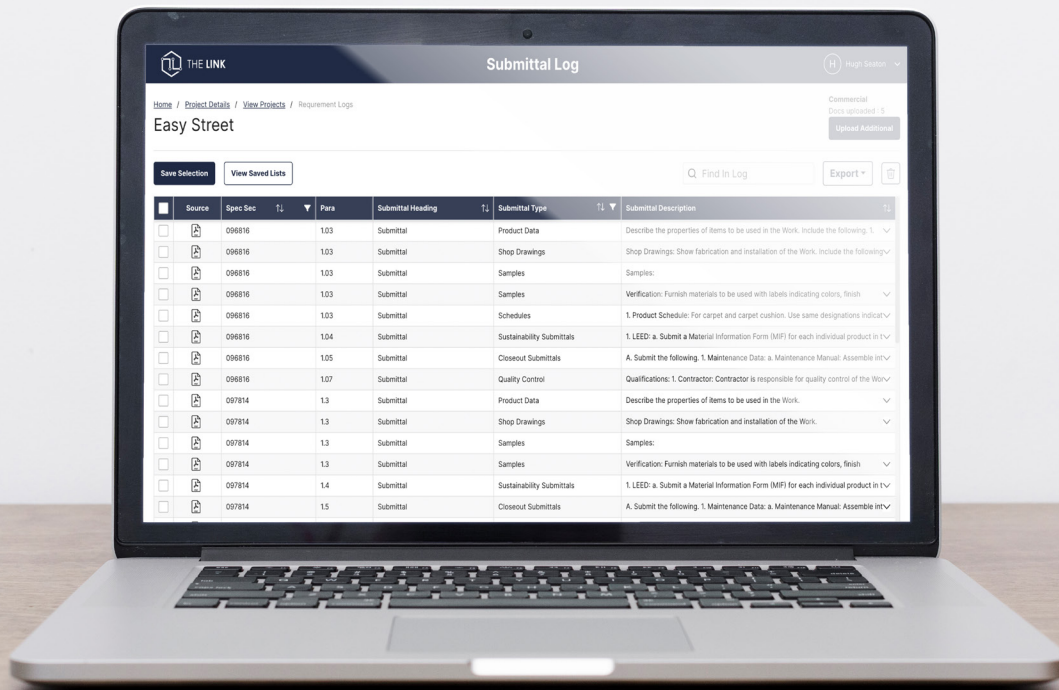


THE LINK



Construction Specifications

What Field Teams Need to Know

Who this is for

This short primer is for construction project teams, both general contractors and trade contractors, who interact with specifications and are responsible for executing against them. We designed The Link to make specs consumable for the field, and provide this high level overview for those instances when The Link isn't there to help out.

What are specifications?

Construction specifications are part of the project manual, along with the contract and drawings. Where the contract(s) specify how the owner, AE firm and contractor do business with each other, specifications provide the details on what is to be built, and drawings provide how many of various items are to be installed or fabricated, and where.

Specifications are long documents, often in the thousands of pages, written by the AE firm to satisfy their contractual obligations. Specifications are legal documents, and they contain what is to be installed, how it is to be inspected, sometimes installation requirements and other key information required to safely and successfully put work in place.

(For those interested in truly mastering specs and the documents they're a part of, CSI's [Construction Documents Technology \(CDT\)](#) certification is a good way to go even further.)

Why This Matters, Part 1

This matters because much of what a contractor is held accountable for is in the specifications, things like:

- 1 What products are to be installed
- 2 What building features are to be fabricated
- 3 How those products & features are to be tested
- 4 Standards for testing
- 5 Standards for reporting
- 6 Meeting requirements
- 7 Mockups, samples and other quality representations to owners

...and dozens of other details that cause claims & lawsuits when they get missed

The three “generals”

In most construction project manuals, there are three levels of ‘general’ provisions. The contract itself will stipulate ‘general conditions,’ while CSI division 01 is general requirements, and each specification document has a ‘general’ section. [consider a graphic]

These three are a hierarchy, with each handling a different scope. The contract deals with the business relationship at the highest level. Division 1 is focused on administering the project, and the general section in a given spec is focused on that spec only, often referring back to Division 1 for more general points, like administrative requirements and closeouts, for example.

While you should be aware of what’s in the main contract, many of the detailed requirements are to be found in Division 1 and the general section of a given specification section. It is definitely worth really looking at the Division 1 part of the spec to see if there’s anything unusual or unexpected, as this will carry over the whole job, and is short enough to go through a few times without burning too many hours.

What’s in a spec?

In the US, there are a few major formats specs will follow. Here we’ll focus on commercial and the Unified Facility Guide Specification (UFGS).

Commercial Specifications

Commercial specifications follow the standards and formats created by the Construction Specifications Institute (CSI). A complete specification will be divided into “spec sections,” that are defined by CSI’s MasterFormat®, a classification system that describes what are known as work results. We describe Masterformat numbers & titles below.

Within a spec section, an individual specification will be divided into three parts: “General,” “Product,” and “Execution.” Every spec will have all three of these, they help you know where to look for different types of information. Here’s an idea of what’s in each:

General:

- ✓ Summary of what’s to be installed
- ✓ Items that might be a clarification or further refinement of the main contract:
 - Payment procedures (where relevant)
 - Admin requirements
 - Submittals (Action, information, closeout)
 - Site conditions
 - Bonding

Product:

- ✓ Owner furnished products
- ✓ List of Products (items, components, etc)
- ✓ Source quality control

Execution:

- ✓ Installers
- ✓ Examination – testing
- ✓ Preparation (usually of the place where work is installed)
- ✓ Pre-installation
- ✓ Site QC (inspections, what to do about non-conforming work)
- ✓ System startup & adjustment
- ✓ Cleaning
- ✓ Closeout

An actual spec section won't have all of those items, as some won't be relevant for a given product or work result. And you will find items not in the list above, when specific tests, standards or other factors are important for successful installation of a given item. The above is provided as a good starting point.

Military/Gov't Specs: UFGS

The UFGS is used by the Army Corps of Engineers, Military and government, and is significantly different from CSI formats. UFGS still uses MasterFormat to divide projects into spec sections, but within spec sections the organization is very different, in the following key ways:

1

UFGS does not follow the three part spec format above

2

All standards & codes that are relevant to that spec section collected in one place

3

Submittals & Requirements are listed according to "SD" designations:

- SD-01 Preconstruction Submittals
- SD-02 Shop Drawings
- SD-03 Product Data Copies
- SD-04 Samples
- SD-05 Design Data Copies
- SD-06 Test Report Copies
- SD-07 Certificate Copies
- SD-08 Manufacturer's Instructions Copies
- SD-09 Manufacturer's Field Report Copies
- SD-10 Operation and Maintenance Data Copies
- You get the idea...

What's not in a spec?

Specifications are paired with drawings, and each plays a different role. Drawings are about numbers – which is why you use drawings, not specs, for quantity takeoffs. Specifications are about what is to be installed, and what results are expected of the work, but specs do not include how many of those work results are required.

Similarly, a spec does not tell you where work results need to happen, that's what drawings and BIM models do.

A point of confusion is that specs do not tell you how to build, and in fact are often missing detail that would be helpful, in part because specifiers and architects are incentivized by many contract structures to avoid taking on responsibility for field execution of the specs. As we note above, the "execution" section in the specs is more about what not to do.

What's MasterFormat?

MasterFormat is the classification standard used across the construction industry for building products and work results, and is published & maintained by CSI. MasterFormat is very often required by general conditions, and almost all commercial & industrial specs use it to organize everything from specs to submittals to buyout and even accounting codes. MasterFormat refreshes about once every two years, with minor additions and error corrections.

A MasterFormat number typically has three "levels," each of which has two digits. At the top level is the division, which is a big category like "concrete" (Division 03), or "openings" (Division 08). There are 50 possible divisions, but only 35 currently being used. These divisions are organized into four groups:

- ✔ Facility Construction subgroup (Divisions 02-19)
- ✔ Facility Services Subgroup (Divisions 20-29)
- ✔ Site & Infrastructure Subgroup (Divisions 30-39)
- ✔ Process Equipment Subgroup (Divisions 40-49)

Below the Divisions are two further levels, each designated by two digits. An example of a number & title would be 03 41 23 Precast Concrete Stairs.

- ✔ Here 03 is concrete (the division)
- ✔ 03 40 is precast concrete (where the "4" is precast)
- ✔ 03 41 is precast structural concrete (where the "41" is a subgroup of "4")
- ✔ 03 41 23 is precast concrete stairs builds on the categories above and lands on a specific work result.

MasterFormat Structure

Division (Top Level)

- ├── 03 - Concrete
- ├── 03 40 - Precast Concrete (Second Level)
- ├── 03 41 - Precast Structural Concrete (Third Level)
- ├── 03 41 23 - Precast Concrete Stairs (Fourth Level)

In addition to MasterFormat, CSI maintains UniFormat® and OmniClass®, each of which are also used to classify things in construction. UniFormat is focused on parts of the building, and is used for schematic design, estimating, and facilities management. OmniClass has multiple tables, including one for MasterFormat and UniFormat, and is often used in BIM modeling. This means that, though field teams primarily use MasterFormat, you can often translate MasterFormat numbers directly into OmniClass, should that ever come up.

What this all means for construction field teams

Specifications are paired with drawings, and each plays a different role. Drawings are about numbers – which is why you use drawings, not specs, for quantity takeoffs. Specifications are about what is to be installed, and what results are expected of the work, but specs do not include how many of those work results are required.

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