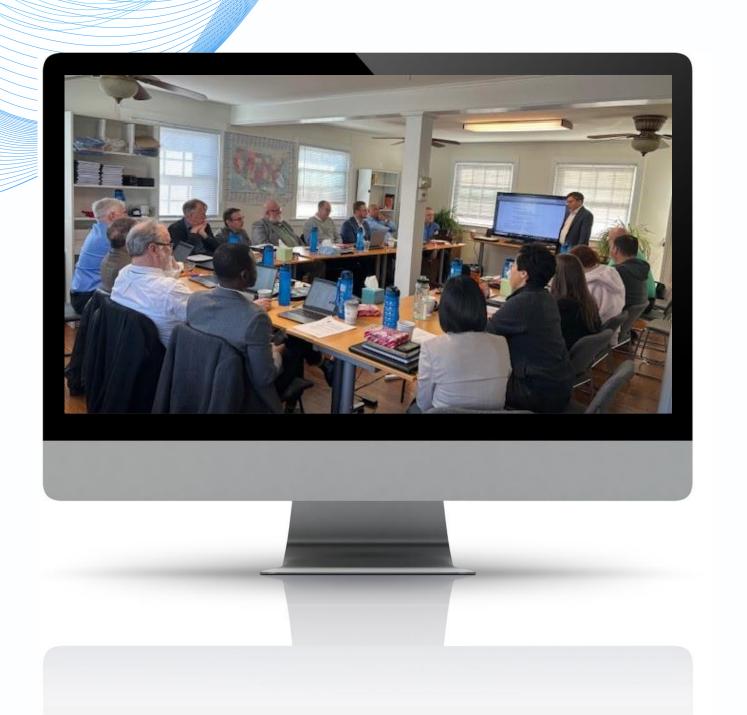
CON SPEC TUS

CONSTRUCTION SPECIFICATION WRITING STUDY SESSION





WHO IS CONSPECTUS?

Conspectus, Inc. is a national specification consultancy, employing 16 specifiers, providing high quality, <u>industry-leading specifications</u> and related consulting services on thousands of projects for some of the most prestigious design and engineering firms, government agencies, and private entities domestically and internationally.



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KNOWLEDGE AREAS

Domains:

```
1 9/12 Planning, Development & Organization
```

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4 9/19 Research
```

2 09/26 Coordination

6 10/03 Production, Part 1

6 10/10 Production, Part 2

3 10/24 Procurement

5 10/31 Analysis



ITEMS TO NOTE



GENERAL FYI

- No CDT[®] certification highly advisable to also read
 Project Delivery Practice Guide (PDPG).
- Yes CDT[®] certification brush up on the PDPG.
- Exam is based on CSI® Construction Specifications
 Practice Guide (CSPG) content, and may not always reflect the real world; we will note items which may not align.
- Those who wrote the CSPG are not the same as the exam writers; study guides have divided the source material read the entire book.
- We encourage interaction in the chat and will also provide time for Q&A at the end of each session.



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Construction Specification Writing Session 4:

Production - Part One



Determine style of specifications for systems, assemblies, and materials (i.e., descriptive, reference standard, proprietary, performance).



AIA LO2

required to ensure quality installation and adequate project record documents for more sustainable project results for better welfare of building occupants and ease of Owner maintenance leading to better occupant welfare and safety conditions over the life of the building.



AIA LO3

Learn to prepare and edit technical specifications sections for a project manual, specify preparation and finishing requirements for products to provide the highest quality result for building occupants. The critical quality information within specifications can only directly and specifically ensure the health, safety and welfare of the occupants of the built environment if the process is clearly understood and performed correctly.



AIA LO4

Review and comment on specification sections written by others for alignment of project goals and to reduce duplications, omissions, and 'scope gap' within the project manual. Understand how clarity in contract document scope is critical to avoid disasters which could compromise health and safety of building occupants.

DOMAIN 6: PRODUCTION – PART ONE



- Determine style of specifications for systems, assemblies, and materials (i.e., descriptive, reference standard, proprietary, performance).
- OF Determine what submittals are required to ensure quality installation and adequate project documentation (i.e., record documents).
- 6G Specify preparation and finishing requirements for the product.
- 6H Review and comment on specification sections written by others.
- 61 Prepare and edit specifications sections.



DOMAIN 6: PRODUCTION – PART ONE



- 6C Specification Styles
- 6F Submittals
 - QA Submittals
 - QC Submittals
 - Closeout Submittals
- 6G Preparation & Finishing
- 6H Specifications by Others
- 61 Writing and Editing Specifications



PRODUCTION INTRODUCTION

WHERE DO WE START?

470-399 BC

The beginning of wisdom is the definition of terms.

Socrates

428-348 BC

The right question is usually more important than the right answer.

— Plato —

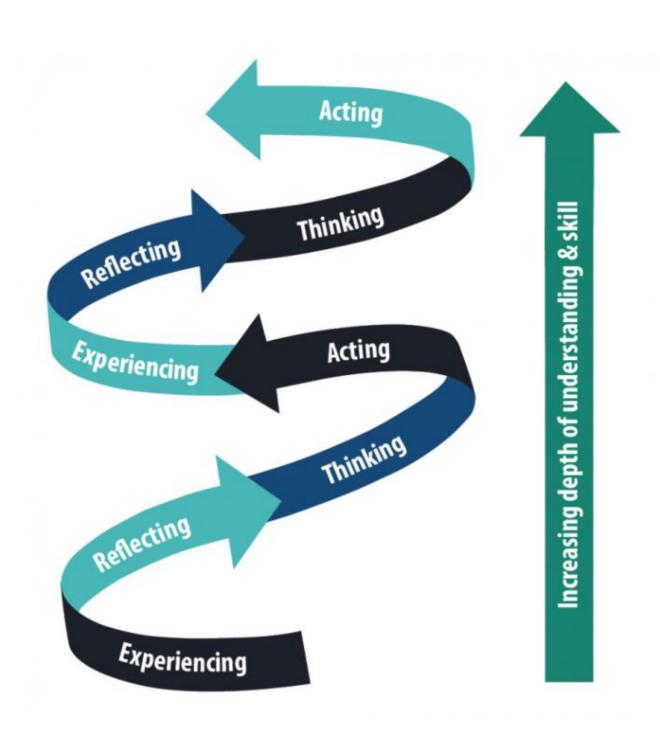
384-322 BC

"Those who know, do. Those that understand, teach."

- Aristotle

ANCIENT GREEK PHILOSOPHERS





Just keep going...

Do your best.



POLL Introduction Questions



PRODUCTION SPECIFICATION STYLES

(COMPETENCY 6C)



LO1 Differentiate between the four methods of specifying.

Determine style of specifications for systems, assemblies, and materials (i.e., descriptive, reference standard, proprietary, performance).



Specification Styles

Restrictive Non-Restrictive

Descriptive Specification Both

Performance Specification Both

Reference Standard Both

Proprietary Restrictive Only



Specification Styles - Descriptive

Descriptive Specification:

A detailed written description of required properties.

PART 2—PRODUCTS

2.01 SHELF STANDARDS

A. Standards:

- 1. Surface-mounted, projecting 25mm (1 inch) maximum from finished surface.
- 2. Mounting screws spaced 300mm (12 inches) apart maximum.
- 3. Slots for shelf adjustment on approximate 25mm (1 inch) centers.
- 4. Finish: Gold anodized aluminum.

B. Mounting Screws:

- 1. Size: No. 8 by 40mm (1-1/2 inch) long.
- Type: Steel wood screws.
- 3. Finish: Match standards.

C. Shelf Brackets:

- 1. Size: Suitable for 200mm (8 inches) wide shelves.
- 2. Depth at Butt: 75mm (3 inches) maximum.
- Depth at Tip: 25mm (1 inch) maximum.
- 4. Attachment: Rigid engagement of lugs into 2 slots of standard.

Figure 14.1 Sample of a Descriptive Specification

Non-Restrictive



Specification Styles - Performance

Performance Specification:

"A statement of required results

with criteria for verifying compliance,

but without unnecessary limitations on the methods for achieving the require results."

Example:

Concrete Strength: 3000 psi

Non-Restrictive

(state result)

(clear measurement criteria)

(No stated means or time of measurement)

- Field Measurement
- Factory
- After install



Production CSPG REF: 14.1.2 / PDPG REF: 5.3.1.2

Specification Styles - Reference Standard

Reference Standard Specification:

Established material, product, or installation requirements by referencing an industry-accepted standard

Components:

- Name of issuing organization
- Number of the standard.
- Title of the standard.
- Date of issue of the standard.
- Citation of applicable requirement, unless entire standard is required.

Rules:

- Dates:
 - Option 1: Include date.
 - Option 2: State use of latest Date in Division 01.
- Draft Standards: Not Good Practice.
- Quoting: Not Good Practice.
- Enforcement: Good Idea.

KNOW IT

INCORPORATE IT

ENFORCE IT



Specification Styles - Reference Standard

Reference Standard Specification:

Established material, product, or installation requirements by referencing an industry-accepted standard

Example:

Name of Issuing Organization

Number of Standard

- A. Unfaced Glass-Fiber Blankets: ASTM C665, Type I. Applicable Requirement
 - 2. Surface Burning Characteristics: ASTM E84:
 - Flame Spread Index: 25, maximum.
 - Smoke Developed Index: 50, maximum.
 - Combustion: Passes ASTM E136.

Date?

Title?

Non-Restrictive (?)



Specification Styles - Reference Standard

Reference Standard Specification:

Established material, product, or installation requirements by referencing an industry-accepted standard

Example:

SECTION 014000

QUALITY REQUIREMENTS

1.7 REFERENCE STANDARDS

- A. Abbreviations and Acronyms: Names of trade associations, standards generating organizations, governing authorities, and other entities are frequently referred to in Contract Documents by acronyms and abbreviations. Request explanation of unknown terms from Architect.
- C. Follow reference standards by date of issue current on date of Contract Documents, except where specific edition date is required by code.

Name of Issuing Organization

Date



Production

CSPG REF: 14.1.3 / PDPG REF: 5.3.1.4

Specification Styles - Proprietary

Proprietary Specification:

Identify the desired product by manufacturer's name, brand, model, type, or product characteristics.

Example:

- A. Unfaced Glass-Fiber Blankets: ASTM C665, Type I.
 - Manufacturers and Products:
 - a. CertainTeed Corporation Fiber Glass Building Insulation.
 - Johns Manville Unfaced Fiber Glass Batts.
 - Knauf Insulation EcoBatt Insulation.
 - d. Owens Corning EcoTouch Pink.
 - Surface Burning Characteristics: ASTM E84:
 - a. Flame Spread Index: 25, maximum.
 - Smoke Developed Index: 50, maximum.
 - Combustion: Passes ASTM E136.

Proprietary Specification

Closed: Only named list
Open: Allow Substitutions
"Or approved equal"

Restrictive



POLL Specification Styles





Choose all that apply

- A. A reference standard.
- B. A proprietary specification.
 - C. A performance specification.
 - D. A descriptive specification.





Which of the of the following is a reference standard?

Choose all that apply



- A. Steel Shapes: ASTM A36.
- B. Install following ASTM C676 requirements.
- C. Fully Loaded Deflection: 1/360, maximum.
- D. Seismic Design Criteria: See Structural Drawings.



PRODUCTION SUBMITTALS

(COMPETENCY 6F)



- LO1 Identify common quality assurance and quality control submittals.
- LO2 Identify common closeout submittals.
- LO3 Coordinate submittal information between Division 01 and Divisions 02 through 49.

Determine what submittals are required to ensure quality installation and adequate project documentation (i.e., record documents).



Submittals

What is a Submittal? (See AIA A201, Paragraph 3.12.4 for more)

- A document demonstrating how the Contractor proposes to conform.
- Not a Contract Document!

Quality Assurance (QA) (How am I doing?) (Present Status)

Quality Control (QC) (How did I do?) (Measured Result)

Closeout Submittal (What I did.) (Record or Reference)



Quality Assurance Submittals

Certificates

Qualifications

Product Data

Samples

Mockups

Shop Drawings

Waste Management Plans

Delegated Design Submittals

Project Manual References:

- Division 01:
 - 013300 Submittal Procedures
 - 014000 Quality Requirements
- Part 1 General, of each Section.



Production

CSPG REF: 15.5.1 / PDPG REF: 8.6, 8.8

Quality Control Submittals

Field Tests

Source or Laboratory Testing

Manufacturer Tests or Inspections

Code Required Inspections

Performance Testing

Partial Survey (Concrete or Earthwork)

Project Manual References:

- Division 01:
 - 013300 Submittal Procedures
 - 014000 Quality Requirements
 - 019100 Commissioning
- Part 1 General, of each Section.
- Part 3 Execution, of each Section.



Production

CSPG REF: 15.5.1 / PDPG REF: 8.6, 8.8

Closeout Submittals

Operation and Maintenance Data

Warranties and Bonds

Record Documents

Final Survey

Maintenance Materials (Parts, Tools, Extra Supplies)

Keys

AHJ Permits (Certificate of Occupancy)

System Startup Procedures

Emergency Manuals

Final Payment Waivers

Project Manual References:

- Division 01:
 - 017000 Execution and Closeout Requirements
- Part 1 General, of each Section.
- Part 3 Execution, of each Section.



Division 01 vs Part 01 Requirements

SECTION 014000

QUALITY REQUIREMENTS

PART 1 GENERAL

1.10 FIELD SAMPLES

A. Definition:

- Field samples are assemblies constructed to demonstrate materials and workmanship for review by Architect and Owner.
 - Construct field samples in final locations in sizes described in technical Specifications sections.
- B. Construct field samples in compliance with applicable Specification sections.
- C. Approved field samples establish Work results standard.
- D. Protect field samples against damage until Substantial Completion.
- E. Approved, undamaged field samples may remain as part of the Work unless designated in individual Specification sections.

SECTION 034900

GLASS-FIBER-REINFORCED CONCRETE

PART 1 GENERAL

1.6 QUALITY ASSURANCE

B. Field Samples: Construct GFRC Panel, 24 by 24 inch, minimum size. Demonstrate texture, color, or pattern.

SECTION 084113

ALUMINUM-FRAMED ENTRANCES AND STOREFRONTS

PART 1 GENERAL

- 1.7 QUALITY ASSURANCE
- C. Field Samples: Construct aluminum framed storefront, 100 sf, minimum size.
 - Photograph installation of sill flashing with end dams and other concealed components.
 Provide access to record photographs when requested by Architect.
 - Field Samples are subject to Field Quality Control testing to verify performance.
 - Approved Samples establish Work results standard.



POLL Submittals





Choose all that apply

- A. Reference Standard.
- B. Shop Drawings.
 - C. Field Quality Control Test.
- D. Product Data Sheet.





Which of the of the following is a quality control submittal?

Choose all that apply

- A. Field Sample
- B. Mockup



- C. Manufacturer field inspections.
- D. Laboratory Testing Results.





Which of the of the following is a closeout submittal?

Choose all that apply



- A. Certificate of occupancy.
- B. Project record documents.
- C. Code review compliance submittals



D. Operation and system manuals.



PRODUCTION PREPARATION AND FINISHING

(COMPETENCY 6G)



- LO1 Organize preparation requirements appropriately in specification sections.
- LO2 Coordinate preparation requirements with Section 017100 Examination and Preparation.
- LO3 Organize finishing requirements appropriately in specification sections.

Specify preparation and finishing requirements for the product.



Finishing - Part 2 Requirements

Finishes

(State finishes required)

2.17 STEEL FINISHES

- A. Prepare surfaces to be primed per SSPC SP 2.
- B. Clean surfaces of rust, scale, grease, and foreign matter before finishing.
- C. Do not prime surfaces in direct contact with concrete or where field welding is required.
- D. Prime paint items in fabrication shop with one coat except where galvanizing is specified.
- E. Galvanizing: ASTM A123; hot-dip galvanize after fabrication.
- F. Galvanizing for Fasteners, Connectors, and Anchors:
 - Hot-Dip Galvanizing: ASTM A153.
 - Mechanical Galvanizing: ASTM B695; Class 50 minimum.

2.18 STAINLESS STEEL FINISHES

A. Stainless Steel: NAAMM AMP 503, Number 4 satin directional polish.

2.19 ALUMINUM FINISHES

- A. Metallic Coating: Three or Four coat fluoropolymer finish with minimum 70 percent PVDF resin by weight in color coat and clear coat; AAMA 2605.
 - 1. Color and Gloss: Architect selected.



Production

Finishing - Part 3 Requirements

Examination Preparation Installation

(On Your Mark)
(Get Set)
(Go!)

PART 3 EXECUTION

Formed Metal Wall Panels

3.1 EXAMINATION

- A. Verification of Conditions:
 - Verify framing members are ready to receive panel systems.
 - 2. Verify penetrating items are ready for cladding system installation.

3.2 PREPARATION

- A. Cold-Formed Metal Girt System: Install per ASTM C754 in orientation, sizes, and locations shown on shop drawings.
- B. Support Girt System: Install in orientation, sizes, and locations shown on Shop Drawings. Coordinate with continuous insulation.

3.3 INSTALLATION

- A. Fasten panel support assembly to girt system.
- Install panels in locations, spacings, and orientation shown on Drawings. Anchor panels securely.
- C. Accommodate thermal and structural movement without failure.
- D. Flashing and Trim: Install with concealed fasteners for secure, waterproof performance. Direct water to exterior.
- E. Erection Tolerances:
 - Offset Between Adjacent Members: 1/16 inch, maximum.
 - Variation from Plane or Location: 1/8 inch in 20 feet, maximum.



Production

Finishing - Part 1 Requirements

Action Submittals (Samples)

(Product Data)

Quality Assurance (Field Sample)

(Mockups)

1.3 ACTION SUBMITTALS

- A. Product Data:
 - Panel materials.
 - Installation system components and profiles.
 - Support girt system components.
 - 4. Initial selection color charts or Samples.
- B. Shop Drawings:
 - 1. Fabrication and installation layouts.
 - Edge conditions at openings and corners.
 - 3. Penetration details.
 - 4. Flashing, trim and anchorage.
 - Weep locations.
- C. Samples:
 - Extruded Installation Framing: 12 inch long section.
 - 2. Metal Finish: 3 by 3 inch sample.

1.6 QUALITY ASSURANCE

- A. Qualifications:
 - Licensed Professionals: Engineer specializing in design of Work specified in this Section, licensed in Kansas.
- B. Field Samples: Install two adjacent metal wall panels. Demonstrate installation method, product interfaces, or color.

Example: Formed Metal Wall Panels



PRODUCTION SPECIFICATIONS BY OTHERS

(COMPETENCY 6H)



LO1 Coordinate specification sections written by consultants and specialists.

Review and comment on specification sections written by others.





Who are the Others?

- Structural Engineers
- Civil Engineers
- Mechanical Engineers
- Plumbing Engineers
- Electrical Engineers
- Lighting Designer
- Building Envelope Consultant
- Theatrical Consultant
- Food Service Consultant
- Elevator Consultant
- Landscape Architect
- Commissioning Agent
- Owner



Production CSPG REF: 15.9



Specifications by Other

What to coordinate?

- Table of Contents
- Division 01 Requirements

Specifier has the responsibility for coordination.

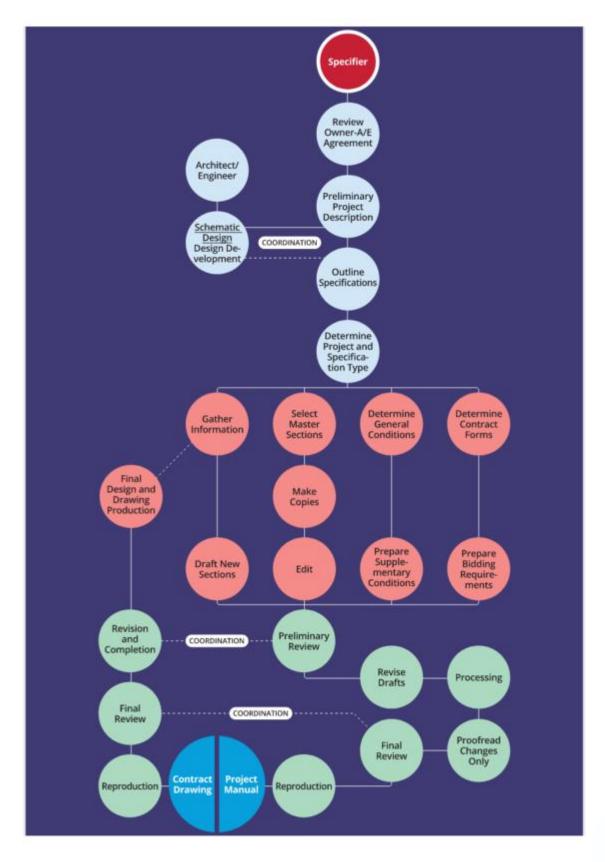


Production CSPG REF: 15.9



General Specification Process

- 1 Review A/E Agreement
- 2 Gather Information
- 3 Review O/C Agreement
- 4 Review General Conditions
- **5 Prepare Supplementary Conditions**
- **6 Prepare Division 01**
- 7 Send Division 01...... (To Consultants)
- **8 Prepare Specifications**
- 9 Make Decisions
- **10 Develop Specifications**
- **11 Prepare Procurement Documents**
- 12 Coordinate Specifications & Drawings
- 13 Final Review and Delivery







When should Division 02 through 49 be written?

- A. Concurrently with Division 01
- B. Before finalizing Division 01
- C. After Division 01 is finalized
- D. Before initiating Division 01



WRITING AND EDITING SPECIFICATIONS

(COMPETENCY 6I)



- LO1 Use the most effective sequence for preparing a specification section.
- LO2 Edit specification sections to conform to specification writing best practices.

Prepare and edit specifications sections.



Best Sequence for Writing Specifications

Start simple...

Part 2 – Products (What is it?)

Part 3 – Execution (How do we do it?)

Part 1 – General (How do we document and review it?)



Best Sequence for Writing Specifications

Part 2 - Products

Part 3 – Execution

Part 1 - General

ORGANIZATIONAL STRUCTURE OF SECTIONFORMAT®

PART 1 - GENERAL

Summary

Section Includes

- Products Furnished [or] Supplied But Not Installed Under This Section
- Products Installed But Not Furnished [or] · Supplied Under This Section Related

Price and Payment Procedures

Allowances

Requirements

- Unit Prices
- Alternates [or] Alternatives Measurement
- Payment

References

- · Abbreviations and Acronyms
- Definitions
- Reference Standards

Administrative Requirements

- Coordination
- · Preinstallation Meetings
- Seguencing
- Scheduling

Submittals Action Submittals

Informational Submittals

- Product Data Shop Drawings
- Samples
- Certificates
- · Delegated Design Submittals
- Test and Evaluation Reports
- Manufacturing Instructions
- · Source Quality Control submittals
- · Field [or] Site Quality Control Submittals
- Manufacturer Reports
- Sustainable Design Submittals
- · Qualification Statements

Closeout Submittals

- · Maintenance Contracts
- · Operation and Maintenance Data
- Bonds
- · Warranty Documentation
- Record Documentation
- Sustainable Design Closeout Documentation Software

Maintenance Material Submittals

- Spare Parts
- Extra Stock Materials
- Tools

Quality Assurance

- · Regulatory Agency Sustainability Approvals Qualifications
- Manufacturers
- Suppliers
- · Fabricators/Installers/Applicators/
- Erectors Testing Agencies
- · Licensed Professionals
- Certifications
- · Sustainability Standards Certifications Preconstnuction Testing
- · Field (or] Stte Samples
- Mock-ups

Delivery, Storage, and Handling

- Delivery and Acceptance Requirements
 Storage and Handling Requirements

Field [or] Site Conditions

- Ambient Conditions
- Existing Conditions

Warranty [or] Bond

- Manufacturer Warranty
- Special warranty
- · Extended Correction Period

PART 2 - PRODUCTS

Owner-Furnished [or] Owner-Supplied Products

- New Products
- Existing Products

[Systems] / [Assemblies]/ [Manufactured Unitsmeouipment] /

[Components Product Types] / (Materials) \ [User-Defined Heading]

- Manufacturers Manufacturer List Definitions
- · Substitution Limitations
- Product Options

Description

- · Regulatory Requirements
- Sustainability Characteristics

Performance/Design Criteria

Capacities

Operation

- Operators
- Controls

Materials

Assembly [or] Fabrication

Operation Sequences

- Factory Assembly
- · Shop Assembly
- Assembly [or] Fabrication Tolerances

Mixes Finishes

- · Primer Materials
- · Finish Materials
- · Shop Finishing Methods

Accessories

Source Quality Control

- · Test and Inspections · Non-Gonforming Work
- Manufacturer Services
- · Coordination of Other Tests and Inspections

PART 3 - EXECUTION

Installers

- Installer List
- Substitution Limitations

Examination

- Verification of Conditions
- Preinstallation Testing
- · Evaluation and Assessment

Preparation

- · Protection of In-Place Conditions
- Surface Preparation
- Demolition/Removal

Erection/Installation/Application/ [User-Defined Process]

- Special Techniques
- · Interface with Other Work
- Systems Integration Tolerances
- [Repair]/[Restoration] Re-Installation

Field [or] Site Quality Control

- · Field (or) Site Tests and Inspections
- Non-Conforming Work
- Manufacturer Services

System Startup Adjusting Cleaning

· Waste Management

- Closeout Activities
- Demonstration Training

Protection

Maintenance Attachments

- End of Section Schedules
- Tables Illustrations





Writing and Editing Specifications





Writing Style

The Four Cs

- Clear
- Concise
- Correct
- Complete

A good writing style has:

- Brevity (Concise)

- Clarity (Clear)

- Accuracy (Correct, Complete)





What is a good writing style characterized by?

Fill in the blanks

A	Accuracy
B	Brevity
C	Clarity



Writing Style

Vocabulary

Spelling

Sentence Structure

Imperative vs Indicative

Abbreviations

Symbols

Numbers

Capitalization

Punctuation

Grammar

Inappropriate Terms

Pronoun Reference

Unnecessary Words

Prepositional Phrases

Streamlining

Specification Detail



Vocabulary

- Amount vs Quantity
 - Amount is money.
 - Quantity is number, measure, area, or volume.
- Either vs Both
 - Either means a choice.
 - Both means both.
- Flammable vs Inflammable (Same)
- Furnish vs Install vs Provide
 - Furnish means supply and deliver.
 - Install means place in position for use.
 - Provide means furnish and install.



Production CSPG REF: 15.4.2

Vocabulary

- Insure vs Assure vs Ensure
 - Insure means procure a policy.
 - Assure means give confidence.
 - Ensure mean to make certain.
- Observe vs Supervise
 - Observe means to watch.
 - Supervise means to oversee and direct.
- Party vs Entity
 - Party means a signer of a contract.
 - Entity means a general person or company.



Production



- Replace vs Remove and Provide New
 - Replace could mean reinstallation of existing.

CSPG REF: 15.4.2

- Remove and Provide New is clearer.
- Shall vs Will
 - Shall implies a requirement.
 - Will is less obligatory.



Production



What is the correct definition of *ensure*?

- A. Issue or procure an insurance policy
- B. Give confidence to or convince a person of something
- C. Make certain in a way that eliminates the possibility of error





- A. They are linear measurements
- B. They state the volume of liquids
- C. They describe the dollar value
 - D. All of the above



Spelling

Use the shortest accepted spelling.

RIGHT

Facia Fascia

Molding Moulding

Gage

Catalogue

Color



Production



Be consistent with mood.

Imperative Mood (Active) (Verb First) Do it.

Indicative Mood (Passive) (Subject First) Contractor shall do it.

Note of confusion:

"Shall" is more imperative than "will", but it is still indicative mood.





Which is preferred?

- A. Perform tests to determine strength and to establish quality.
- B. Tests shall be performed to determine strength and to establish quality.
- C. Tests shall be performed to determine strength and establish qualities.
- D. None of the above.





Which is preferred?

- A. Lay brick in common bond.
 - B. Contractor shall lay brick in common bond.
 - C. Brick must be laid in common bond.
 - D. None of the above.





Which sentence is not imperative?

- A. Spread adhesive with notched trowel.
- B. Install equipment plumb and level.
- C. Apply two coats of paint to each exposed surface.
- D. All sentences are in imperative mood.



Which is preferred?

- A. Contractor shall bury the body.
- B. Owner must bury the body.
- C. Architect will bury the body.
- D. Bury the body.
- E. None of the above.



Abbreviations

Avoid abbreviations.... "When in doubt, spell it out"

ACCEPTABLE EXCEPTIONS	RIGHT	WRONG
Names	ASTM	American Society for Testing Materials
Times	9 p.m.	9 Post Meridiem
Time Zones	EST	Eastern Standard Time
Temperatures	80 degrees F	80 degrees Farenheit
Units of Measure	25 psi	25 pounds per square inch





Which of the statements below is correct?

- A. ASHRAE
- B. Abbreviations should be limited to five or fewer letters.
- C. When in doubt, spell it out.
- D. Ensure abbreviations are consistent between the drawings and the specifications.



Symbols

Avoid symbols.... ! @ # \$ % ^ & * < >

```
percent %
degree °
plus +
minus -
2 by 4 2 x 4
per /
at @
```



Symbols

Avoid symbols.... ! @ # \$ % ^ & * < >

ACCEPTABLE EXCEPTIONS	RIGHT	WRONG	
Dimensions	8'-2"	8 feet 2 inches	
	8 feet	8'-0" or 8'	
	2 inches	0'-2" or 2"	
	1/2 inch		





What symbols should not be used in specifications?

```
A. %
B. °
C. +
D. ""
E. X
F. /
G. ()
```





The use of x for by, as in 2 x 4 and % for percent is not encouraged but is acceptable.



A. True

B. False





Illustrations should not be used in specifications.

A. True



B. False



Numbers

Use them! Numbers are our friends.

Omit unneeded zeroes, but keep them before a decimal

ACCEPTABLE EXCEPTIONS	RIGHT	WRONG
Time	9 p.m.	9:00 pm
Quantity of Sized Materials	three 2 by 4s	3 2 by 4s
Decimals	0.25	.25
Fractions	1/4	1/4





- A. 12 noon
 - B. 3"
 - C. .25 inches
 - D. 1:00 pm





Acceptable only for this list.

General

- State
- Room Names
- Work

Party (to the Contract)

- Architect
- Engineer (if a direct party)
- Owner
- Contractor
- Authorities Having Jurisdiction
- Contracting Officer

Document

- Agreement
- Contract
- Specifications
- Drawings
- Section
- Division
- Article
- Paragraph
- Subparagraph





The following statement is correct:

Capitalizing the initial letter of certain specific nouns and proper names defined in the conditions of the contract is not appropriate.

A. True



B. False



Punctuation

Use appropriately.

Simply and avoid possible misunderstandings.

Colon is short for "shall be"

Semicolon separate independent but related sentences.

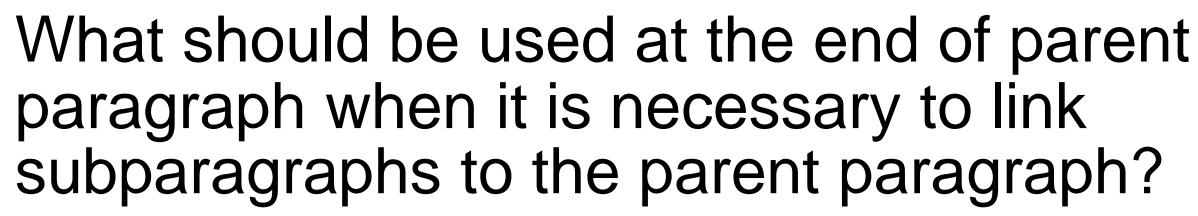
Examples RIGHT WRONG

Comma Use Let's eat, children. Let's eat children.

Colon Steel Shapes: ASTM A36. Steel; ASTM A36.

Exclamation Point See Specifications. See Specifications!





- A. Hyphen
- B. Colon
 - C. Period
 - D. Semicolon



Grammar

Avoid possible misunderstandings.

(Less words means less room for error)

Examples

Subject-Verb Agreement

Parallel Construction

RIGHT

Fasteners are stainless steel.

(Stainless steel fasteners.)

Provide screws. Do not

provide nails.

(Provide screws.)

WRONG

Fasteners is stainless steel.

Provide screws and not

nails.





Inappropriate Terms

Bad Words

- Any
- Must
- Is to
- All
- Such
- As per
- Also
- To the satisfaction of the Architect
- Hereinafter

- As allowed
- As appropriate
- As directed
- As indicated
- As necessary
- As required



Pronoun Reference

Do not use pronouns.

It, he, she, his, and her are all vague.

RIGHT

Maintain equipment above 40 degrees F. Apply coating when it is above 40 degrees F.





Unnecessary Words

Do not use a word if there is already a requirement elsewhere.

RIGHT

Clean weep holes.

WRONG

Contractor shall clean all weep holes.

Follow all requirements in Contract Documents.



Prepositional Phrases

Do not use prepositional phrases.

Reorganize to omit prepositions when possible.

RIGHT

Manufacturer recommended fasteners.

Concrete slab edge.

WRONG

Fasteners recommended by manufacturer.

Edge of concrete slab.



Streamlining

Use Imperative Mood.... Put Subject first.

- 2.1 MODULAR FORMED METAL WALL PANELS
 - A. Rectangular Modular Metal Wall Panels: Individual panels with folded and lapped edges.
 - 1. Material: Aluminum.
 - 2. Nominal Thickness: 0.063 inch.
 - 3. Aluminum Finish: PVDF coating system.
 - a. Color: Architect selected.



Specification Detail

More words does not mean more detail.

Saying more with less often has a greater impact.

WRONG:

Contractor shall provide a complete constructed Work, following the requirements of the authorities having jurisdiction, the requirements of the drawings, specifications, and all associated additional requirements, as per the executed agreement and to the satisfaction of both the Architect and the Owner.

RIGHT:

Follow Contract Documents.



Production CSPG REF: 15.4.18

POLL Last Questions

Review



- A. One of the elongated central fasteners are to be placed around the eye of the panel and bolted.
- B. Bolt one elongated central fastener to panel eye.
 - C. Place one elongated central fastener around eye of panel and bolt.
 - D. None of the above.





The most effective writing sequence for an individual specification section:

- A. PART 2 PRODUCTS, PART 1 GENERAL, PART 3 EXECUTION
- B. PART 2 PRODUCTS, PART 3 EXECUTION, PART 1 GENERAL
 - C. PART 1 GENERAL, PART 2 PRODUCTS, PART 3 EXECUTION
 - D. PART 1 GENERAL, PART 3 EXECUTION, PART 2 PRODUCTS



- A. Maintain pneumatic equipment above 40 degrees F (5 degrees C).
- B. Apply coating with pneumatic equipment when it is above 40°F.
- C. Apply coating when ambient temperature is above 40 degrees F (5 degrees C).
- D. None of the above.



- A. Install bathroom accessories to be purchased under an allowance.
- B. Install bathroom accessories purchased under allowances specified in Section 012100.
 - C. Contractor shall install bathroom accessories which are to be purchased under an allowance.
 - D. None of the above.



- A. One of the elongated central fasteners are to be placed around the eye of the panel and bolted.
- B. Bolt one elongated central fastener to panel eye.
 - C. Place one elongated central fastener around eye of panel and bolt.
 - D. None of the above.



RECAP: PRODUCTION - PART ONE



COMPETENCIES

- Determine style of specifications for systems, assemblies, and materials (i.e., descriptive, reference standard, proprietary, performance).
- Determine what submittals are required to ensure quality installation and adequate project documentation (i.e., record documents).
- Specify preparation and finishing requirements for the product.
- 6H Review and comment on specification sections written by others.
- 61 Prepare and edit specifications sections.



RECAP: PRODUCTION - PART ONE



COMPETENCIES

- 6C Specification Styles
- 6F Submittals
 - QA Submittals
 - QC Submittals
 - Closeout Submittals
- 6G Preparation & Finishing
- 6H Specifications by Others
- 61 Writing and Editing Specifications



QUESTIONS?

CONTACT US



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What is the purpose of Coordination?



- A. Improve efficiency
- B. Manage activity dependencies
- C. Add value
- D. Minimize value engineering

