	Windows are modelled with overall width and height and frame and sash organized into types.	Windows are modelled with overall width and height and final frame and sash organized into types.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Overall width Overall height	**9.4 Digital design** Type Name Overall width Overall height	**9.4 Digital design** Type Name Overall width Overall height Location: Storey Fire exit Construction Firetechnical class Acoustic rating	**9.4 Digital design** Type Name Overall width Overall height Location: Storey Fire exit Construction Firetechnical class Acoustic rating Contract

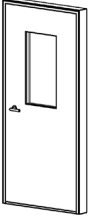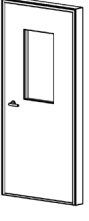**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFIKATION FOR DOOR

Applies to all external and internal doors

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Doors are specified on an assumed level for geometry, location and associated properties.	Doors are specified on a defined level for geometry, location and associated properties.	Doors are specified on a final level for geometry, location and associated properties.	Doors are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Doors are modelled with opening measurements divided into expected types.	Doors are modelled with opening measurements with frame and door leaf and organized into types.	Doors are modelled with opening measurements with frame and door leaf and organized into types. Door leafs are divided in panels.	Doors are modelled with opening measurements with frame and door leaf and organized into types. Door leafs are divided in panels.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Overall width Overall height	**9.4 Digital design** Type Name Overall width Overall height	**9.4 Digital design** Type Name Overall width Overall height Location: Storey Fire exit Hardware set Construction Firetechnical class Acoustic rating	**9.4 Digital design** Type Name Overall width Overall height Location: Storey Fire exit Hardware set Construction Firetechnical class Acoustic rating Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
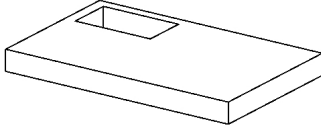Please refer to the instruction for this publication.
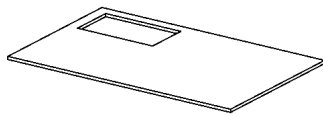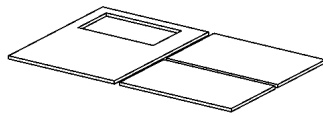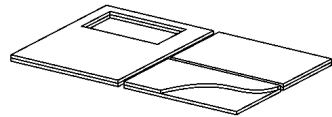
PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR FLOOR ASSEMBLY

Revision 5

Applies to slab assemblies at generic level and floor constructions at all other levels

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Slab assemblies are specified on an assumed level for geometry, location and associated properties.	Floor constructions are specified on a defined level for geometry, location and associated properties.	Floor constructions are specified on a final level for geometry, location and associated properties.	Floor constructions are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Slab assemblies including larger openings are modelled in maximum external extent divided into expected types.	Floor constructions including larger openings are modelled in maximum external extent organized into types.	Floor constructions including larger openings are modelled in maximum external extent organized into types. Floor constructions are divided by walls.	Floor constructions including larger openings are modelled with construction layers and divisions by walls organized into types. Secondary construction layers can be accumulated. Larger holes etc. are modelled.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Width	**9.4 Digital design** Type Name Width	**9.4 Digital design** Type Name Width Location: Storey Construction	**9.4 Digital design** Type Name Width Location: Storey Construction

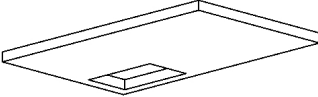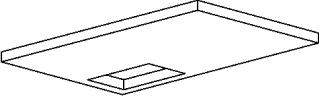**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR CEILING
Applies to ceilings

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	DEFINED	FINAL	FINAL DETAILED
See the specification for generic slab assemblies under floor assemblies.	Ceilings are specified on a defined level for geometry, location and associated properties.	Ceilings are specified on a final level for geometry, location and associated properties.	Ceilings are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	TYPE-LEVEL	DETAILED TYPE-LEVEL	PRODUCTION-LEVEL
See the specification for generic slab assemblies under floor assemblies.	Ceilings including larger openings are modelled in maximum external extent organized into types.	Ceilings including larger openings are modelled in maximum external extent organized into types. Ceilings are divided by walls.	Ceilings including larger openings are modelled with construction layers and divisions by walls organized into types. Secondary construction layers can be accumulated. Larger holes etc. are modelled.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	PROPERTIES FOR SERVICES	PROPERTIES FOR SERVICES	PROPERTIES FOR SERVICES
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design See the specification for generic slab assemblies under floor assemblies.	**9.4 Digital design** Type Name Width	**9.4 Digital design** Type Name Width Location: Storey Construction	**9.4 Digital design** Type Name Width Location: Storey Construction

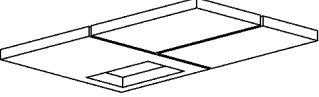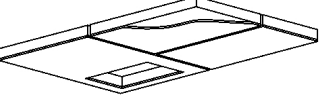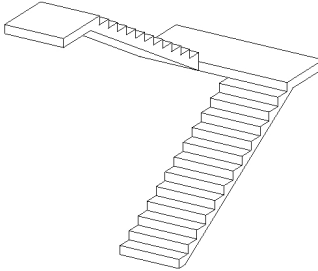**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
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By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR STAIR AND RAMP
Applies to in-situ and prefabricated stairs and ramps

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Stairs are specified on an assumed level for geometry, location and associated properties.	Stairs are specified on a defined level for geometry, location and associated properties.	Stairs are specified on a final level for geometry, location and associated properties.	Stairs are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Stair flights and ramps are modelled in maximum external extent divided into expected types.	Stair flights and ramps are modelled in maximum external extent organized into types.	Stair flights and ramps are modelled in maximum external extent organized into types.	Stair flights and ramps are modelled in maximum external extent organized into types. Consoles and larger holes are modelled.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name	**9.4 Digital design** Type Name Required slope for ramps	**9.4 Digital design** Type Name Location: Storey Required slope for ramps	**9.4 Digital design** Type Name Location: Storey Required slope for ramps Contract

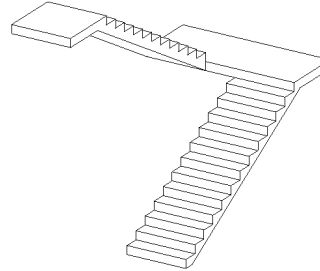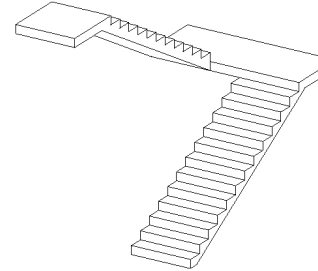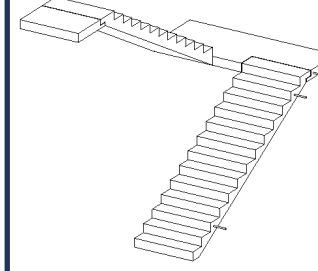**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR RAILING
Applies to railings

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Not relevant for LOR 200	**DEFINED** Railings are specified on a defined level for geometry, location and associated properties.	**FINAL** Railings are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Railings are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Not relevant for LOG 200	Railings are modelled in maximum external extent organized into types.	Railings are modelled in maximum external extent with an indication of railing type and handrail organized into types.	Railings are modelled in maximum external extent with railing type and handrail organized into types.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Not relevant for LOG 200	**9.4 Digital design** Type Name Height	**9.4 Digital design** Type Name Height Location: Storey Construction	**9.4 Digital design** Type Name Height Location: Storey Construction

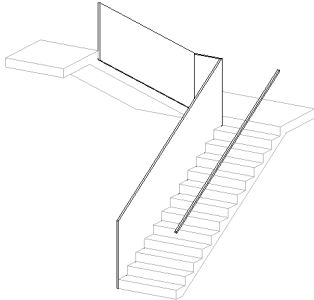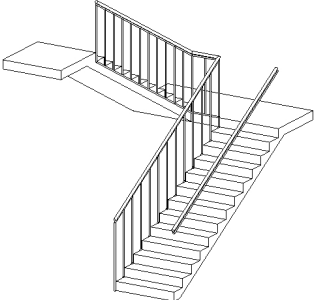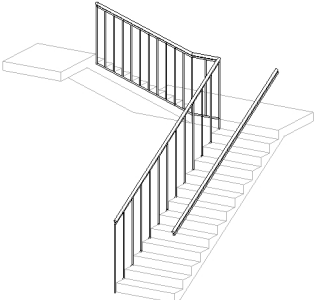**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR ROOF

Revision 5

Applies to roof constructions which terminates the building upwards

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Roofs are specified on an assumed level for geometry, location and associated properties.	Roofs are specified on a defined level for geometry, location and associated properties.	Roofs are specified on a final level for geometry, location and associated properties.	Roofs are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Roofs including larger openings are modelled in maximum external extent divided into expected types.	Roofs including larger openings are modelled in maximum external extent organized into types.	Roofs including larger openings are modelled in maximum external extent with slope and organized into types.	Roofs including larger openings are modelled in maximum external extent with construction layers and slope and organized into types. Secondary construction layers can be accumulated. Larger holes, gutters and roof drains etc. are modelled.

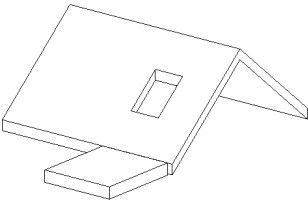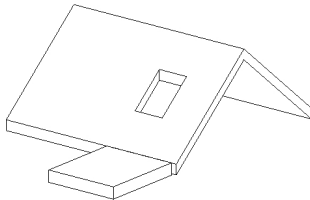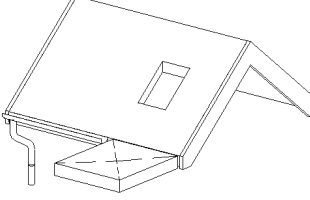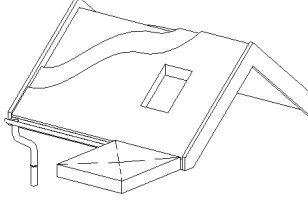| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Width	**9.4 Digital design** Type Name Width	**9.4 Digital design** Type Name Width Location: Storey Construction	**9.4 Digital design** Type Name Width Location: Storey Construction Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR FURNITURE AND FITTINGS
Applies to furniture, fittings, casework

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Furniture and fittings are specified on an assumed level for geometry, location and associated properties.	**DEFINED** Furniture and fittings are specified on a defined level for geometry, location and associated properties.	**FINAL** Furniture and fittings are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Furniture and fittings are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Furniture and fittings are modelled in maximum external extent divided into expected types.	Furniture and fittings are modelled in maximum external extent organized into types.	Furniture and fittings are modelled in maximum external extent with slope and organized into types.	Furniture and fittings are modelled and organized into types.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID) **9.4 Digital design** Type Name Depth	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID) **9.4 Digital design** Type Name Depth Location: Storey Construction	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID) **9.4 Digital design** Type Name Depth Location: Storey Construction Contract
9.4 Digital design Type Name Depth			

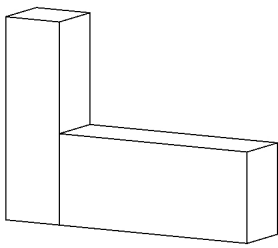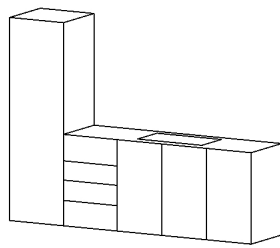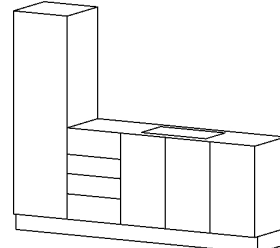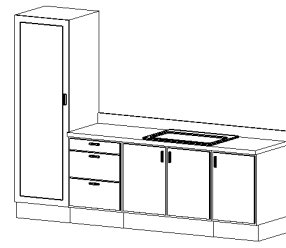| DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI	PRODUCTION
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018). By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element. Please refer to the instruction for this publication.	The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR SPACES

Revision 5

Applies to all space objects delimited by 3D structures

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Spaces are specified on an assumed level for geometry, location and associated properties.	**DEFINED** Spaces are specified on a defined level for geometry, location and associated properties.	**FINAL** Spaces are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Spaces are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Spaces modelled as objects.	Spaces modelled as objects to upper boundary.	Spaces modelled as objects to upper boundary.	Spaces modelled as objects to upper boundary.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Room Name Floor Area	**9.4 Digital design** Room Name Room Number Floor Area	**9.4 Digital design** Room Name Room Number Floor Area Location: Storey Fire Exit	**9.4 Digital design** Room Name Room Number Floor Area Location: Storey Fire Exit

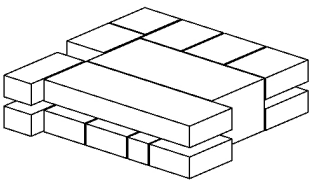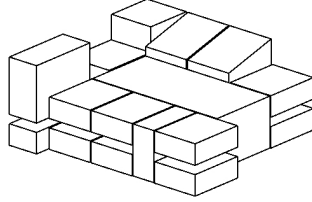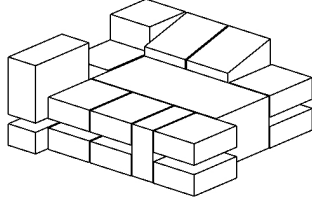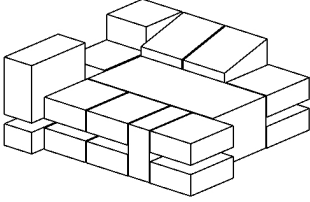**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
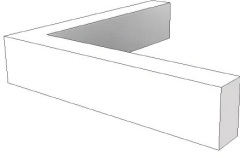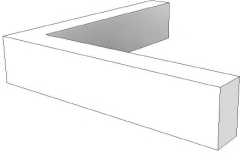Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

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SPECIFICATION FOR FOUNDATION
Applies to strip foundations and footings

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Foundations are specified on an assumed level for geometry, location and associated properties.	Foundations are specified on a defined level for geometry, location and associated properties.	Foundations are specified on a final level for geometry, location and associated properties.	Foundations are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Foundations are modelled as generic objects in maximum external extent divided into expected types.	Foundations are modelled with major openings and holes for building services.	Foundations are modelled with stepping, plinths, openings for building services with a diameter or edge length over 150 mm.	Foundations are modelled with stepping, plinths, corbels, openings for building services, reinforcement incl. lap lengths, mounting bars, bevels, inserts and plates.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name: Cross section Length	**9.4 Digital design** Type Name: Cross section Length Load Bearing	**9.4 Digital design** Type Name: Cross section Length Load Bearing Location: Storey	**9.4 Digital design** Type Name: Cross section Length Load Bearing Location: Storey Surface treatment Surface requirements Compressive strength Exposure class Maximum aggregate size Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
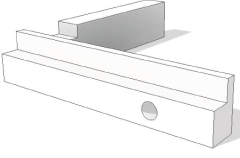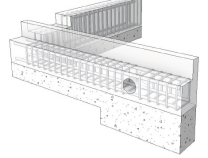Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

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SPECIFICATION FOR CONCRETE WALL

Revision 5

Applies to in-situ and prefabricated concrete walls

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Walls are specified on an assumed level for geometry, location and associated properties.	Walls are specified on a defined level for geometry, location and associated properties.	Walls are specified on a final level for geometry, location and associated properties.	Walls are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Walls are modelled as generic objects in maximum external extent divided into expected types.	Walls are modelled with openings and holes for building services.	Walls are modelled with openings and holes building services with a diameter or edge length over 150 mm as well as consoles and corrugated pipes. Scope of element sectioning, skirts and folds is agreed on project level.	Wall are modelled sectioned in elements with openings and holes for building services as well as consoles, corrugated pipes, joints, joint sealing, reinforcement incl. lap lengths, mounting bars, bevels, inserts and plates.

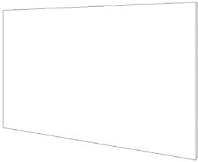| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Width Height Length	**9.4 Digital design** Type Name Width Height Length Load bearing	**9.4 Digital design** Type Name Width Height Length Load bearing Location: Storey	**9.4 Digital design** Type Name Width Height Length Load bearing Location: Storey Surface treatment Surface requirements Compressive strength Exposure class Maximum aggregate size Contract

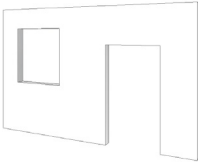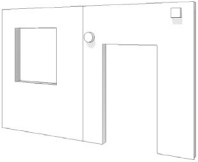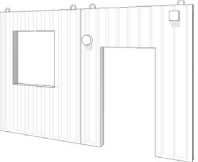**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR CONCRETE COLUMN

Revision 5

Applies to in-situ and prefabricated concrete columns

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Columns are specified on an assumed level for geometry, location and associated properties.	Columns are specified on a defined level for geometry, location and associated properties.	Columns are specified on a final level for geometry, location and associated properties.	Columns are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Columns are modelled as generic objects in maximum external extent divided into expected types.	Columns are modelled with major holes for building services.	Columns are modelled in fabrication-ready lengths with consoles, anchoring and holes for building services.	Columns are modelled in fabrication-ready lengths with consoles, anchoring and holes for building services, joints, reinforcement incl. lap lengths, mounting bars, bevels, inserts and plates.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name: Cross section Length	**9.4 Digital design** Type Name: Cross section Length Load bearing	**9.4 Digital design** Type Name: Cross section Length Load bearing Location: Storey	**9.4 Digital design** Type Name: Profile Length Load bearing Location: Storey Surface treatment Surface requirements Compressive strength Exposure class Maximum aggregate size Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR STEEL COLUMN

Revision 5

Applies to steel columns

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Columns are specified on an assumed level for geometry, location and associated properties.	Columns are specified on a defined level for geometry, location and associated properties.	Columns are specified on a final level for geometry, location and associated properties.	Columns are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Columns are modelled as generic objects in maximum external extent divided into expected types.	Columns are modelled with major holes for building services.	Columns are modelled in fabrication-ready lengths with consoles and holes for building services. Fire insulation is modelled when it is crucial for interdisciplinary coordination.	Columns are modelled in fabrication-ready lengths with consoles, anchoring and holes for building services, bolts, connection plates, welding seams and fire insulation.

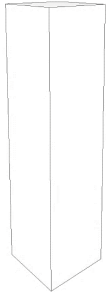| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name: Profile Length	**9.4 Digital design** Type Name: Profile Length Load bearing	**9.4 Digital design** Type Name: Profile Length Load bearing Location: Storey	**9.4 Digital design** Type Name: Profile Length Load bearing Location: Storey Steel grade Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

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SPECIFICATION FOR CONCRETE SLAB

Revision 5

Applies to in-situ and prefabricated concrete slabs

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Slabs are specified on an assumed level for geometry, location and associated properties.	Slabs are specified on a defined level for geometry, location and associated properties.	Slabs are specified on a final level for geometry, location and associated properties.	Slabs are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Slabs are modelled as generic objects in maximum external extent divided into expected types.	Slabs are modelled with openings and holes for building services.	Slabs are modelled with specification of span directions, larger in-situ cast sections, openings and holes for building services with a diameter or edge length over 150 mm. Scope of element sectioning is agreed on project level.	Slabs are modelled sectioned in elements for production with openings and holes for building services as well as consoles, corrugated pipes, joints, joint sealing, reinforcement incl. lap lengths, mounting bars, bevels, inserts, plates, structural joints and screed.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Width	**9.4 Digital design** Type Name Width Load bearing	**9.4 Digital design** Type Name Width Load bearing Location: Storey	**9.4 Digital design** Type Name Width Load bearing Location: Storey Surface treatment Surface requirements Compressive strength Exposure class Maximum aggregate size Contract

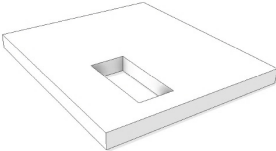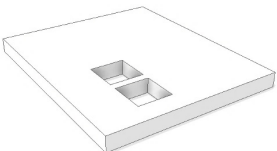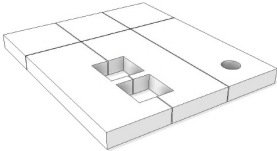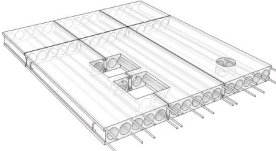**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | BIM7AA | MOLIO

SPECIFICATION FOR CONCRETE BEAM

Revision 5

Applies to in-situ and prefabricated concrete beams

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Beams are specified on an assumed level for geometry, location and associated properties.	**DEFINED** Beams are specified on a defined level for geometry, location and associated properties.	**FINAL** Beams are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Beams are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Beams are modelled as generic objects in maximum external extent divided into expected types.	Beams are modelled with major holes for building services.	Beams are modelled in fabrication-ready lengths with consoles and holes for building services.	Beams are modelled in fabrication-ready lengths with consoles, anchoring and holes for building services, joints, reinforcement incl. lap lengths, mounting bars, bevels, inserts and plates.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name: Cross section Length	**9.4 Digital design** Type Name: Cross section Length Load bearing	**9.4 Digital design** Type Name: Cross section Length Load bearing Location: Storey	**9.4 Digital design** Type Name: Cross section Length Load bearing Location: Storey Surface treatment Surface requirements Compressive strength Exposure class Maximum aggregate size Contract

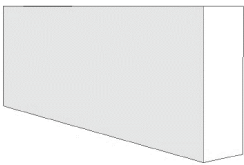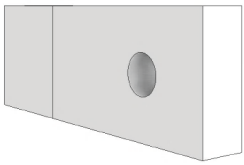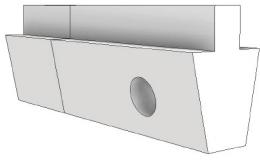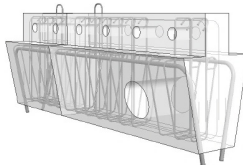| DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI	PRODUCTION
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018). By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element. Please refer to the instruction for this publication.	The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | **BIM7AA** | **MOLIO**

SPECIFICATION FOR STEEL BEAM
Applies to steel beams

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Beams are specified on an assumed level for geometry, location and associated properties.	**DEFINED** Beams are specified on a defined level for geometry, location and associated properties.	**FINAL** Beams are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Beams are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Beams are modelled as generic objects in maximum external extent divided into expected types.	Beams are modelled with major holes for building services.	Beams are modelled in fabrication-ready lengths with consoles and holes for building services. Fire insulation is modelled when it is crucial for interdisciplinary coordination.	Beams are modelled in profile lengths for fabrication with consoles, anchoring and holes for building services, bolts, connection plates, welding seams and fire insulation.

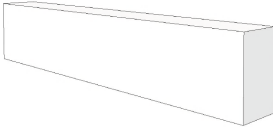| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name: Profile Length	**9.4 Digital design** Type Name: Profile Length Load bearing	**9.4 Digital design** Type Name: Profile Length Load bearing Location: Storey	**9.4 Digital design** Type Name: Profile Length Load bearing Location: Storey Steel grade Contract

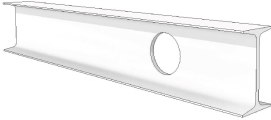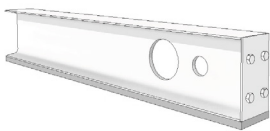**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR ELECTRICAL ROUTING

Revision 5

Applies to cable trays and ladders, installation channels and cable ducts etc.

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Routings are specified on an assumed level for geometry, location and associated properties.	Routings are specified on a defined level for geometry, location and associated properties.	Routings are specified on a final level for geometry, location and associated properties.	Routings are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Routings are modelled as common generic volume objects for all building services in maximum external extent including clearance to other objects.	Routings are modelled in maximum external extent.	Routings are modelled in external extent.	Routings are modelled in dimensions based on actual selected products and production lengths.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Dimension	**9.4 Digital design** Type Name Dimension Center elevation	**9.4 Digital design** Type Name Dimension Center elevation Location: Storey	**9.4 Digital design** Type Name Dimension Center elevation Location: Storey Material Number of compartments Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
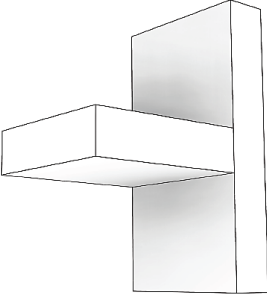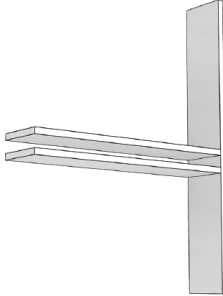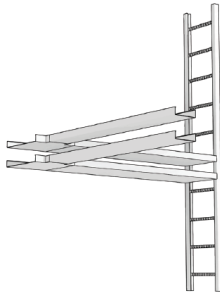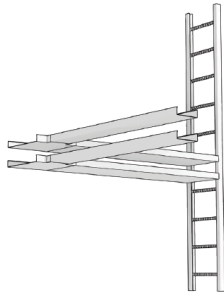Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | BIM7AA | MOLIO

SPECIFICATION FOR ELECTRICAL COMPONENTS

Revision 5

Applies to all types of components for electrical installations
(distribution boards, rack cabinets, lighting fixtures, power outlets, workstations etc.)

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Components are specified on an assumed level for geometry, location and associated properties.	Components are specified on a defined level for geometry, location and associated properties.	Components are specified on a final level for geometry, location and associated properties.	Components are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	TYPE-LEVEL	DETAILED TYPE-LEVEL	PRODUCTION-LEVEL
Components are modelled as generic volume objects for all building services in maximum external extent.	Components are modelled in maximum external extent.	Components are modelled in external extent.	Components are modelled in dimensions of actual selected products.

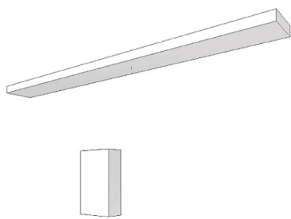| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	PROPERTIES FOR SERVICES	PROPERTIES FOR SERVICES	PROPERTIES FOR SERVICES
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name	**9.4 Digital design** Type Name	**9.4 Digital design** Type Name Center elevation Location: Storey	**9.4 Digital design** Type Name Center elevation Location: Storey Distribution board number Dimensions Contract

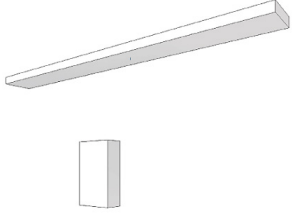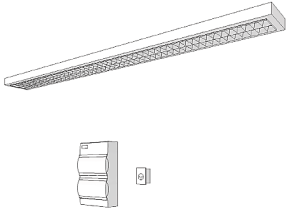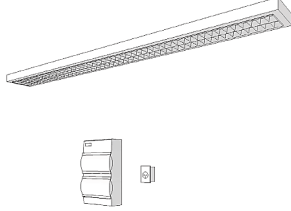**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | **BIM7AA** | **MOLIO**

SPECIFICATION FOR VENTILATION ROUTING
Applies to ducts and duct fittings

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Routings are specified on an assumed level for geometry, location and associated properties.	Routings are specified on a defined level for geometry, location and associated properties.	Routings are specified on a final level for geometry, location and associated properties.	Routings are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Routings are modelled as common generic volume objects for all building services in maximum external extent including clearance to other objects.	Routings are modelled in maximum external duct dimensions including fittings and necessary insulation.	Routings are modelled in external duct dimensions including fittings and necessary insulation.	Routings are modelled in external duct dimensions including fittings and necessary insulation based on actual production lengths.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Dimension	**9.4 Digital design** Type Name Dimensions Center elevation Insulation thickness System	**9.4 Digital design** Type Name Dimensions Center elevation Insulation thickness Insulation type Location: Storey System Air direction	**9.4 Digital design** Type Name Dimensions Center elevation Insulation thickness Insulation type Location: Storey System Air direction Air volume Material Contract

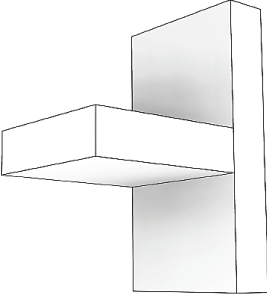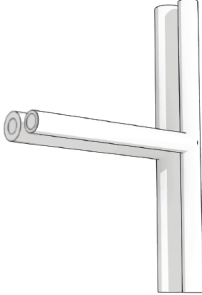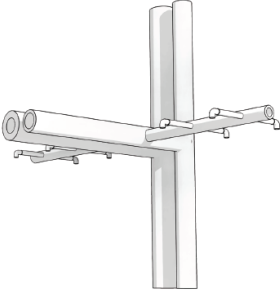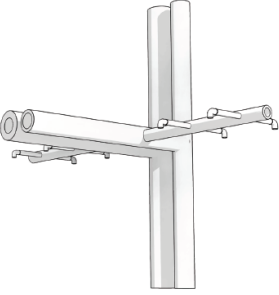**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element. Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | BIM7AA | MOLIO

SPECIFICATION FOR VENTILATION COMPONENTS

Revision 5

Applies to all types of ventilation components
(Ventilation units, fans, diffusers, valves etc.)

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Components are specified on an assumed level for geometry, location and associated properties.	Components are specified on a defined level for geometry, location and associated properties.	Components are specified on a final level for geometry, location and associated properties.	Components are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Components are modelled as generic volume objects for all building services in maximum external extent.	Components are modelled in maximum external extent.	Components are modelled in external extent.	Components are modelled in dimensions of actual selected products.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name	**9.4 Digital design** Type Name System	**9.4 Digital design** Type Name Center elevation Location: Storey System	**9.4 Digital design** Type Name Center elevation Location: Storey System Air volume Dimensions Contract

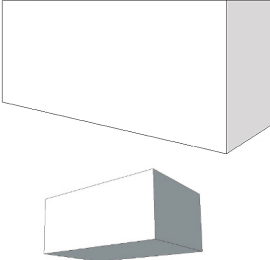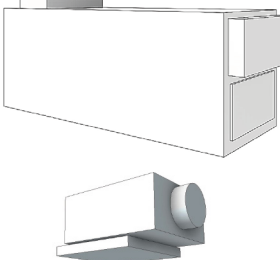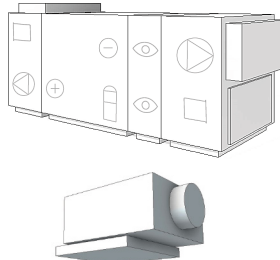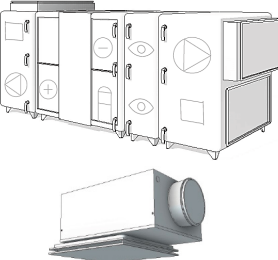| **DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**	**PRODUCTION**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018). By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element. Please refer to the instruction for this publication.	The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR HEATING AND SANITATION ROUTING

Revision 5

Applies to pipes, pipe fittings and pipe insulation

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Routings are specified on an assumed level for geometry, location and associated properties.	**DEFINED** Routings are specified on a defined level for geometry, location and associated properties.	**FINAL** Routings are specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Routings are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Routings are modelled as common generic volume objects for all building services in maximum external extent including clearance to other objects.	Routings are modelled in maximum external pipe dimensions including fittings and necessary insulation.	Routings are modelled in external pipe dimensions including fittings and necessary insulation.	Routings are modelled in external pipe dimensions including fittings and necessary insulation based on actual production lengths.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Dimension	**9.4 Digital design** Type Name Dimensions Center elevation Insulation thickness System	**9.4 Digital design** Type Name Dimensions Center elevation Insulation thickness Insulation type Location: Storey System	**9.4 Digital design** Type Name Dimensions Center elevation Insulation thickness Insulation type Location: Storey System Material Contract

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
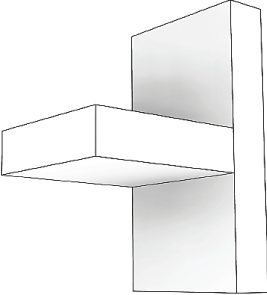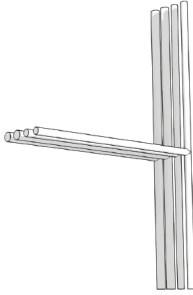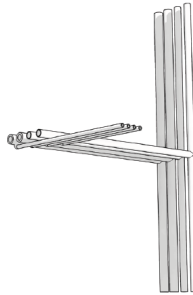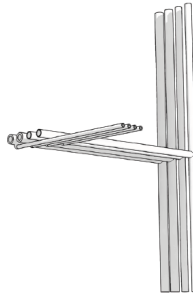Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR HEATING AND SANITATION COMPONENTS

Revision 5

Applies to all types of components for heating and sanitation
(Exchangers, tanks, filters, pumps, valves, heating panels, sprinklers etc.)

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Components are specified on an assumed level for geometry, location and associated properties.	Components are specified on a defined level for geometry, location and associated properties.	Components are specified on a final level for geometry, location and associated properties.	Components are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Components are modelled as generic volume objects for all building services in maximum external extent.	Components are modelled in maximum external extent.	Components are modelled in external extent.	Components are modelled in dimensions of actual selected products.

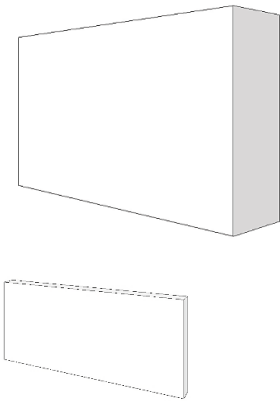| LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name	**9.4 Digital design** Type Name	**9.4 Digital design** Type Name Center elevation Location: Storey System	**9.4 Digital design** Type Name Center elevation Location: Storey System

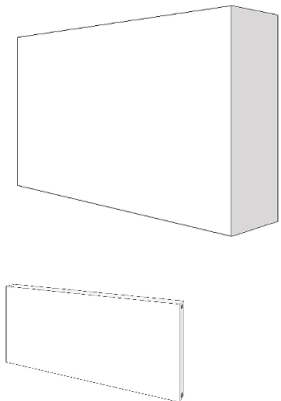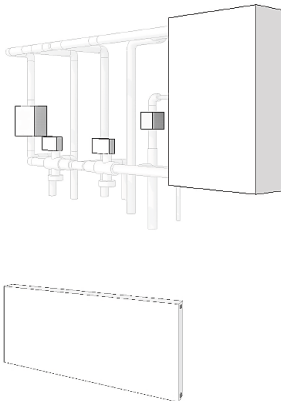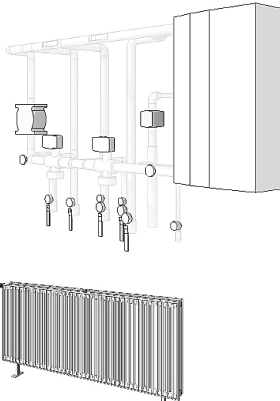**DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI**
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR RECESSES AND OPENINGS
Applies to all recesses and openings for installations

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
CCS Information level 3	CCS Information level 4	CCS Information level 5	CCS Information level 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Objects for openings are modelled on an assumed level for geometry, location and associated properties.	Objects for openings and drilling zones are modelled on a defined level for geometry, location and associated properties.	Objects for openings, drilling zones and recesses are modelled on a final level for geometry, location and associated properties.	Objects for openings, drilling zones and recesses are modelled on a final detailed level for geometry, location and associated properties.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Significant objects for openings are modelled as generic volume objects where modelled installations penetrate structural/ stabilising walls, slabs, beams and columns.	Objects for openings and drilling zones with a perimeter or diameter >200 mm are modelled at the defined level as generic volume objects where modelled installations penetrate structural/ stabilising walls, slabs, beams, columns and foundations. Length and diameter rounded off to nearest 5mm.	Objects for openings, recesses and drilling zones with perimeter or diameter >150 mm are modelled at the final level as generic volume objects where modelled installations penetrate structural /stabilising walls, slabs, beams, columns, foundations and the building envelope. Length and diameter rounded off to nearest 5mm.	Objects for openings, recesses and drilling zones with perimeter or diameter >100 mm are modelled at the final detailed level as generic volume objects where modelled installations penetrate structural /stabilising walls, slabs, beams, columns, foundations and the building envelope. Length and diameter rounded off to nearest 5mm.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
9.1 Classification	**9.1 Classification**	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID) Unique ID (-code/-ID)
9.4 Digital design Type Name Dimension	**9.4 Digital design** Type Name Width Height Depth Diameter	**9.4 Digital design** Type Name Width Height Depth Diameter Discipline	**9.4 Digital design** Type Name Width Height Depth Diameter Discipline

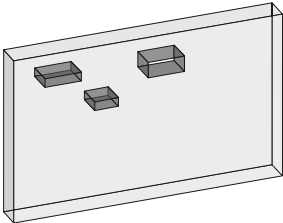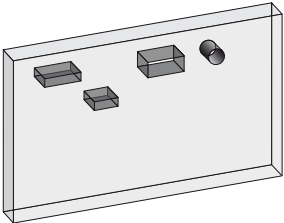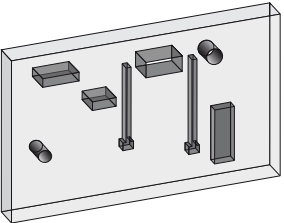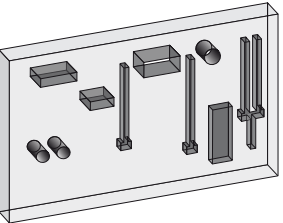| DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI	PRODUCTION
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018). By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element. Please refer to the instruction for this publication.	The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

INTRODUCTION

The publication of the Construction elements specifications for landscape/site models is the visible result of a collaboration between 6 landscape architecture companies: Arkitema Architects, C. F. Møller, Link Arkitektur, Schønherr, Årstiderne Arkitekter and 1:1 Landskab. The collaboration grew out of the professional network BIM i Landskabet.

The ambition has been that the landscape architecture companies, on an equal footing with other members of DiKon and BIM7AA, should have their own Construction elements specifications developed by landscape architects for landscape architects. This first publication of Specifications for Construction elements has primarily focused on landscaping related to buildings.

Landscape Architects has experienced a digital journey in the recent years as landscape architects are met with requirements for landscape models on an equal footing with building models.

Because of this, and in order to strengthen the collaboration across a profession seeing rapid digital development, there is a need to develop a shared collaboration tool which ensures shared digital standards in construction processes so all parties know what they can expect from landscape models, and how they integrate with the rest of the project.

The structure of the Construction elements specifications for landscape is identical to those for the architecture and engineering disciplines. To keep pace with the increasing importance of Construction elements (model objects) and their associated properties there is a need to clearly describe the contents of a landscape model as related to the Construction elements reliability, geometrical representation and associated properties. Precisely by clarifying the progression of the contents of a landscape model through the project phases we can ensure we create the greatest possible value based on the landscape architecture disciplines practice and the contents of YBL18.

The Construction element specificatons consist of four elements:
• External Surfaces in the Landscape
• Landscape Vegetation
• Stairs and Retaining Walls in the Landscape
• External Furniture in the Landscape

The specifications are based on what the landscape model contains rather than what it does not contain. To maintain consistency between disciplines the term "Construction elements" has been maintained.

See also the introduction to this publication.

WORK GROUP
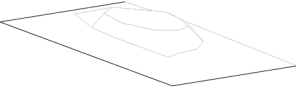The following companies has participated in the work groups behind this publication.
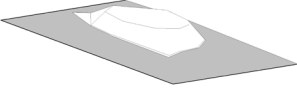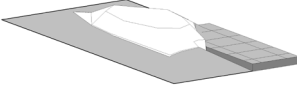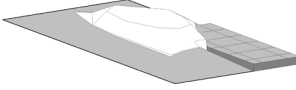From BIM i Landskabet:
Arkitema, C.F. Møller, Link arkitektur, Schønherr, Aarstiderne Arkitekter and 1:1 Landskab

ARKITEMA ARCHITECTS   CF MØLLER ARCHITECTS   LINK ARKITEKTUR   schønherr   ÅRSTIDERNE ARKITEKTER Part of Sweco   1:1 landskab

SPECIFICATION FOR EXTERNAL SURFACES IN THE LANDSCAPE
Applies to paved and unpaved surfaces outside in the landscape

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Surfaces of external areas are specified on an assumed level for geometry, location and associated properties.	Surfaces of external areas are specified on a defined level for geometry, location and associated properties.	Surfaces of external areas are specified on a final level for geometry, location and associated properties.	Surfaces of external areas are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Surfaces of external areas are modelled with the expected general elevations. Existing surfaces can be used.	Surfaces of external areas are modelled to contract boundary. Defined general elevation and intended drainage elevation including elevations at entrances, building corners and adjacent surfaces. There is a distinction between paved and unpaved surfaces.	Surfaces of external areas are modelled to contract boundary. Final general elevation of surfaces as basis for ground works. There is a distinction between different types of paved and unpaved surfaces.	Project specific elevations of construction elements. Basic perimeter of construction elements according to surface types.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Type Name Area	**9.4 Digital design** Type Name Area Top and bottom elevation Elevation at entrance and building corners	**9.4 Digital design** Type Name Area Top and bottom elevation Elevation at entrance and building corners Dimensions of substrate layers	**9.4 Digital design** Type Name Area Top and bottom elevation Elevation at entrance and building corners Dimensions of substrate layers

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element. Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR LANDSCAPE VEGETATION
Applies to individual and groups of plants in the landscape

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Objects for vegetation are not modelled in LOD 200. See External Surfaces instead.	Vegetation specified on a defined level for geometry, location and associated properties.	Vegetation specified on a final level for geometry, location and associated properties.	Vegetation specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Objects for vegetation are not modelled in LOD 200. See External Surfaces instead.	Defined disposition and indication of location of vegetation individually or in groups.	Final location of vegetation individually or in groups.	Final detailed location of vegetation individually or in groups.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Objects for vegetation are not modelled in LOD 200. See External Surfaces instead.	**9.4 Digital design** Type Name Area Count Size	**9.4 Digital design** Type Name Area Count Size Location	**9.4 Digital design** Type Name Area Count Size Location Construction

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
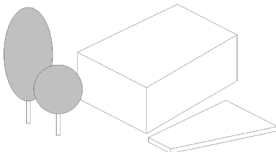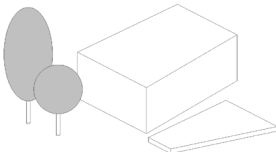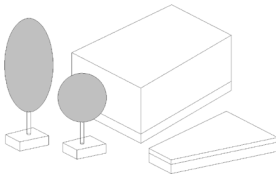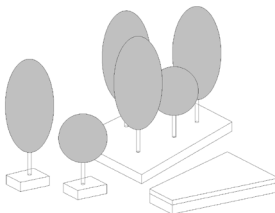Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR STAIR AND RETAINING WALL IN THE LANDSCAPE
Applies to stairs and retaining walls in the landscape

Revision 5

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED	**DEFINED**	**FINAL**	**FINAL DETAILED**
Objects for stairs and retaining walls are not modelled in LOD 200. See External Surfaces instead.	Stairs and retaining walls are specified on a defined level for geometry, location and associated properties.	Stairs and retaining walls are specified on a final level for geometry, location and associated properties.	Stairs and retaining walls are specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Objects for stairs and retaining walls are not modelled in LOD 200. See External Surfaces instead.	Objects for stairs and retaining walls are modelled in maximum external extent organized into types.	Objects for stairs and retaining walls are modelled in maximum external extent organized into types.	Objects for stairs and retaining walls are modelled in maximum external extent organized into types including major openings and major holes for building services.

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**	**PROPERTIES FOR SERVICES**
	9.1 Classification Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)	**9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Objects for stairs and retaining walls are not modelled in LOD 200. See External Surfaces instead.	**9.4 Digital design** Type Name Width Height Top and bottom elevation of stairs Top elevation retaining wall	**9.4 Digital design** Type Name Width Height Top and bottom elevation of stairs Top elevation retaining wall Construction	**9.4 Digital design** Type Name Width Height Top and bottom elevation of stairs Top elevation retaining wall Construction

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
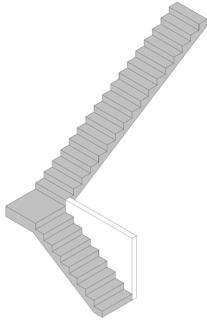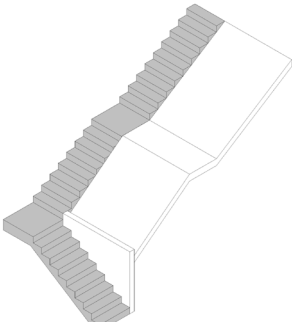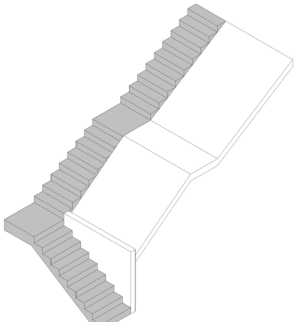Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

SPECIFICATION FOR FURNITURE IN THE LANDSCAPE

Revision 5

Applies to fixed furniture in the landscape

LOD 200 DK	LOD 300 DK	LOD 325 DK	LOD 400 DK
Molio Level of information 3	Molio Level of information 4	Molio Level of information 5	Molio Level of information 6

LOR 200	LOR 300	LOR 325	LOR 400
ASSUMED Furniture is not modelled in LOD 200.	**DEFINED** Furniture specified on a defined level for geometry, location and associated properties.	**FINAL** Furniture specified on a final level for geometry, location and associated properties.	**FINAL DETAILED** Furniture specified on a final detailed level for geometry, location and associated properties based on the actual choice of products.

LOG 200	LOG 300	LOG 325	LOG 400
GENERIC LEVEL	**TYPE-LEVEL**	**DETAILED TYPE-LEVEL**	**PRODUCTION-LEVEL**
Furniture is not modelled in LOD 200.	Standard furniture objects are modelled in maximum external extent organized into types.	Standard furniture objects are modelled in maximum external extent organized into types. Optionally objects from manufacturers.	Standard furniture objects are modelled according to the final choice of products organized into types..

LOI 200	LOI 300	LOI 325	LOI 400
PROPERTIES FOR SERVICES	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)	**PROPERTIES FOR SERVICES** **9.1 Classification** Classification code Type (-code/-ID)
9.4 Digital design Furniture is not modelled in LOD 200.	**9.4 Digital design** Type Name External dimensions	**9.4 Digital design** Type Name External dimensions Location	**9.4 Digital design** Type Name External dimensions Location Construction

DESCRIPTION OF SERVICES FROM DANSKE ARK AND FRI
The delivery requirements above shall be seen in relation to selected services in the Description of services for Building and Landscape 2018 (EN) (YBL2018).
By selecting the §9.4 Digital Design Service in YBL2018 as well as the LOD DK levels above, the LOR, LOG and LOI for the LOD DK are mandatory for each construction element.
Please refer to the instruction for this publication.

PRODUCTION
The delivery requirements above must be seen in conjunction with services related to contractor / supplier design.

DiKon | BIM7AA | MOLIO viden, du bygger på

PROPERTIES

Revision 5

Below is a complete list of the properties, that appears in the individual Construction element data sheets. The list contains the basic metadata for the properties. A more extensive specification can be found by following this link.
In the list below the properties are not shown by Construction element but only grouped by their association to §9.1 Classification or §9.4 Digital design in the Specification of services (YBL18).

IFC-properties are generally from IFC2x3 but for a few properties it is suggested to use the property names they will have in IFC4. This applies to e.g. Concrete Compressive Strength and Maximum Aggregate Size.

Revit Shared Parameter and Revit Propertyset files has been created in order to support IFC-exchange of Revit models.

Property name	Example	Property Set	Standardized Property	Data Type
9.1 Classification				
Classification code, BIM7AA	224	IfcClassification	BIM7AA	Number
Classification code, CCS	[L]AD	IfcClassification	CCSClassification	Text
Classification code, CCI	[L]AD	IfcClassification	CCIClassification	Text
Type code, BIM7AA	224	BIM7AA	BIM7AATypeCode	Number
TypeID, BIM7AA	224004	BIM7AA	BIM7AATypeID	Number
TypeID, CCS	[L]%AD1	CCS_Administrative	CCSTypeID	Text
TypeID, CCI	[L]%AD1	CCS_Administrative	CCITypeID	Text
Classification code, CCS	[L]ULE	CCS_Administrative	CCSClassification	Text
Classification code, CCI	[L]ULE	CCS_Administrative	CCIClassification	Text
Unique ID, CCS	L]#XTA01	CCS_Administrative	CCSSingleLevelID	Text
Unique ID, CCI	L]#XTA01	CCS_Administrative	CCISingleLevelID	Text
Unique ID		IfcElement	Tag	Text
9.4 Digital design				
Metadata				
Type Name	Type 1	IfcEntity	ObjectType	Text
Type Name: Cross section	150x150 mm	IfcEntity	ObjectType	Text
Type Name: Profile	HE200B	IfcEntity	ObjectType	Text
Room number	2.101	IfcRoot	Name	Text
Room name	Office	IfcSpatialElement	LongName	Text
System (IFC)	VA01	IfcRoot	Name	Text
System component (CCS, System)	[L]=J1.HF1	CCS_Administrative	CCSFunctionalID	Text
System (CCS, Component)	[L]=J1.HF1.WPB1	CCS_Administrative	CCSFunctionalID	Text
System (CCI, System)	[L]=J1.HF1	CCS_Administrative	CCIFunctionalID	Text
System (CCI, Component)	[L]=J1.HF1.WPB1	CCS_Administrative	CCIFunctionalID	Text
Distribution board number	01	IfcRoot	Name	Text
Insulation type (Object)		IfcEntity	ObjectType	Text
Insulation type (Reference)		Add[1]_PipeSegmentTypeCommon	InsulationType	Text
Insulation type (Reference)		Add[1]_DuctSegmentTypeCommon	InsulationType	Text
Placering				
Location: Storey	1st floor	IfcBuildingStorey	Name	Text
Center elevation	2500 mm	IfcObjectPlacement	IfcAxis2Placement	Number
Top- and bottom elevation	10000 mm	IfcObjectPlacement	IfcAxis2Placement	Number
Elevation at entrance	10000 mm	IfcObjectPlacement	IfcAxis2Placement	Number
Top and bottom elevation for stair	7000 mm	IfcObjectPlacement	IfcAxis2Placement	Number
Top elevation retaining wall	11200 mm	IfcObjectPlacement	IfcAxis2Placement	Number
Dimensions				
Floor Area	5 m²	IfcElementQuantity	NetFloorArea	Number
Area	200 m²	IfcElementQuantity	NetArea	Number
Dimension	25 mm	Pset_PipeFittingTypeCommon Pset_PipeSegmentTypeCommon	NominalDiameter	Number

CONSTRUCTION ELEMENT SPECIFICATIONS
- for selected construction elements in building models

PROPERTIES

Revision 5

Property name	Example	Property Set	Standardized Property	Data Type
Dimension	150 mm	Pset_DuctFittingTypeCommon Pset_DuctSegmentTypeCommon	NominalDiameterOrWidth	Number
Dimension	60 mm	Pset_CableCarrierSegmentTypeCableLadderSegment Pset_CableCarrierSegmentTypeCableTraySegment Pset_CableCarrierSegmentTypeCableTrunkingSegment Pset_CableCarrierSegmentTypeConduitSegment Pset_DuctFittingTypeCommon Pset_DuctSegmentTypeCommon	NominalHeight	Number
Dimension	400 mm	Pset_CableCarrierSegmentTypeCableLadderSegment Pset_CableCarrierSegmentTypeCableTraySegment Pset_CableCarrierSegmentTypeCableTrunkingSegment Pset_CableCarrierSegmentTypeConduitSegment	NominalWidth	Number
Dimension	25 mm	Pset_PipeFittingTypeCommon Pset_PipeSegmentTypeCommon	InnerDiameter	Number
Dimension	32 mm	Pset_PipeFittingTypeCommon Pset_PipeSegmentTypeCommon	OuterDiameter	Number
Dimensions	1500x1500x110 mm	IfcRoot	Description	Text
Dimension of substrate	200 mm	IfcElementQuantity	NominalWidth	Number
Height	1000 mm	IfcElementQuantity	NominalHeight	Number
Overall height	2100 mm	IfcDoor IfcWindow	OverallHeight	Number
Overall width	1010 mm	IfcDoor IfcWindow	OverallWidth	Number
Width	1000 mm	IfcElementQuantity	NominalWidth	Number
Width (Openings)	150 mm	Profile	XDim	Number
Depth (Openings)	100 mm	IfcElementQuantity	NominalWidth	Number
Height (Openings)	150 mm	Profile	YDim	Number
Diameter (Openings)	200 mm	Profile	Diameter	Number
Length	1000 mm	IfcElementQuantity	NominalLength	Number
Length: Linear	1000 mm	IfcElementQuantity	NominalLength	Number
Thickness	200 mm	IfcElementQuantity	NominalWidth	Number
Insulation thickness (Object)	25 mm	Pset_CoveringTypeCommon	TotalThickness	Number
Insulation thickness (Reference)	25 mm	Add[1]_PipeSegmentTypeCommon	InsulationThickness	Number
Insulation thickness (Reference)	25 mm	Add[1]_DuctSegmentTypeCommon	InsulationThickness	Number
Fire and Acoustics				
Fire exit	True	Pset_DoorCommon Add[1]_SpaceCommon Add[1]_WindowCommon Pset_Common Pset_SpaceFireSafetyRequirements	FireExit	True/False
Firetechnical class[3]	EI30 A2-s1,d0	Pset_DoorCommon Pset_WindowCommon	FireRating	Text
Acoustic rating[3]	35	Pset_DoorCommon Pset_WindowCommon	AcousticRating	Text
Structural design				
Load bearing	True	Pset_BeamCommon Pset_SlabCommon Pset_ColumnCommon Pset_WallCommon Pset_MemberCommon Pset_PlateCommon	LoadBearing	True/False
Structural construction		Specificeres[2]	Specificeres	Text
Construction		Specificeres[2]	Specificeres	Text
Surface treatment	Hot dip galvanizing	Pset_ConcreteElementSurfaceFinishQuantityGeneral	ExternalSurfaceType	Text
Surface requirement	BO I-R	Pset_ConcreteElementSurfaceFinishQuantityGeneral	ExternalSurfaceClass	Text
Concrete compressive strength	30 MPA	Add[1]_MaterialConcrete	CompressiveStrength	Text

PROPERTIES

Property name	Example	Property Set	Standardized Property	Data Type
Steel grade	S355J0	IfcMaterial	Name	Text
Exposure class	XC4	Pset_ConcreteElementGeneral	EnvironmentalClass	Text
Maximum aggregate size	16 mm	Add[1]_MaterialConcrete	MaxAggregateSize	Number
Material	Steel	IfcMaterial	Name	Text
Installation				
Number of compartments	2	Pset_CableCarrierSegmentTypeCableTrunkingSegment	NumberOfCompartments	Number
Air direction		Pset_FlowTerminalAirTerminal	AirflowType	Text
Air volume	15 m³/h	Add[1]_AirTerminalOccurrence	AirFlowRate	Number
Other				
Contract	Y60	Add[1]_ElementCommon	SubcontractResource	Text
Hardware set	B1	Add[1]_DoorCommon	HardwareSet	Text
Discipline	Ventilation	Pset_OpeningElementCommon	Purpose	Text

Notes

[1] Insert IFC class corresponding to the buildingSMART propertyset for the selected IFC version. E.g.; Pset_BeamCommon or Pset_WallCommon. The EIR-BIM Specifications must specify which IFC-classes the property should be supplied for.

[2] Specify the structural composition of walls, floor assemblies, ceilings, roofs, furniture and fittings and/or specify the construction of walls, windows, doors and railings. An example of this could be that a specific wall consists of one objected with several layers or individual objects representing each layer.

[3] Pyrotechnical class and Acoustic rating are "reported" parameters. This means that data is provided by another consultant and that the is merely reported in the construction element. For the consultant who provide the services Fire and Acoustics according to the contract and division of services, delivery of data must conform with ABR18 §15 section 3.

CHANGE LOG CONSTRUCTION ELEMENT SPECIFICATIONS

Date	Changes
2022-03-18	Page 6: New construction element specification for glass / system walls Page 15: New construction element specification for recess and openings Page 35-37: Properties are updated and specified according to IFC2x3. Structural: Property "Environmental class" is changed to "Exposure class" according to Danish standards. Electrical: Properties on LOI200-400 are corrected according to the Danish version.