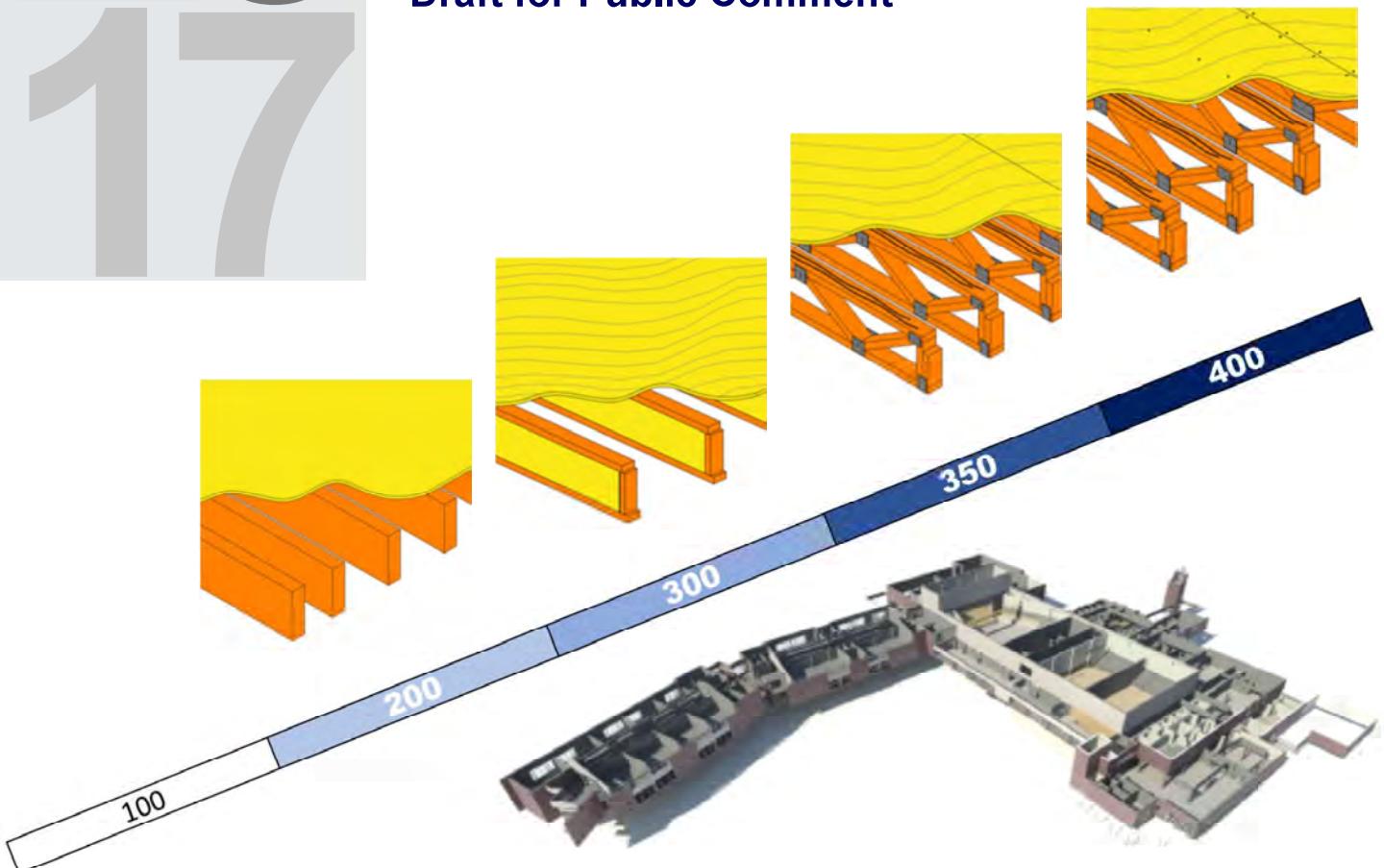


20 17

LEVEL OF
DEVELOPMENT
SPECIFICATION
October 03, 2017
Draft for Public Comment

BIMFORUM



Milestones/Deliverables

Model Elements		SD		DD		CD	Constr. Coord.	Fabrication

PARTICIPATING ORGANIZATIONS



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BIM-M
Building Information Modeling for Masonry

NATIONAL INSTITUTE OF STEEL DETAILING
NISD
Founded 1969

PCI Precast/Prestressed
Concrete Institute

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BUILDING DOCUMENTATION

LOD Spec 2017 Part I

Version: 2017

October 3, 2017

Draft for Public Comment

For Building Information Models

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EXECUTIVE SUMMARY

For a detailed guide on the use of this Specification see [LOD Spec Guide](#).

The *Level of Development (LOD) Specification* is a reference tool intended to improve the quality of communication among users of Building Information Models (BIMs) about the characteristics of elements in models. The *LOD Specification* expands upon the LOD schema developed by the American Institute of Architects (AIA) for its *E202-2009 BIM and Digital Data Exhibit* and updated for the AIA's *G202-2013 Project BIM Protocol Form*¹ by providing definitions and illustrations of BIM elements of different building systems at different stages of their development and use in the design and construction process.

Building Information Modeling presents information about a construction project or structure in the form of three-dimensional graphical representations of elements (e.g., doors, beams, etc.), which can be further associated with information about other characteristics of those elements. It is possible for the graphical representation of an element, taken alone, to suggest that greater accuracy or intention can be attributed to the element than is in fact the case. The AIA's LOD Schema was developed to provide a more systematic way of conveying the extent of reliance that may be placed on an element. Many participants in the design and construction process felt, however, that the industry would benefit from a more detailed treatment of the AIA's brief narrative definitions.

Discussions within the BIMForum led to the creation of a multi-disciplinary task force to develop and maintain the *LOD Specification*. The *LOD Specification* is an organized collection of interpretations of the AIA's LOD definitions describing input and information requirements and providing graphical examples of the different levels of development of a broad variety of building element classes.

Users of the *LOD Specification* are cautioned that it does not prescribe the necessary levels of development for different steps in the construction process. That determination is left to each project team. It is believed, however, that the availability of more precise definitions will reduce the risks of miscommunication among members of project teams when the expectations for different stages in the design and construction process are established, through easier identification of what each member of the team is expected to deliver and greater predictability of the level of effort that is required to create each member's deliverables.

The *LOD Specification* is organized by CSI Uniformat 2010⁴, with the subclasses expanded to Level 4 (and in a few cases to Level 5) to provide detail and clarity to the element definitions. The *LOD Specification* addresses only LOD 100 through LOD 400 of the AIA's LOD Schema, along with a new level – LOD 350 – which was added between LOD 300 and LOD 400 to better address the information levels required for effective trade coordination. The *LOD Specification* does not address LOD 500 since that LOD relates to field verification and is not an indication of progression to a higher level of geometry or information. See below for the Fundamental LOD Definitions.

The *LOD Specification* does not prescribe who the author of a particular component at a given LOD should be, as that will vary from one project to another. However, the document does provide a concise schematic means through the spreadsheet in Part II for a project team to identify model element authors, again in the interest of improving communication among model users. In addition, the *LOD Specification* task force has been working with software developers to provide a means within the software of tagging individual elements within a model with their current LOD level.

The *LOD Specification* is intended as a reference standard, but is also intended to evolve as the use of BIM develops. The Specification is updated annually, and previous versions are maintained on the BIMForum website (www.bimforum.org/lod). Users are invited to provide comments and recommendations for consideration in future editions. These should be sent by email to LOD@BIMForum.org.

¹ AIA Contract Document G202-2013, *Building Information Modeling Protocol Form* is part of a series of digital practice documents the AIA published in June 2013. This series consists of AIA E203™–2013, *Building Information Modeling and Digital Data Exhibit*, AIA G201™–2013, *Project Digital Data Protocol Form*, and AIA G202™–2013, *Project Building Information Modeling Protocol Form*. For general information on the documents and downloadable samples see www.aia.org/digitaldocs. For executable versions of the documents see <http://www.aia.org/contactdocs>.

⁴ UniFormat™ Numbers and Titles used in this publication are from UniFormat™, published by CSI and Construction Specifications Canada (CSC), and are used with permission from CSI. For a more in-depth explanation of UniFormat™ and its use in the construction industry visit <http://www.csinet.org> or contact CSI, 110 South Union Street, Suite 100, Alexandria, VA 22314. (800) 689-2900.

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CHANGES FROM 2016 VERSION

Note – Changes are indicated with a change bar in the left margin. Items such as grammar corrections, added Uniformat descriptions, added Masterformat references, added or upgraded graphics, minor corrections/additions, etc. are marked with a bar not detailed in this section.

General notes

Non-Graphic Information

All calls for non-graphic information have been deleted from Part I and addressed in Part II

"No-fly zones"

Where zones that are not to be penetrated by other elements are required by code, operational, or structural considerations (door swings, electrical panel access clearance, foundation element areas or bearing influence, etc.), an item has been added to LOD 300 definitions calling for the zones to be either modeled to facilitate clash detection or accommodated by model-checking software.

Opening Elements (doors, windows, etc.)

Existing LOD 350 calls for modeling of rough opening deleted, moved to definitions of walls, floors, and roofs.

Openings and Penetrations and Similar Elements

LOD 300 definitions have been adjusted to call for major openings such as windows, doors, and large mechanical elements to be modeled to nominal dimensions.

LOD 350 definitions have been adjusted to call for all penetrations to be modeled to rough opening dimensions.

Where elements such as MEP distribution components penetrate other elements such as walls, the existing LOD 350 calls for modeling of the penetration element itself (e.g. a sleeve) have been clarified.

Specific Changes

Introduction		The Introduction has been removed and provided in a separate document – <i>LOD Spec 2017 Guide</i> . This Document also includes white papers on use of the spec.
Executive Summary		Added
Fundamental LOD Definitions – LOD 300		Call for element location added
Uniformat	Omniclass	
N/A	36-51 73 11 13 11 19	Spaces – Added
N/A	36-51 73 11 13 17 11	Horizontal Grids – Added
N/A	36-51 73 11 13 17 13	Vertical Levels - Added
A10	21-01 10	Foundations – LOD 200. Provision for location added
A1020.10.10	21-01 10 20 20	Helical Piles and Piers – Added
A4010	21-01 40 10	Standard Slabs-on-Grade <ul style="list-style-type: none">• LOD 300. Provision for openings added• LOD 400. Provision for fully modeled rebar added

DRAFT
For Public Comment

B1020	21-02 10 20	Roof Construction – logic clarification added: <ul style="list-style-type: none">• If modeling roof as a single composite element including structure use B1020• If modeling individual layers as separate elements use:<ul style="list-style-type: none">◦ B1020.10 Roof Structural Frame◦ B1020.20 Roof Decks, Slabs, and Sheathing
B1020.20	21-02 10 20 20	Roof Decks, Slabs, and Sheathing – Detail added
B1080.70	21-02 10 80 70	Metal Walkways – Detail added
B2010	21-02 20 10	Exterior Walls – logic clarification added: <ul style="list-style-type: none">• If modeling wall as a single composite element use B2010• If modeling individual layers as separate elements use:<ul style="list-style-type: none">◦ B2010.10 Exterior Wall Veneer◦ B2010.20 Exterior Wall Construction◦ B2010.30 Exterior Wall Interior Skin
B2010	21-02 20 10	Exterior Walls – LOD 350. Requirement for hosted objects to be at LOD 350 deleted.
B2010.20.10	21-02 20 10 10	Exterior Wall Construction (Wood) – Previously B2010
B2010.20.20	21-02 20 10 20	Exterior Wall Construction (Cold-Form Metal Framing) – Previously B2010
B2010.20.30	21-02 20 10 20 30	Exterior Wall Construction (Masonry) – Previously B2010
B2010.20.40	21-02 20 10 20 40	Exterior Wall Construction (Concrete) – Previously B2010
B2010.30	21-02 20 10 30	Exterior Wall Interior Skin <ul style="list-style-type: none">• LOD 100 – Changed to N/A• LOD 200 – Detail added• LOD 300 – Detail added
B2020.30	21-02 20 20 30	Exterior Window Wall – LOD 300. “Structural support systems of wall to be modeled” deleted – addressed in wall element definitions
B3010	21-02 30 10	Roofing – Detail added
G1070.10	21-07 10 70 10	Grading – Added
N/A	23-13 23 11	Mechanical Fasteners – Added
N/A	23-13 31 17	Formwork - Added

UPDATES OF THIS DOCUMENT

While this document is intended as a reference that can be cited in agreements such as contracts and BIM execution plans, it is recognized that the use of BIM in design and construction is evolving. To accommodate this evolution this document will be updated periodically in clearly identifiable versions. A project can adopt a specific version and then has the option to remain with that version or update if a new version is published. Initially the target update frequency is annually, but that may change in the future. In addition, interim updates may be issued if needed.

Revision History

10/03/17	Level of Development Specification 2017 DRAFT FOR PUBLIC COMMENT	
10/17/16	Level of Development Specification 2016	
08/25/16	Level of Development Specification 2016 DRAFT FOR PUBLIC COMMENT	Definitions have not been changed except for minor grammatical corrections and formatting. Engineered metal building structures, precast concrete, highway and rail road bridge content moved from Appendix to main body.
10/30/15	Level of Development Specification 2015	Definitions have not been changed except for minor grammatical corrections and formatting. New content released as an Appendix to Part A for engineered metal building structures, precast concrete, highway bridge content and rail road bridge content.
4/30/15	Level of Development Specification 2015 DRAFT FOR PUBLIC COMMENT	Definitions have not been changed except for minor grammatical corrections and formatting. Part B, Model Element Table, and Attribute Tables were added.
12/30/14	Level of Development Specification 2014	Definitions have not been changed except for minor grammatical corrections and formatting. Images and image notes have been added in <i>blue italics font</i> .
8/22/13	Level of Development Specification 2013	
4/24/13	Initial draft for public review	

Revision Process

Public Comment

Each new version is first released as a draft for public comment. Feedback is evaluated and resolved prior to the publishing of the official version.

Appendix

An increasing number of professional organizations are adopting this Specification and providing additional content relating to their domains. To accommodate information that becomes available after the public-comment release but prior to the final release, content is developed in collaboration with industry organizations and leading expert practitioners, and then vetted by the LOD working group. This content is released as an Appendix to Part A and as additional identified Attribute Table tabs in Part B. The new content is then integrated into the next public comment draft.

LOD 100

The Model Element may be graphically represented in the Model with a symbol or other generic representation, but does not satisfy the requirements for LOD 200. Information related to the Model Element (i.e. cost per square foot, tonnage of HVAC, etc.) can be derived from other Model Elements.

BIMForum Interpretation: LOD 100 elements are not geometric representations. Examples are information attached to other model elements or symbols showing the existence of a component but not its shape, size, or precise location. Any information derived from LOD 100 elements must be considered approximate.

Uniform Omniclass

D50 21-04 50 Electrical

Associated Masterformat Sections: 26 00 00 / 01 86 26

100	Diagrammatic or schematic model elements: conceptual and/or schematic layout;	
-----	--	--

D5010 21-04 50 10 Facility Power Generation

Includes: Power Generation Supplementary Components as appropriate.

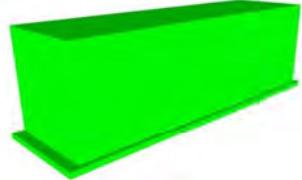
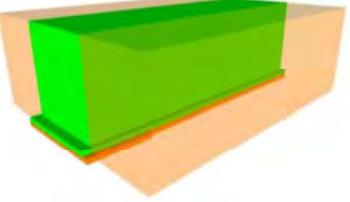
Associated Masterformat Sections: 01 86 26

100	See D50	
200	Schematic layout with approximate size, shape, and location of equipment;	

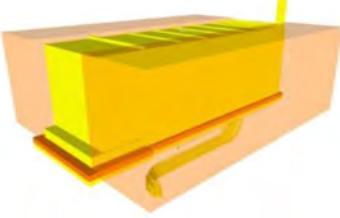
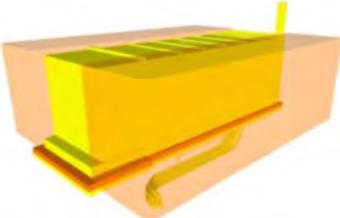
D5010.10 21-04 50 10 10 Packaged Generator Assemblies

Includes: Generator, frequency changers, and rotary converters and uninterruptible power units.

Associated Masterformat Sections: 26 32 00 / 26 32 13 / 26 32 16 / 26 32 19 / 26 32 23 /
26 32 26 / 26 32 29 / 26 32 33

100	See D50	
200	See D5010	 180 D5010.10-LOD-200 Packaged Generator Assemblies
300	Modeled as design-specified size, shape, spacing, and location of equipment and associated components; approximate allowances for spacing and clearances required for all specified supports and seismic control; access/code clearance requirements modeled.	 181 D5010.10-LOD-300 Packaged Generator Assemblies

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350	Modeled as actual size, shape, spacing, and location of equipment and associated components; actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads. actual access/code clearance requirements modeled.	 <i>182 D5010.10-LOD-350 Packaged Generator Assemblies</i>
400	Supplementary components added to the model required for fabrication and field installation.	 <i>183 D5010.10-LOD-400 Packaged Generator Assemblies</i>

D5010.20 21-04 50 10 20 Battery Equipment

Includes: Batteries, battery racks, battery chargers, static power converters, uninterruptible power supplies, and accessories.

Associated Masterformat Sections: 26 33 00 / 26 33 13 / 26 33 16 / 26 33 19 / 26 33 23 /
26 33 33 / 26 33 43 / 26 33 46 / 26 33 53

[See [D5010.10](#)]

D5010.30 21-04 50 10 30 Photovoltaic Collectors

Includes: Solar cells to convert sunlight to electricity.

Associated Masterformat Sections: 26 31 00

[See [D5010.10](#)]

D5010.40 21-04 50 10 40 Fuel Cells

Includes: Fuel cell electricity generating equipment.

Associated Masterformat Sections: 48 18 00

[See [D5010.10](#)]

D5010.60 21-04 5010 60 Power Filtering and Conditioning

TBD

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D5010.70 21-04 50 10 70 Transfer Switches

Includes: Switches that transfer from one source of electricity to another.

Associated Masterformat Sections: 26 36 00

[See [D5010.10](#)]

D5010.90 21-05 50 10 90 Facility Power Generation Supplementary Components TBD

D5020 21-04 50 20 Electrical Service and Distribution

Includes: Electrical Service and Distribution Supplementary Components as appropriate.

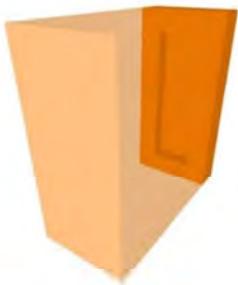
Associated Masterformat Sections: 01 86 26

100	See D50	
200	Schematic layout with approximate size, shape, and location of equipment;	

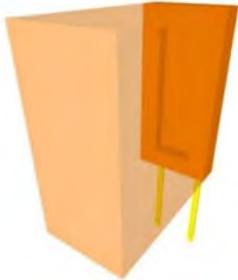
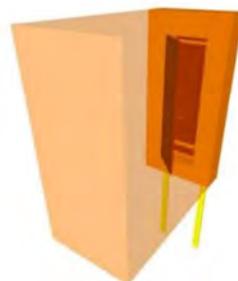
D5020.10 21-04 50 20 10 Electrical Service Entrance

Includes: Meters, substations, transformers, switchgear, switchboards, and protective devices where electrical power enters structure.

Associated Masterformat Sections: 26 21 00 / 26 16 00 / 26 11 00 / 26 12 00 / 26 22 00 /
26 13 00 / 22 23 00 / 26 18 00 / 22 28 00

100	See D50	
200	See D5020	
300	Modeled as design-specified size, shape, spacing, and location of equipment and associated components; approximate allowances for spacing and clearances required for all specified supports and seismic control; access/code clearance requirements modeled.	 184 D5020.10-LOD-300 Electrical Service Entrance

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350	Modeled as actual size, shape, spacing, and location of equipment and associated components; actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads. actual access/code clearance requirements modeled.	 <i>185 D5020.10-LOD-350 Electrical Service Entrance</i>
400	Supplementary components added to the model required for fabrication and field installation.	 <i>186 D5020.10-LOD-400 Electrical Service Entrance</i>

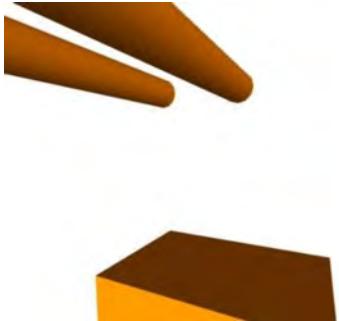
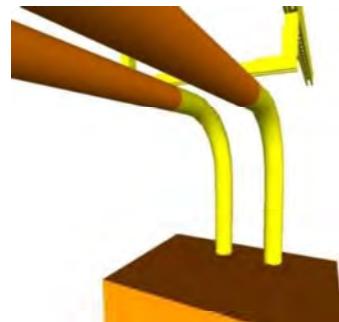
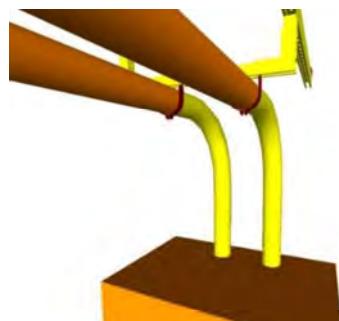
D5020.30 21-04 50 20 30 Power Distribution

Includes: Bus assemblies, distribution equipment, and electrical wiring system to distribute electrical power to switchboards, panelboards, and motor control centers.

Associated Masterformat Sections: 26 20 00 / 26 24 00 / 26 24 13 / 26 24 16 / 26 24 19 / 26 25 00 / 26 27 00 / 26 27 16 / 26 05 33 / 26 05 43 / 26 05 36 / 26 05 13

100	See D50	
200	See D5020	

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300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures, and equipment; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; access/code clearance requirements modeled.	 <i>187 D5020.30-LOD-300 Power Distribution</i>
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, and enclosures; actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads; actual floor and wall penetration elements are modeled. actual access/code clearance requirements modeled.	 <i>188 D5020.30-LOD-350 Power Distribution</i>
400	Supplementary components added to the model required for fabrication and field installation.	 <i>189 D5020.30-LOD-400 Power Distribution</i>

D5020.70 21-04 50 20 70 Facility Grounding

Includes: Raceways, wiring and devices for grounding and bonding an electrical distribution system.

Associated Masterformat Sections: 26 05 26 / 26 05 33 / 26 05 13

Uniform Omniclass

100	See D50	
200	See D5020	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures, and the electrical equipment and end-devices served; approximate allowances for spacing and clearances required for all specified hangers, supports, and seismic control; access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, enclosures, and the electrical equipment and end-devices served; actual size, shape, spacing, and location for supports and seismic control; actual floor and wall penetration elements are modeled. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5020.90 21-04 50 20 90 Electrical Service and Distribution Supplementary Components TBD

D5030 21-04 50 30 General Purpose Electrical Power

Includes: General Purpose Electrical Power Supplementary Components as appropriate.

Associated Masterformat Sections: 01 86 26

100	See D50	
200	Schematic layout with approximate size, shape, and location of equipment;	

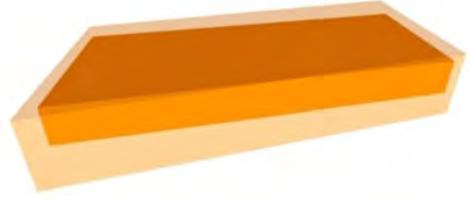
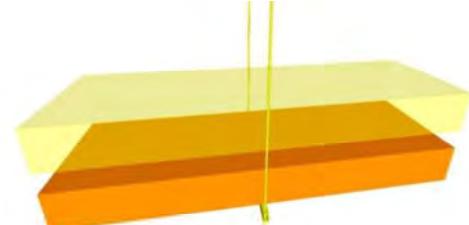
D5030.10 21-04 50 30 10 Branch Wiring System

Includes: Raceways, ducts, cable trays, and wiring to deliver power from branch panelboards to the point of use.

Associated Masterformat Sections: 26 05 33 / 26 05 43 / 26 05 36 / 26 05 19

100	See D50	
200	See D5030	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, and enclosures; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control;	

Uniform Omniclass

	access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, enclosures; actual size, shape, spacing, and location for supports and seismic control; actual floor and wall penetration elements are modeled. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5030.50 21-04 50 30 50 Wiring Devices

Includes: Electrical devices at point of use including electrical outlets and switches.

Associated Masterformat Sections: 26 27 26

100	See D50	
200	See D5030	
300	Modeled as design-specified size, shape, spacing, and location of outlet boxes and devices; access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of outlet boxes and devices. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

Uniform Omniclass

D5030.90 21-04 50 30 90 General Purpose Electrical Power Supplementary Components TBD

D5040 21-04 50 40 Lighting

Includes: Lighting Supplementary Components as appropriate.

Associated Masterformat Sections: 26 50 00 / 01 86 26

100	See D50	
200	Schematic layout with approximate size, shape, and location of equipment;	

D5040.10 21-04 50 40 10 Lighting Control

Includes: Clock and calendar, photoelectric switches, occupancy sensors, and light-leveling control devices.

Associated Masterformat Sections: 26 09 23 / 26 09 26 / 26 09 33 / 26 09 36 / 26 09 43 / 26 09 61

100	See D50	
200	See D5040	
300	Modeled as design-specified size, shape, spacing, and location of enclosures, equipment, and devices; access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of enclosures, equipment, and control devices; actual size, shape, and location/connections of equipment and control devices. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5040.20 21-04 50 40 20 Branch Wiring for Lighting

Includes: Raceways, ducts, cable trays, and wiring beyond branch circuit panelboards to lighting fixtures.

Associated Masterformat Sections: 26 05 33 / 26 05 43 / 26 05 36 / 26 05 19 / 26 27 26

100	See D50	
200	See D5040	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, and enclosures to fixture locations;	



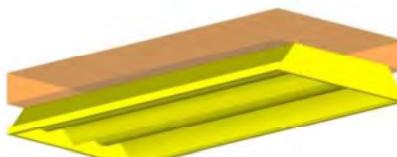
Uniform Omniclass

	approximate allowances for spacing and clearances required for all specified hangers, supports, and seismic control. access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, and enclosures to fixture locations; actual size, shape, spacing, and location for supports and seismic control; actual floor and wall penetration elements are modeled. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5040.50 21-04 50 40 50 Lighting Fixtures

Includes: Luminaires, lighting equipment, ballasts, and accessories. Includes fluorescent, high intensity discharge, incandescent, mercury vapor, neon, and sodium vapor lighting.

Associated Masterformat Sections: 26 50 00 / 26 51 00 / 26 52 00 / 26 53 00 / 26 54 00 /
26 55 00 / 26 55 23 / 26 55 29 / 26 55 33 / 26 55 36 / 26 55 39 / 26 55 53 / 26 55 59 /
26 55 61 / 26 55 63 / 26 55 70

100	See D50	
200	See D5040	
300	Modeled as design-specified size, shape, spacing, and location of lighting fixtures; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; access/code clearance requirements modeled.	 192 D5040.50-LOD-300 Lighting Fixtures
350	Modeled as actual size, shape, spacing, and location of lighting fixtures. actual size, shape, spacing, and location for supports and seismic control. actual access/code clearance requirements modeled.	 193 D5040.50-LOD-350 Lighting Fixtures
400	Supplementary components added to the model required for fabrication and field installation.	

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D5040.90 21-04 50 40 90 Lighting Supplementary Components TBD

D5080 21-04 50 80 Miscellaneous Electrical Systems

Includes: Miscellaneous Electrical Systems Supplementary Components as appropriate.

Associated Masterformat Sections:

100	See D50	
200	Schematic layout with approximate size, shape, and location of equipment;	

D5080.10 21-04 50 80 10 Lightning Protection

Includes: Wiring and equipment for lightning protection.

Associated Masterformat Sections: 26 41 00 / 01 86 26 / 26 41 13 / 26 41 16 / 26 41 19 / 26 41 23

100	See D50	
200	See D5080	
300	Modeled as design-specified size, shape, spacing, and location of raceways, boxes, enclosures including the electrical equipment and end-devices served; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of raceways, boxes, enclosures including the electrical equipment, fixtures, and end-devices served actual size, shape, spacing, and location for supports and seismic control; actual size, shape, and location/connections of equipment and support structure/pads; actual floor and wall penetration elements are modeled. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5080.40 21-04 50 80 40 Cathodic Protection TBD

D5080.70 21-04 50 80 70 Transient Voltage Suppression

Includes: Devices to protect against voltage surges on electrical distribution systems.

Uniform Omniclass

Associated Masterformat Sections: 26 43 00

100	See D50	
200	See D5080	
300	Modeled as design-specified size, shape, spacing, and location of equipment; approximate allowances for spacing and clearances required for all specified hangers, supports and seismic control; access/code clearance requirements modeled.	
350	Modeled as actual size, shape, spacing, and location of the equipment; actual size, shape, spacing, and location for supports and seismic control. actual access/code clearance requirements modeled.	
400	Supplementary components added to the model required for fabrication and field installation.	

D5080.90 21-04 50 80 90 Miscellaneous Electrical Systems Supplementary Components TBD

D60 21-04 60 Communications

Associated Masterformat Sections: 27 00 00 / 01 86 29

[See [Fundamental LOD Definitions](#)]

D6010 21-04 60 10 Data Communications

Includes: Communications Supplementary Components as appropriate.

Associated Masterformat Sections: 27 20 00 / 01 86 29

[See [Fundamental LOD Definitions](#)]

D6010.10 21-04 60 10 10 Data Communications Network Equipment TBD

D6010.20 21-04 60 10 20 Data Communications Hardware TBD

D6010.30 21-04 60 10 30 Data Communications Peripheral Data Equipment TBD

D6020 21-04 60 20 Voice Communications

Includes: Communications Supplementary Components as appropriate.

Associated Masterformat Sections: 27 30 00 / 01 86 29

Uniform Omniclass

[See [Fundamental LOD Definitions](#)]

D6030 21-04 60 30 Audio-Video Communication

Includes: Communications Supplementary Components as appropriate.

Associated Masterformat Sections: 27 40 00 / 01 86 29

[See [Fundamental LOD Definitions](#)]

D6060 21-04 60 60 Distributed Communications and Monitoring

Includes: Communications Supplementary Components as appropriate.

Associated Masterformat Sections: 27 50 00 / 01 86 29

[See [Fundamental LOD Definitions](#)]

D6090 21-04 60 90 Communications Supplementary Components

[See [Fundamental LOD Definitions](#)]

D70 21-04 70 Electronic Safety and Security

Associated Masterformat Sections: 28 00 00 / 01 86 33

[See [Fundamental LOD Definitions](#)]

D7010 21-04 70 10 Access Control and Intrusion Detection

Includes: Electronic Safety and Security Supplementary Components as appropriate.

Associated Masterformat Sections: 28 10 00 / 01 86 33

[See [Fundamental LOD Definitions](#)]

D7030 21-04 70 30 Electronic Surveillance

Includes: Equipment for detecting and controlling access by persons to a facility site, building, or within a building. Includes Electronic Safety and Security Supplementary Components as appropriate.

Associated Masterformat Sections: 28 20 00 / 01 86 33

[See [Fundamental LOD Definitions](#)]

D7050 21-04 70 50 Detection and Alarm

Includes: Equipment for detecting hazardous conditions in a building or on a facility site and communicating an alarm signal. Includes alarm devices, detection devices, safety switches, and associated items. Includes Electronic Safety and Security Supplementary Components as appropriate.

Associated Masterformat Sections: 28 30 00 / 01 86 33

D7070 21-04 70 70 Electronic Monitoring and Control

Includes: Electronic Safety and Security Supplementary Components as appropriate.

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Associated Masterformat Sections: 28 46 00 / 01 86 33

D7090 21-04 70 90 Electronic Safety and Security Supplementary Components

These components are typically modeled as part of other assemblies listed in the tables above. Do not assign this Uniformat classification unless a supplementary component is modeled independently of another assembly.

Associated Masterformat Sections:

D80 21-04 80 Integrated Automation

Associated Masterformat Sections: 25 00 00 / 01 86 23

[See [Fundamental LOD Definitions](#)]

D8010 21-04 80 10 Integrated Automation Facility Controls

Includes: Hardware and/or software that allows the building automation system to monitor and control other facility equipment and systems. Includes Integrated Automation Supplementary Components as appropriate.

Associated Masterformat Sections: 25 50 00 / 01 86 23

[See [Fundamental LOD Definitions](#)]