



Construction Specifications

Foreman's Development Series

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Objectives

To become familiar with a set of Construction Specifications

- Layout and Format
- Terms and Definitions used and their legal ramifications
- Examine the important sections that you, the Foreman, will need to look at when you start a project

Drawings & Specifications

- Both the Drawings and the Specifications are complimentary in nature.
 - The intent here is that they carry equal weight when interpreting the contract requirements.
- The Drawings are pictorial and graphic in nature.
- The Specifications are written instructions describing the work that is to be performed and how the Contract will be administered.
- In the movie presentation of a story;
 - The video portion would be the drawings
 - The specifications would be the sound track.
 - Both are required to understand the story.

What are Specifications?

“An explicit set of requirements that must be satisfied by a material, a product or a service.”

- The scope of “The Work” is given here.
- The type and quality of materials required for all of the trades are spelled out.

CSI

Without
MasterFormat,
construction would
collapse under
information overload
and you wouldn't be
able to find anything!



1995 MasterFormat

- Last updated in 1995 the “original” MasterFormat had a 5 digit and 16 Division numbering system
- Electrical work was found in Division #16

2004 MasterFormat

- In 2004 CSI expanded their MasterFormat to a 6 digit, 50 Division numbering system
- Electrical = Division 26

MasterFormat 2004 Structure

Procurement and Contracting Requirements Group

Procurement and Contracting Requirements:
Division 00

Specifications Group

General Requirements Subgroup: Division 01

Facility Construction Subgroup: Divisions 02 - 19

Facility Services Subgroup: Divisions 20 - 29

Site and Infrastructure Subgroup: Divisions 30 - 39

Process Equipment Subgroup: Divisions 40 - 49

Facility Construction Subgroup

The 1st Sub Group is called **General Requirements**

2nd Sub Group – Facility Construction / Divisions 2-14

- **02** Existing Conditions
- **03** Concrete
- **04** Masonry
- **05** Metals
- **06** Wood, Plastics, and Composites
- **07** Thermal and Moisture Protection
- **08** Openings
- **09** Finishes
- **10** Specialties
- **11** Equipment
- **12** Furnishings
- **13** Special Construction
- **14** Conveying Equipment
- **15-19** Reserved

Facility Services Subgroup:

20 Reserved

21 Fire Suppression

22 Plumbing

23 Heating, Ventilating
and Air Conditioning

24 Reserved

25 Integrated
Automation

26 Electrical

27 Communications

28 Electronic Safety
and Security

29 Reserved

Site and Infrastructure Subgroup

30 Reserved

31 Earthwork

32 Exterior

Improvements

33 Utilities

34 Transportation

**35 Waterway and
Marine**

36-39 Reserved

Process Equipment Subgroup

40 Process Integration

41 Material Processing and Handling Equipment

42 Process Heating, Cooling and Drying Equipment

43 Process Gas and Liquid Handling, Purification and Storage Equipment

44 Pollution and Waste Control Equipment

45 Industry Specific Manufacturing Equipment

46 Water and Wastewater Equipment

47 Reserved

48 Electrical Power Generation

49 Reserved

Sections

- Each **Division** is broken into **Sections**.
- 2004 Section numbers are **6 digits long**.
- Each Section is always divided into three distinct areas:
 - **Part 1 – General / Scope of work**
 - **Part 2 - Products.**
 - **Part 3 -Execution**

Division 26, 27 and 28

- Div. 26 – Electrical
- Div. 27 – Communications
- Div. 28 - Electronic Safety and Security
 - What is 26 56 19?
 - What is 26 41 13?

Specification Activity #1

Divisions #1 – 25

- Using the Specification Book provided, find the answers to each question that your Instructor gives you.
 - **Be sure to note the spec section where the answer was found!**

Important Definitions & Terminology

- Furnish, Install, and Provide
- Notice to Proceed
- General Conditions
- Supplementary Conditions

Exculpatory Clauses

- Exculpatory clauses are designed to release one party from blame if something goes wrong, even if that party was negligent.
- In Construction this represents an attempt by the Owner to avoid the impact of errors or omissions in the Specifications.
- May or may not hold up in a Court of Law.

Unenforceable Terms

Specification Language that has no Enforceable meaning??

- Terms that can mean different things to different people and therefore have no legal meaning at all.

Design Professional Liabilities?

If the Architect or the Electrical Engineer makes a mistake in their design and someone is hurt or it costs a lot of money to fix:

- Are they liable for their errors and omissions?
- Can they be sued?

It Depends - but probably not!

Order of Precedence

- 1) Anything mentioned in the Specifications and not shown on the Drawings, -or- shown on the Drawings and not mentioned in the Specs shall be considered as if they are mentioned in both.
- 2) In the case of a difference between the Drawings and Specifications; the Specifications shall govern.

The Hierarchy of Information

In Order of Precedence:

- 1) The Contract between the Owner and GC.
- 2) Bid Addendums
- 3) Specifications
 - a. Detailed Spec supersedes a General Spec.
- 4) Drawings

On the Drawings:

- 1) Structural Drawings supersede the Architectural Drawings.
- 2) Large Scale Drawings supersede smaller scaled plans or sections.
- 3) Written directions or notes on the drawings take precedence over the graphic illustrations.
- 4) Written dimensions rule over dimensions scaled off the prints.

Errors, Conflicts and Omissions

There will never be a set of Plans or Specifications without mistakes.

- An **Error** is any mistake or inaccuracy in the contract documents that can affect the construction of the work.
- An **Ambiguity** occurs if there is more than one reasonable interpretation of the plans or specs.
- A **Conflict** is when two of the Contract Drawings or the Specs and Drawings disagree. Which detail are you supposed to use?
- An **Omission** is:
 - 1) Where a detail is shown on a drawing but the specs don't mention this work at all –or-
 - 2) Where the specifications explain this work but this work is not shown anywhere on the plans

What do the Specs Say?

Conflicts:

- “Should a conflict occur between drawings and a specification, the contractor is deemed to have estimated the more expensive way of doing the work and shall so provide.”

Omissions:

- “If something is shown on the drawings but is not in the specifications – it is part of your contract”.
- *“If something is specified in the specifications but is not shown on the drawings—it is part of your contract.”*

NEIS

- **NEIS** – NECA’s “National Electrical Installation Standards”
- What is “ Good Workmanship”?
- National Electrical Code Article 110-12
 - Requires “Neat and Workmanship-like manner”
 - The informational note here refers us to NECA 1 - 2015

Review your Specifications???

- Are you costing your Contractor money if you read the specs?
- Beware of “Canned Specifications” or “Cut and Paste”.

Read your Specs!

What Things to Look For?

- Read and highlight important information.
- Share information with Journeymen, etc.

Specification Activity #2

Div. #26 - 28

- Using the Specification Book provided, find the answers to each of the questions your Instructor will give you.
 - **Be sure to note the spec section where the answer was found!**

Summary

- Construction Specifications can be a very large and complicated set of documents.
- The legal terms and definitions found in the Specifications all have an impact.

Find the time to read and highlight your Specifications!

- Pass this information along to the workers in the field.