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Defective Specifications: Causation, Impact, Prevention, and the Architect's Standard of Care

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About the Author

Glossary

I. Executive Summary

Purpose and Scope: This whitepaper explains how construction specifications serve as a primary mechanism within the contract documents to convert design intent into clear and enforceable requirements for procurement, construction execution, quality control, and contract administration. Drawing on the author's experience as an architect, construction manager, disputes consultant, and expert witness, it analyzes common defects in specifications, their causes and consequences, and practical strategies for prevention and remediation.

Context and Framework: The paper situates specifications within industry standards for organization and authorship, clarifies the architect's professional standard of care as a performance benchmark rather than an expectation of perfection, and explains the implications of the Spearin Doctrine for risk allocation among owners, architects, and contractors. It identifies methods for specifying and core concepts that often drive disputes.

Core Discussion: Recurrent specification defects fall into discernible patterns that undermine construction performance: unedited master templates, internal conflicts and inconsistencies across the project manual, mismatches between drawings and specifications, code-related gaps, omitted or ambiguous information, nonconstructible requirements, over-specification, and poor cross-discipline coordination. These defects tend to surface early through observable indicators: concentrated clusters of requests for information (RFIs), elevated first-pass submittal rejection rates, repeated change orders tied to one assembly or system, field failures where pre-construction testing or mockups were not required, and bidder claims of non-availability or discontinued products. While such signals do not establish a breach in the architect's standard of care by themselves, they warrant focused review and corrective action.

Recommendations: The paper proposes scalable tools and workflows that improve clarity, consistency, and enforceability without prescribing a one-size-fits-all approach. Recommended practices include: milestone quality assurance / quality control reviews mapped to design phases, Division 01 alignment checks, section-level coherence checks, structured submittal matrices, consolidated testing tables, product performance alignment, drawing and specification cross-checks, jurisdiction-specific compliance, and constructability and market-alignment reviews with qualified builders at key milestones. At the firm level, the paper recommends governance measures that strengthen culture and capability: supervision structure, automation tools and infrastructure, clause libraries, skill development, explicit consultant integration requirements, and a lessons-learned loop using data from completed projects.

Expected Outcomes: Implementing these measures strengthens the clarity and coordination of the contract documents, reduces ambiguity during bidding and contract administration, and leads to more predictable results in the field. When scaled to the project's complexity and jurisdictional context, they help

align practice with the professional standard of care, bridge the gap between design intent and enforceable requirements, lower the risk of disputes stemming from defective specifications, and provide a clearer basis for resolving issues when they arise.

Disclaimer: The views expressed in this document are my own and do not reflect the opinions of Ankura or its professionals. The information provided is general in nature and should not be relied upon to form conclusions or opinions about any specific project or situation. As with all expert analyses, the unique facts and circumstances of each project will determine the appropriate findings and applications. Furthermore, this whitepaper is intended solely for educational and professional development purposes and does not constitute legal advice. For questions related to a particular project, please consult qualified legal counsel and review the relevant contract documents.

II. What Are Specifications?

A. Definition

Specifications¹ are a core component of the contract documents, which define the qualitative and procedural requirements for executing the work. They complement the **drawings** by articulating what is required, such as materials, products, systems, and quality standards, and how those requirements are to be verified through submittals, mockups, testing, certifications, and other quality control measures.² In essence, drawings depict the configuration and quantitative requirements of a project, whereas specifications define the qualitative and administrative requirements.

Specifications are typically included within a **project manual** prepared by the architect, which ordinarily includes invitation to bid, bid forms, copies of the **contract forms**, **general conditions**, and **supplementary conditions**, in addition to the technical specifications, although this will vary depending upon the project delivery method.³ In common practice, references to “specifications” are often intended to denote the project manual in its entirety.

Specifications are organized by **divisions**, **sections**, and **parts**, typically following the **MasterFormat** and **SectionFormat** developed by the Construction Specifications Institute (CSI). CSI’s **MasterFormat** categorizes specifications into divisions and individual specification sections utilizing standardized numbering conventions that provide uniformity within the industry.⁴ Divisions represent broader categories

¹ A glossary of bolded terms is included at the end of this whitepaper

² The American Institute of Architects. *The Architect’s Handbook of Professional Practice*, 15th ed. (Wiley), p. 1086

³ The American Institute of Architects. *The Architect’s Handbook of Professional Practice*, 15th ed. (Wiley), p. 690

⁴ The Construction Specifications Institute. *Construction Specification Practice Guide*, p. ix-x

of work, under which the individual specification sections are classified. Standard divisions include the following:⁵

Division #	Scope of Division
01	General Requirements
02	Existing Conditions
03	Concrete
04	Masonry
05	Metals
06	Woods, Plastics, and Composites
07	Thermal & Moisture Protection
08	Openings
09	Finishes
10	Specialties
11	Equipment
12	Furnishings
13	Special Construction
14	Conveying Equipment
21	Fire Suppression
22	Plumbing
23	Heating, Ventilating, and Air Conditioning (HVAC)
25	Integrated Automation
26	Electrical
27	Communications
28	Electronic Safety and Security
31	Earthwork
32	Exterior Improvements
33	Utilities
34	Transportation
35	Waterway and Marine Construction
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 Control Equipment
45	Industry-Specific Manufacturing Equipment
46	Water and Wastewater Equipment
48	Electrical Power Generation

A specification section delineates the requirements for an individual component or type of work, utilizing a six-digit nomenclature, which becomes increasingly finite as the particular product or system becomes more defined,⁶ typically influenced by the number of similar items within a project, yet also subject to the

⁵ Carrol-Coelho, Mary and Riso, Taylor. *MasterFormat: The definitive guide to CSI Divisions in Construction*, [https://www.procore.com/library/csi-masterformat]

⁶ The Construction Specifications Institute. *Construction Specification Practice Guide*, p.68

architect's discretion. For instance, Division 09 includes the project requirements for "Finishes," and following are a few examples of some of the specific sections within this division:⁷

Section #	Scope of Section
09 30 00	Tile Finishes
09 30 13	Ceramic Tile
09 30 43	Quarry Tile
09 64 00	Wood Flooring
09 64 23	Wood Parquet Flooring
09 64 43	Engineered Wood Flooring

In the given example, the architect has the discretion to consolidate all product requirements related to tile finishes or wood flooring finishes into a single specification section, or alternatively, to delineate each specific type of tile or wood flooring finish into distinct, dedicated sections.

Individual specification sections customarily follow CSI's **SectionFormat**, ensuring consistency throughout the project manual, utilizing a three-part format that separates the requirements into general administrative and procedural requirements, product information, and execution requirements.⁸

- **Part 1 - General:** This part provides the administrative and procedural requirements unique to the given specification section. It encompasses submittal requirements, quality assurance, mockups, warranties, delivery/storage/handling procedures, coordination with other sections, and project closeout requirements pertinent to this section. Fundamentally, Part 1 instructs the contractor on how to demonstrate compliance with the project requirements, outlining how the work will be evaluated.
- **Part 2 - Products:** This part includes specific material, product, and equipment requirements, often grounded in performance requirements or material characteristics, guiding the contractor on how each item should fulfill the design objectives. It will typically reference a product that served as the design basis, known as a "Basis-of-Design" product, along with acceptable alternative products or manufacturers. It also includes information on individual component requirements, fabrication tolerances, finishes, accessories, and source-testing requirements, among other performance criteria. Essentially, Part 2 establishes the qualitative benchmark for the component or system.
- **Part 3 - Execution:** This part outlines the specific requirements for executing the work, generally refraining from requiring specific means and methods, but encompassing elements such as the requirements for examining and preparing substrates, options for installation methods, tolerances, and field testing and quality control procedures, among other considerations. Essentially, Part 3 links the product to installation and verification.

Summarily, specifications provide the qualitative requirements for each material, product, or piece of equipment, which complements the quantitative and configuration information provided within the drawings.

⁷ The Construction Specifications Institute. *MasterFormat*, 2020 Edition

⁸ The Construction Specifications Institute. *Construction Specification Practice Guide*, p.72-73

B. How They Are Used

In practice, specifications play a pivotal role across all stages of a construction project, serving the needs of various project stakeholders, including construction managers, specialty contractors, estimators, procurement specialists, quality assurance and quality control professionals, contract administrators, **Authorities Having Jurisdiction (AHJs)**, owners, insurers, and in cases of dispute, attorneys, mediators, arbitrators, and experts.

- **Bidding/Procurement:** Specifications furnish estimators with essential information about specified products, including performance attributes, basis-of-design products, submittal requirements, and installer qualifications. This information is shared with potential bidders or suppliers to guide product recommendations and ensure compliance with performance standards, which the estimator subsequently reviews before incorporating into the bid or estimate. Specifications play a crucial role in bid leveling and pricing by clarifying minimum performance levels and ensuring product compliance and equivalence.
- **Construction Execution:** Specifications provide critical instructions for contractors on how components of work are to be constructed or otherwise executed, encompassing preparation, installation requirements, and testing and quality control procedures.
- **Contract Administration:** Specifications govern submittal review, substitution requests, mockups, testing, inspections, warranties, and closeout documentation. Together with the general conditions of the contract, they form the backbone of the architect's contract administration services.
- **Compliance:** Specifications serve as a comprehensive reference to codes, standards, and testing methods that are essential for determining compliance. These documents are utilized not only by quality assurance and quality control professionals but also by third-party inspectors, ensuring that all project components meet the required regulatory and performance criteria.
- **Risk Management:** Specifications may allocate responsibilities through delegation of design responsibilities, detailing field control requirements, setting acceptance criteria, providing warranty information, and establishing the evidentiary record for resolving disputes.
- **Disputes:** Specifications provide attorneys, arbitrators, sureties, insurance carriers, and other dispute professionals with detailed contractual requirements and standards, serving as a critical reference to assess compliance and interpret obligations during a dispute.
- **Maintenance/Operations:** Specifications instruct the contractor on the necessary operations, training, and maintenance data that must be furnished to building owners, ensuring they can effectively operate the building after its transfer to the owner.

III. Types of Specifications

Each method of specifying carries distinct implications for risk, cost, and the degree of control exercised over materials, products, and equipment, making the careful selection and consistent use of the appropriate specification type a critical component of project risk management.⁹ Although multiple types may be

⁹ United States Army Corps of Engineers. Design-Build Contracting Regulation (ER 1180-1-9)

incorporated within a single project manual, they should be applied uniformly to comparable scopes of work to preserve coherence and maintain effective control.¹⁰

A. Proprietary Specifications

Definition: This specification type identifies specific manufacturers and models permitted for inclusion in the project.¹¹ Proprietary specifications may be "closed," mandating the use of a particular product without alternatives, or "open," indicating that two or more products or manufacturers are considered acceptable options for the contractor to incorporate into the project.¹²

- **Advantages:** Proprietary specifications ensure a known quality or compatibility and are most commonly used in situations where the architect's intent relies upon a specific product, or when matching existing conditions is necessary.¹³
- **Risks:** In some instances, proprietary specifications may be non-compliant with procurement rules in publicly funded projects, reduce competition, or lead to claims if a specified brand is unavailable or fails to meet performance requirements. Furthermore, they may increase cost due to lack of competitive bidding.¹⁴
- **Best Uses:** This type of specification is typically most suitable when adherence to corporate or institutional standards is essential, when the project owner has a particular preference, or when compatibility is required for components such as controls, security, and fire alarm systems, historic matching, or to meet stringent dimensional or other programmatic needs.

B. Performance Specifications

Definition: A performance specification defines the functional requirements and expected outcomes that a building component or system must achieve.¹⁵ It establishes measurable criteria, such as capacity, durability, or efficiency, while refraining from specifying exact materials or installation methods, thereby allowing contractors the flexibility to determine the best approach.

- **Advantages:** Performance specifications offer greater flexibility by allowing contractors to determine the best materials and methods to achieve the required performance outcomes. They foster innovation by offering multiple compliant solutions rather than mandating a single approach.¹⁶
- **Risks:** The use of performance specifications carries the risk of potential misinterpretation of required outcomes, which may lead to disputes over whether the completed work meets the intended criteria.

¹⁰ The Construction Specifications Institute. *SectionFormat*, 2020 Edition

¹¹ The American Institute of Architects. *The Architect's Handbook of Professional Practice*, 15th ed. (Wiley), p. 692

¹² O'Beirne, Kevin. *Specifying Methods: Proprietary Specifying 101*. [<https://www.csiresources.org/blogs/kevin-obeirne-pe-fcsi-ccs-ccca-cdt1/2019/07/16/specifying-methods-proprietary-specifying-101>]

¹³ *ibid*

¹⁴ *ibid*

¹⁵ United States Department of Transportation, Federal Highway Administration. *Technical Advisory – Types of Specifying*. [<https://www.fhwa.dot.gov/construction/specrevattach1.cfm>]

¹⁶ *ibid*

Additionally, they place greater responsibility on contractors to validate their selected solutions, introducing potential uncertainty in cost, quality, and accountability.¹⁷

- **Best Uses:** Performance specifications are best suited when clear, measurable outcomes can be defined, such as HVAC, fire protection, and building automation systems. They are particularly suitable for design-build projects where contractors manage both design and construction phases and are effective in integrating new technologies or materials that lack established prescriptive standards.

C. Reference Specifications

Definition: This type of specification incorporates external standards by reference, such as those from American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), Underwriters Laboratories (UL), National Fire Protection Association (NFPA), and American Architectural Manufacturers Association (AAMA).¹⁸ Instead of reiterating procedures or properties, the specification cites the reference standard, thereby adopting the general character of a performance specification.

- **Advantages:** Reference specifications ensure consistency by adhering to established industry standards, which helps ensure uniform quality across materials and workmanship. They also streamline the specification process by reducing the need to write detailed requirements from scratch.¹⁹
- **Risks:** Potential risks include outdated citations, incompatible editions, or conflicting references across sections. Over-reliance without appropriate tailoring can result in unattainable or redundant requirements.²⁰
- **Best Uses:** Reference specifications are most effective when established industry standards can precisely define requirements for common building elements, such as specifying structural steel members using ASTM standards or electrical wiring using National Electrical Code (NEC) requirements. They are particularly well-suited for widely used materials and systems where comprehensive and recognized criteria already exist.

D. Prescriptive Specifications

Definition: Prescriptive specifications precisely define the materials, products, and installation methods required for a construction component. They detail specific brands, compositions, dimensions, and procedures that must be adhered to during construction, providing a comprehensive set of instructions that dictates the execution of the work.²¹

¹⁷ *ibid*

¹⁸ The Construction Specifications Institute. *Construction Specification Practice Guide*, p.48-52

¹⁹ *ibid*

²⁰ *ibid*

²¹ United States Department of Transportation, Federal Highway Administration. *Technical Advisory – Types of Specifying*.
[<https://www.fhwa.dot.gov/construction/specprevattach1.cfm>]

- **Advantages:** This specification approach is advantageous when a single product dictates the function of a larger system or the entire project, allowing architects to maintain control over quality, performance, and aesthetics. It also offers clarity in pricing and establishes clear submittal criteria.²²
- **Risks:** Prescriptive specifications may restrict contractor flexibility, potentially precluding the use of more efficient or compatible materials and methods. They can also lead to increased costs or delays if the specified products become unavailable or require specialized installation techniques.²³
- **Best Uses:** Prescriptive specifications are most effectively employed when the owner or designer prefers precise control over materials and installation methods, such as specifying exact types of concrete mix for foundations or a particular roofing membrane system.

IV. Architect's Standard of Care

An architect is not required to produce specifications that are perfect, devoid of errors, or entirely comprehensive. Rather, the obligation is to prepare them in accordance with the professional **Standard of Care**. This standard acknowledges the inherent complexity of design and the practical reality of constraints involved in developing construction documents. Under this standard, an architect must exercise the level of skill, knowledge, judgment, and diligence typically expected of reasonably prudent architects operating under similar conditions, within the same time frame and locality. Both the American Institute of Architects (AIA) and the National Council of Architectural Registration Boards (NCARB) affirm that an architect's performance is evaluated not against a flawless baseline, but in comparison of the conduct of competent peers.²⁴ Thus, the standard provides a realistic and flexible benchmark, not an expectation of perfection.

In practice, several principles shape how the standard of care is understood:

- **It is performance-based and does not guarantee perfect results.**

Meeting the standard of care does not necessitate eliminating all errors or omissions in the preparation of specifications. Occasional mistakes or inconsistencies do not automatically constitute a breach in the standard of care, provided they fall within normal professional tolerances. This concept is confirmed by authoritative industry organizations²⁵ and industry standard contracts²⁶ that clearly distinguish between professional services and guaranteed outcomes.

- **It is dependent on time, place, and context.**

Because the standard is anchored to prevailing practices at the time services are rendered, it evolves with the advent of new codes, best practices, material innovations, and digital tools.²⁷ A specification written today must align with the current norms and regulatory environment, as opposed to relying

²² *ibid*

²³ *ibid*

²⁴ The American Institute of Architects. *The Architect's Handbook of Professional Practice*. (Wiley) 15th Edition, p. 169-170; The National Council of Architectural Registration Boards. *NCARB Model Rules of Conduct*, dated July 2018, p. 6

²⁵ AIA Trust. *Understanding the Standard of Care*. [<https://theaiatrust.com/understanding-standard-care/>]

²⁶ The American Institute of Architects. *AIA B101-2017 – Standard Form of Agreement Between Owner and Architect*, Section 2.2

²⁷ Willis Towers Watson. *Evolving Technology and the Standard of Care*. [<https://www.wtwco.com/en-us/insights/2023/12/evolving-technology-and-the-standard-of-care>]

upon outdated procedures or legacy standards, and the same is true when reviewing architectural services in hindsight. Similarly, expectations differ by region due to variation in climate, codes, and other considerations. Thus, the standard of care is inherently sensitive to context.

- **It applies within the scope of services actually agreed upon.**

The professional standard of care does not change based on fee level, schedule pressure, or project delivery method. However, the contracted scope of services determines what work is expected and therefore what constitutes ordinary and reasonable practice for a given engagement. When an architect is hired only to prepare baseline, industry-standard specifications, the required level of detail, coordination, and technical development is different from engagements that include expanded services, such as customized performance specifications, in-depth material research, intensive interdisciplinary coordination, or building information modeling (BIM)-integrated specification development. In short, the architect must meet the standard of care for the services actually contracted for but is not expected to provide a higher level of service unless its agreement requires it. Thus, the scope of services defines the appropriate level of specification effort and the performance expected under the standard of care.

When specifically applied to preparing specifications, meeting the standard of care generally includes:

- **Using accepted organizational frameworks**, such as **MasterFormat**, and **SectionFormat**, to create a clear, consistent, and logically structured project manual that contractors can navigate efficiently.
- **Referencing current and applicable codes and technical standards** and verifying that materials, performance criteria, and testing requirements align with the jurisdictional environment and commonly accepted industry references at the time the specifications are prepared.
- **Coordinating specifications thoroughly with drawings, schedules, and details**, as well as maintaining internal consistency across all specification sections. Competent practice requires reasonable coordination, ensuring documents do not materially conflict, even though it does not imply absolute uniformity or complete absence of minor inconsistencies.
- **Clearly defining performance requirements, submittals, and acceptance criteria** which adequately meet the project needs, giving bidders and contractors a reliable understanding of expected quality levels, testing thresholds, and verification methods. Reasonably prudent architects aim to reduce ambiguity while acknowledging that construction means and methods remain the contractor's responsibility.

V. The Spearin Doctrine

The Spearin Doctrine, from *U.S. v. Spearin*, 248 U.S. 132 (1918), established that when the owner furnishes drawings and specifications, there is an implied warranty that they are adequate for their intended purpose.²⁸ If the contractor dutifully follows drawings or specifications and the result is defective, liability for the consequences rests with the party who furnished the documents, which is typically the owner. In other words, a contractor generally cannot be held liable for defective specifications if they perform the work as required therewithin, and they have the inherent right to rely upon the accuracy of the specifications

²⁸ United States v. Spearin, 248 U.S. 132 (1918) [<https://supreme.justia.com/cases/federal/us/248/132/>]

produced by the architect. Consequently, an architect may become exposed to claims from an owner who becomes liable to the contractor under a Spearin-based warranty claim.²⁹

While a legal principle, the AIA also discusses the Spearin Doctrine in its *Handbook of Professional Practice* due to the overarching implication towards the practice of architecture:³⁰

"The 'Spearin Doctrine' comes from a 1918 U.S. Supreme Court case called *United States v. Spearin*. In its ruling, the Supreme Court stated that 'if the contractor is bound to build according to plans and specifications prepared by the owner, the contractor will not be responsible for the consequences of defects in the plans and specifications.' Since *Spearin*, courts have ruled that, by providing plans and Specifications (prepared by an architect) to a contractor, the owner is also giving an implied warranty that the documents are free of defects and are sufficient for the contractor to construct the project."

Accordingly, here are the key implications for Architects:

- **Implied Warranty vs. Standard of Care:** The Spearin warranty flows from the owner to the contractor, not between the architect and the contractor.³¹ The architect's duty to the owner is still governed by the professional standard of care, not perfection. Yet even when specification errors do not constitute a breach of that standard, the owner may still be liable to the contractor under the implied Spearin warranty. This disconnect between the architect's standard-of-care obligation and the owner's implied warranty to the contractor is commonly known as the "Spearin Gap."³² Regardless, any errors in the specifications increase the architect's litigation exposure.
- **Design Delegation:** When specifications allocate certain design responsibilities to the contractor or to a designated supplier or manufacturer, a process commonly referred to as "delegated design" or "design assist," the extent of the delegated design scope and the associated performance criteria should be defined with clarity and precision. Although properly structured delegation may shift a portion of responsibility away from the owner in the context of Spearin-based defenses,³³ any ambiguity within the specifications inherently elevates the risk of disagreement, misinterpretation, and subsequent claims.
- **Interpretation and Priority:** Contract provisions, which require the contractor to review, compare, or identify discrepancies or errors, generally do not negate the owner's implied warranty under the Spearin Doctrine.³⁴ Such provisions may, however, affect the allocation of costs when a contractor fails to identify and raise conspicuous inconsistencies, code violations, or other readily observable errors during the bidding or construction process.³⁵

²⁹ This whitepaper is intended for educational and professional development purposes. It is not legal advice. For project specific questions, consult qualified legal counsel.

³⁰ The American Institute of Architects. *The Architect's Handbook of Professional Practice*, 15th ed. (Wiley), p. 692

³¹ Stover, Michael. *The Spearin Doctrine*. [<https://www.wcslaw.com/accolades/the-spearin-doctrine/>]

³² Yand, James. *Contract Drafting 101: Implied Warranties and Design Delegation* [<https://www.millernash.com/industry-news/contract-drafting-101-implied-warranties-and-design-delegation>]

³³ *ibid*

³⁴ *United States v. Spearin*, 248 U.S. 132 (1918) [<https://supreme.justia.com/cases/federal/us/248/132/>]

³⁵ LegalClarity. *What is the Spearin Doctrine in Construction Law?* [<https://legalclarity.org/what-is-the-spearin-doctrine-in-construction-law/>]

- **Shifting Design Responsibility:** Over-reliance on purely performance-based criteria can shift portions of design responsibility to the contractor, narrowing the scope of the owner's implied Spearin warranty.³⁶ Although this might seem to reduce the architect's exposure, it also diminishes the architect's control over critical design outcomes, increasing the likelihood of misalignment, rework, and dispute during delivery and enforcement.

From a practical standpoint, the Spearin Doctrine underscores the importance of preparing specifications that are coherent, constructible, code-compliant, and coordinated with the drawings, as deficiencies can ripple across the contractual landscape for which architects may reasonably be held responsible.

VI. Key Concepts Related to Defective Specifications

Before turning to specific categories of common specification defects, it is useful to outline several foundational concepts that frequently shape disputes involving specifications, including those related to basis-of-design products, submittal requirements, and testing or verification protocols.

A. Basis of Design Product vs. a Specified Product

“Basis-of-Design” Product: A specifically identified product or system used to establish the designer's intended level of quality, performance, and functional characteristics. The basis-of-design (BOD) product serves as the benchmark against which proposed equivalents are evaluated and reflects the design team's underlying intent.³⁷

“Specified” Product: The product which meets the specification requirements in their full context, including performance criteria, technical attributes, and the administrative and procedural obligations the manufacturer must satisfy.³⁸

Inconsistencies between the BOD product and the performance, administrative, or other requirements of the specifications often lead to disputes. Where a conflict arises between the basis-of-design example and other specification requirements, the contractor is typically obligated to provide a product that satisfies the written criteria and/or to seek clarification from the architect, rather than relying solely on

³⁶ Cohen Seglias. *Design Versus Performance Specifications* [<https://www.cohenseglias.com/contracting-database/design-versus-performance-specifications/>]

³⁷ The American Institute of Architects. *The Architect's Handbook of Professional Practice*, 15th ed. (Wiley), p. 693

³⁸ The American Institute of Architects. *A201-2017 General Conditions of the Contract for Construction*, section 1.1.1, 1.1.3, and 3.1.2 (Under AIA A201, the contractor must perform the work in accordance with the contract documents, which includes all product criteria in the specifications; therefore, the Contractor must furnish products that conform to all requirements of the relevant specification section, with any alternative permitted only through the contract's substitution procedures.)

the BOD reference.³⁹ In this manner, the BOD product communicates design intent, while the complete specification section defines the contractual obligation.

B. Test Requirements

Testing serves as the primary means of translating qualitative specification language into objective, measurable criteria for determining whether the completed work meets the design intent. Since specifications often describe performance, durability, or compliance in general terms, testing provides the structured method for verifying that installed assemblies achieve these expectations under defined conditions. Well-developed testing provisions improve transparency, reduce subjectivity during contract administration, and provide a defensible basis for evaluating compliance. To be effective, the testing framework should be clearly defined, consistently coordinated across the project manual, and aligned with industry practice and the capabilities of qualified testing agencies.

1. Source vs. Field Testing

Specifications should clearly indicate which performance attributes are verified through source testing at the manufacturer's facility or an approved laboratory, and which are validated through field testing under project-specific conditions. Source testing establishes baseline performance prior to installation and belongs in "Part 2: Products" of the specification section, while field testing belongs in "Part 3: Execution" and evaluates characteristics affected by on-site assembly and installation quality.⁴⁰ Establishing this distinction within the specification ensures that each test is appropriately matched to the property being evaluated and that all parties understand their responsibilities for coordination, scheduling, and compliance.

2. Methods and Editions

All required tests should be identified by their specific standard designation and edition year to ensure that the testing methodologies are consistent, current, and enforceable. Since testing standards are regularly updated, citing an unspecified or outdated edition can lead to inconsistent procedures and disputes over compliance. A well-coordinated specification confirms that each referenced standard applies uniformly across all relevant sections, eliminating ambiguity about the criteria used to determine pass or fail outcomes.

3. Frequency and Sampling

Testing requirements should define not only what is to be tested, but also the frequency and the protocols to be used.⁴¹ The specification should state the number of tests, the locations or units to be sampled, and when sampling occurs within the construction sequence, whether early in production, at key milestones, or after system installation. It should also establish clear retesting criteria, identifying when additional sampling is required after a failure and how corrected work will

³⁹ The American Institute of Architects. *A201-2017 General Conditions of the Contract for Construction*, section 3.1.2 and 3.2.2 (Example: under AIA A201, the contractor must perform the Work in accordance with the Contract Documents, which includes all product criteria in the Specifications, and it must to submit an RFI to the architect it identifies a conflict)

⁴⁰ The Construction Specifications Institute. *SectionFormat, 2020 Edition*

⁴¹ 2024 International Building Code, Chapter 17 (Example of code requirements for testing frequency and protocol)

be evaluated. These provisions help ensure that test results accurately reflect the installed work and reduce the potential for disputes over testing adequacy.

4. **Responsibility and Cost**

A clear assignment of responsibilities is important for maintaining transparency and avoiding disputes over who must engage qualified testing agencies, coordinate testing activities, or cover associated costs. The specification should identify the party responsible for procuring independent testing laboratories and require that those laboratories hold appropriate accreditation to demonstrate technical competence. It should also define responsibilities for scheduling access, preparing test locations, protecting adjacent work, and documenting results. This clarity supports orderly project execution and ensures consistent, reliable administration of the testing process.

5. **Acceptance Criteria**

To ensure testing supports the project's design intent, the specification should link each test to clear acceptance thresholds that translate performance requirements into measurable or observable criteria. These thresholds must align with the intended performance of the system and outline the corrective actions required when results do not comply. By directly connecting testing outcomes to defined requirements, the specification provides an objective basis for evaluating installed work and supports consistent decision-making during construction.

C. **Submittal Requirements**

Submittals are the architect's primary means of verifying that proposed products, systems, and equipment comply with the contract documents before installation. Since submittals serve as the formal record for reviewing products, assemblies, and delegated design elements, they should be complete and properly managed, as gaps in documentation can compromise design intent and hinder effective oversight. Clear, coordinated, and comprehensive submittal requirements are therefore essential to maintaining consistency, ensuring accurate tracking, and supporting timely decisions.

1. **Clarity**

Specifications should clearly define the required content for each submittal type to eliminate ambiguity and support an efficient review process. Product data should indicate the exact selections proposed; shop drawings should document relevant dimensions, configurations, and interface conditions; physical samples should reflect the specified finishes; and test reports should correspond to the standards and edition years referenced in the specification. Where appropriate, certifications, evaluation reports, and mockup documentation should also be required to support verification.

2. **Sequencing**

The specification should clearly distinguish **action submittals**, which require review and approval before procurement, fabrication, or installation, from **informational submittals**, which are submitted solely for the project record. To manage procurement sequencing effectively, the specification should identify long-lead components and define their required submittal milestones, and for complex or highly coordinated systems, it should mandate a pre-shop-drawing

preconstruction meeting to align performance criteria, interface requirements, and sequencing expectations across the design and construction teams.

3. **Delegated Design**

Where portions of the work involve delegated design, the specification should clearly define the expectations that govern this process. This includes outlining the review responsibilities of the architect or engineer of record, establishing qualifications for delegated engineers, and requiring signed and sealed design documents and calculations. The specification should also identify the limits of responsibility between delegated design elements and adjacent building systems to ensure that interface conditions are fully addressed and that the resulting assemblies integrate seamlessly with the overall design intent.

4. **Review Time**

To support orderly progress of the work, the specification should establish reasonable and clearly defined review periods for both initial submittals and resubmittals. Providing explicit timelines helps maintain project momentum by aligning expectations between the contractor and the design team and reducing uncertainty about how submittal review fits within the overall construction schedule. Well-structured review windows also allow the design team to plan workloads effectively, helping ensure that submittals are reviewed in a timely and predictable manner that supports coordinated decision-making across the project.

5. **Digital Standards**

As digital workflows now dominate the submittal process, the specification should establish clear requirements for file formats, naming conventions, metadata, and model-exchange protocols. Effective version control, including revision tracking and reliable identification markers, is essential to maintaining an accurate and traceable project record. These standards promote consistency across the project team, streamline review cycles, and ensure that digital submittals reinforce the broader goals of coordination and documentation integrity throughout construction.

VII. **Common Specification Defects**

A specification is generally considered defective when, despite the contractor's adherence to it, its errors or omissions lead to unsuitable results.⁴² Defective specifications often display recurring patterns, which indicate deficiencies in a specification, as will be discussed below. Importantly, the presence of these patterns does not, by itself, establish a breach of the architect's standard of care, although they will likely contribute to the overall analysis of such.

A. **Unedited Templates**

Unedited or insufficiently tailored template specifications often contain boilerplate language referencing systems or conditions beyond the project's scope, unresolved placeholder text, and default **Master**

⁴² Stover, Michael. *The Spearin Doctrine*. [<https://www.wcslaw.com/accolades/the-spearin-doctrine/>]

Specification options left active without evaluation of their relevance. These conditions frequently lead to internally inconsistent requirements, particularly when the master section has not been properly adapted to the project's delivery method, governing codes, or intended assemblies. Such patterns suggest that the editing process did not fully translate design decisions into a coherent, project-specific specification.

When specifications are issued without appropriate editing, they introduce substantial uncertainty in pricing and procurement. Bidders may rely on conflicting, incomplete, or inaccurate requirements, leading to wide bid variability, elevated contingencies, and increased exposure to change orders. During construction, unenforceable or irrelevant provisions weaken the architect's ability to administer the contract and complicate **contract administration**, reducing the specification's reliability as a governing document.

B. Conflicting Information Within an Individual Specification Section

Conflicting information within a single specification section occurs when its internal requirements are not aligned, creating ambiguity about intended performance, product characteristics, or verification methods. Such inconsistencies often result from incomplete editing, piecemeal revisions that are not cross-checked against earlier content, or performance thresholds set without reference to the basis-of-design product's capabilities. When these conflicts arise, the specification may cease to function as a clear, coherent contractual directive and introduces interpretive risk during bidding, submittal review, and construction.

1. Conflicting Test Requirements

Conflicting test requirements occur when different parts of a specification section cite incompatible test methods, edition years, or performance thresholds, producing test conditions that the specified system cannot reasonably meet or that contradict its intended parameters. As a result, they increase the risk of unnecessary retesting, rejection of otherwise compliant work, and disputes over which standard should govern.

Representative examples of deficiencies may include:

- **Section 08 44 13 Curtain Wall Assemblies:** One article requires testing to ASTM E330-14 for structural performance, while a later paragraph references ASTM E330-02, resulting in conflicting load-application procedures and acceptance thresholds for the same curtain wall system.
- **Section 07 27 00 Air Barriers:** The specification cites ABA A440.4 as the governing air-leakage test but later requires compliance with ASTM E2178, creating contradictory test methods for the same membrane and prompting questions about which standard controls submittal acceptance.
- **Section 26 51 00 Interior Lighting:** The luminaire section mandates compliance with Illuminating Engineering Society Lighting Measurement (IES LM)-79 for optical and electrical performance, yet the controls subsection ties acceptance to California Title 24 testing protocols that the selected fixture and driver combination cannot satisfy, producing incompatible test requirements for a single lighting package.

2. Conflicting Product Information

Inconsistencies in product information occur when different parts of a specification section prescribe conflicting material characteristics, performance criteria, or finish requirements for the same system. These contradictions create uncertainty during bidding and may lead to uneven pricing, inappropriate substitutions, or misaligned expectations during construction.

Representative examples of deficiencies may include:

- **Section 08 14 00 Interior Wood Doors:** One article specifies a stile-and-rail door with a solid lumber core, while another part of the same section calls for a particleboard core under the identical door type designation, creating conflicting material requirements for bidders.
- **Section 09 29 00 Gypsum Board:** The performance subsection requires Type X gypsum board for all partitions, yet the finish schedule later identifies standard non-rated gypsum board for the same wall assemblies, generating uncertainty about the required fire-resistance properties.
- **Section 07 54 00 Thermoplastic Membrane Roofing:** The material requirements list a 60-mil thermoplastic polyolefin (TPO) membrane, while the warranty subsection references a manufacturer warranty available only for 80-mil systems, resulting in incompatible performance and warranty expectations for the specified roof assembly.

3. Performance Requirements Not Aligned With the Basis-of-Design Product

Misalignment between performance requirements and the capabilities of the BOD product occurs when the specification sets thresholds that exceed the product's verified performance. This disconnect diminishes the value of the BOD as a benchmark and can lead to rejection of BOD-based submittals, unanticipated substitutions, or avoidable disputes.

Representative examples of deficiencies may include:

- **Section 08 44 13 Glazed Curtain Wall:** The specification establishes a +/-60 per square foot (PSF) design pressure for the curtain wall assembly, while the identified BOD system is only tested and listed to ± 45 PSF, resulting in a performance gap.
- **Section 07 41 13 Metal Roof Panels:** The specification requires a tested wind-uplift resistance of 120 PSF per ASTM E1592, but the BOD standing-seam roof system is only rated to 90 PSF in the manufacturer's published test data, resulting in a performance gap.
- **Section 09 84 00 Acoustic Wall Panels:** The specification requires a minimum Noise Reduction Coefficient (NRC) of 0.85 for sound-absorption performance, but the BOD acoustic panel system has a published NRC of 0.70, resulting in a performance shortfall that prevents the BOD product from meeting the project's acoustic criteria.

C. Inconsistencies Within the Project Manual

Coordination failures within the project manual often manifest as patterns that, while not definitive evidence of a defect, signal weaknesses in internal alignment. These inconsistencies undermine the

ability of the specifications to operate as a coherent contractual instrument and can introduce avoidable uncertainty during bidding, submittal review, and construction performance.

1. Broken References

Broken or incomplete cross-references within the project manual undermine the internal coherence of the contract documents and impede enforceability during contract administration. These issues arise when a section cites procedures, forms, or requirements located elsewhere in the project manual that have been omitted, renumbered, or inconsistently developed. Such discrepancies create uncertainty about which provisions govern, generate avoidable disputes over process, and erode the architect's ability to administer the contract effectively.

Representative examples of deficiencies may include:

- **Section 01 33 00 Submittal Procedures:** The section directs the contractor to submit "Form A-12 Installation Verification," but the referenced form is not included anywhere in Division 01 or in the appendices, leaving the required documentation undefined.
- **Section 07 92 00 Sealants:** The section instructs the contractor to coordinate perimeter joint requirements with "Section 08 71 00 Door Hardware," yet only "Section 08 70 00 Hardware" appears in the project manual, which is not specific to door type hardware, creating uncertainty about which hardware interfaces must be sealed.
- **Section 23 05 93 TAB:** The section references detailed procedures in "Section 23 08 00 Commissioning of HVAC Systems," but the commissioning section is absent from the manual, resulting in no clearly defined standard or acceptance pathway for testing, adjusting, and balancing (TAB) activities.

2. Product Compatibility

Product compatibility issues arise when specified materials or components are not chemically or physically suited to one another or to the adjacent substrates and environmental conditions in which they are installed. Such mismatches can lead to premature deterioration, concealed defects, moisture entrapment, and broader performance failures that may not surface until after occupancy. The resulting corrective work is often extensive and costly, and it complicates warranty administration as well as long-term maintenance planning.

Representative examples of deficiencies may include:

- **Section 07 13 26 Self-Adhering Sheet Waterproofing:** The specified membrane is chemically incompatible with the project's specified rigid insulation adhesives, creating a risk of adhesive migration, loss of bond, and premature membrane delamination.
- **Section 09 30 00 Tiling:** The epoxy grout identified in the finish schedule is not compatible with the cementitious waterproofing underlayment listed in the same section, increasing the likelihood of moisture entrapment and long-term substrate deterioration.

- **Section 03 30 00 Cast-in-Place Concrete:** The specified high-range water-reducing admixture is not chemically compatible with the BOD air-entraining agent, resulting in unstable air-void structure and increased risk of surface scaling and freeze-thaw deterioration once the slab is exposed to moisture and temperature cycling.

3. Conflicting Warranty Durations Across Divisions

Conflicting warranty requirements arise when Division 01 establishes a standard duration, but individual technical sections prescribe different or incompatible terms for the same system or component. These discrepancies create uncertainty about which obligation prevails, complicate contractor pricing, and introduce risk during closeout and post-occupancy phases. The misalignment also undermines the internal coherence of the project manual and can hinder the architect's ability to enforce warranty obligations consistently and predictably.

Representative examples of deficiencies may include:

- **Section 08 43 13 Aluminum Storefronts:** Division 01 requires a one-year warranty for envelope components, but the storefront section mandates a three-year system warranty plus a 10-year finish warranty, creating ambiguity over which terms govern the storefront assembly.
- **Section 23 21 13 Hydronic Piping:** Division 01 establishes uniform warranty terms for mechanical systems, yet the piping section calls for a manufacturer-backed warranty tied to specific water treatment conditions that are not referenced elsewhere, resulting in conflicting obligations at closeout.
- **Section 26 51 00 Interior Lighting:** The technical section specifies a five-year luminaire warranty tied to the driver and control components, but Division 1 outlines a shorter warranty period for electrical equipment, leaving unclear which requirement applies to integrated lighting systems.

D. Coordination Errors with Drawings

Coordination errors between drawings and specifications occur when the two documents define products, assemblies, or dimensions inconsistently. If drawings assume one set of materials while the specifications require another, or if the depicted geometry cannot realistically meet the specified performance criteria, ambiguity results. These discrepancies can complicate bidding, create fabrication uncertainty, disrupt installation sequencing, and trigger avoidable RFIs, ultimately blurring design intent and undermining confidence in the contract documents as a coherent technical and aesthetic record.

Representative examples of deficiencies may include:

- **Section 05 12 00 Structural Steel Framing:** The drawings indicate wide-flange beams of a specific size and orientation, while the specification references an alternate steel grade and connection detailing scheme, creating conflicting assumptions that affect fabrication, erection sequencing, and load-path continuity.
- **Section 06 20 00 Finish Carpentry:** Interior elevations call for custom millwork profiles and built-in dimensions that differ from the material species, core construction, and finish system prescribed in

the specification, resulting in incompatible fabrication requirements and uncertain pricing during bidding.

- **Section 32 14 00 Unit Paving:** The civil drawings show a modular paver layout with joint spacing and base thicknesses that cannot meet the compressive strength and bedding requirements described in the specification, leading to discrepancies that complicate subgrade preparation, drainage expectations, and installation sequencing.

E. Applicable Code Violations

1. 'Specified Product' Does Not Meet Code

Code violations occur when a specification names a product, system, or assembly that cannot meet the requirements of the applicable building, fire, or electrical code, etc., or statutory requirements governing its intended use. Such inconsistencies can delay permitting and, if not caught early, may lead to failed inspections and compromise the project's ability to be occupied or used as intended.

Representative examples of deficiencies may include:

- **Section 04 20 00 Unit Masonry:** A specified exterior brick veneer system is identified as the BOD even though it lacks the required code-recognized evaluation report for use in high-seismic regions, making it unacceptable under the governing structural design category despite being named in the specification.
- **Section 21 13 13 Wet-Pipe Sprinkler Systems:** The specification designates a preferred sprinkler head model that does not carry the occupancy-specific listing required by the state-adopted fire code, resulting in submittals that cannot pass fire marshal review even though the product appears to meet general NFPA criteria.
- **Section 10 22 26 Operable Partitions:** The specified operable wall system is selected for its acoustic performance, yet it lacks a code-approved fire-resistance rating required for partitions adjacent to egress pathways, leading to rejection at plan review and necessitating a system change after bidding

2. State Code Requirements

In addition to model codes and national standards, many jurisdictions impose state-level requirements that significantly affect product selection, testing protocols, approval pathways, and project documentation. These requirements may include state approval programs, enhanced energy or sustainability mandates, specialized structural or environmental criteria, or sector-specific regulations for facilities such as healthcare and education. Specifications should incorporate these obligations into clear acceptance pathways, reference the correct edition years and local amendments, and require submittals such as listings, evaluation reports, and verification forms that align with the project's occupancy, risk classification, and environmental exposure.

Some examples of state specific requirements include:

- **Florida’s** regulatory framework imposes performance requirements that exceed national standards, particularly within coastal regions and High Velocity Hurricane Zones (HVHZ).⁴³ Many assemblies must comply not only with elevated wind and debris-impact criteria but also with Florida Product Approvals (FPA)⁴⁴ and, where applicable, Miami-Dade Notices of Acceptance (NOAs).⁴⁵ Specifications fall short when they reference only generic ASTM or ANSI standards without linking acceptance to the current Florida Building Code, applicable approval listings, exposure categories, and local amendments. Without these connections, performance language can become unenforceable during permitting, submittal review, or inspection, as authorities rely on jurisdiction-specific listings to verify compliance.
- **California’s** regulatory environment is similarly complex, with Title 24 energy standards,⁴⁶ CalGreen requirements,⁴⁷ stringent seismic anchorage provisions,⁴⁸ and local planning overlays all shaping material and assembly acceptance. In Wildland/Urban Interface (WUI) zones, additional fire-exposure and ignition-resistance criteria apply,⁴⁹ while healthcare projects introduce further state-specific review and oversight requirements that extend beyond national norms.⁵⁰ Specifications that rely solely on generic standards, without explicit alignment to Title 24 testing protocols, WUI listings, seismic detailing requirements, or the applicable healthcare review pathway, are vulnerable to plan-check corrections and inspection failures.

Representative examples of deficiencies may include:

- **Section 03 30 00 Cast-in-Place Concrete:** In states with enhanced seismic requirements, the specification may require anchorage hardware and reinforcing details that comply with a state-adopted seismic design appendix, yet the section references only generic national standards.
- **Section 22 40 00 Plumbing Fixtures:** In jurisdictions with elevated water-efficiency mandates or state-specific plumbing-fixture certification programs, drawings may indicate a fixture family that meets national criteria, while the specification omits the required state-level listings and performance documentation.
- **Section 12 50 00 Furniture:** For education and healthcare projects in states with specialized environmental-health requirements, the specification may identify a BOD furniture system without requiring the state-specific emissions testing, durability certifications, or procurement documentation necessary for approval.

⁴³ Windload Solutions. *Florida HVHZ State-wide High Velocity Hurricane Zone building code standards* [https://windload.solutions/hvhz-florida-requirements]

⁴⁴ LegalClarity. *Florida Product Approval and the Florida Building Code*. [https://legalclarity.org/florida-product-approval-and-the-florida-building-code]

⁴⁵ MiamiDadeApprovals. *Miami Dade NOA 101*. [https://www.miamidadeapprovals.com/miami-dade-noa-101]

⁴⁶ LegalClarity. *Title 24 Compliance: California Energy Efficiency Standards*. [https://legalclarity.org/title-24-compliance-california-energy-efficiency-standards]

⁴⁷ OneClickLCA. *CALGreen: A comprehensive guide to Title 24, Part 11 regulations* [https://oneclicklca.com/en-us/resources/articles/calgreen-a-comprehensive-guide-to-title-24-regulations]

⁴⁸ California Department of General Services. *Chapter 16A Structural Design*. [https://www.dgs.ca.gov/BSC/Resources/2022-Title-24-California-Code-Changes/Part-2-Chapter-16A-Structural-Design]

⁴⁹ All Weather Wood. *California – Building Codes & the Wildland-Urban Interface*. [https://www.allweatherwood.com/wp-content/uploads/2025/03/WUI-Codes-CA-2025.pdf]

⁵⁰ California Department of Health Care Access and Information. *Design Guide for Working on Projects Under OSHPD Jurisdiction*. [https://hcai.ca.gov/wp-content/uploads/2024/05/Design_Guide-Working_on_Projects_Under_OSHPD_Jurisdiction-FINAL_-A-1.pdf]

F. Omitted Information

Ambiguity in specification language arises when directives lack the clarity needed to create enforceable obligations and measurable outcomes. Vague statements that defer decisions to the contractor or rely on undefined equivalency, without identifying required products, performance thresholds, or durability criteria, provide no objective basis for evaluation. Without explicit acceptance criteria, bidders interpret requirements differently, pricing becomes inconsistent, and field execution varies, weakening alignment with design intent. Such omissions also make it harder to enforce requirements during submittal review and construction observation, increasing the risk that short-term cost choices will override long-term performance needs.

Representative examples of deficiencies may include:

- **Section 02 41 19 Selective Demolition:** The section instructs the contractor to “remove systems as required for new work” without identifying the specific systems, limits of removal, or protection requirements, leaving the scope open to interpretation and producing inconsistent pricing and field execution.
- **Section 05 50 00 Metal Fabrications:** The specification states that miscellaneous metal supports must be “equal to the basis-of-design,” yet provides no performance criteria, load capacities, corrosion-resistance thresholds, or coating requirements, resulting in submittals that rely on contractor preference rather than measurable equivalency.
- **Section 09 51 00 Acoustical Ceilings:** The section requires the ceiling system to “meet acoustic and durability requirements” without defining minimum NRC or Ceiling Attenuation Class (CAC) ratings, edge conditions, humidity resistance, or compatibility with the mechanical layout, creating ambiguous acceptance criteria that weaken enforceability during submittal review.

G. Nonconstructible Requirements

1. Commercially Unavailable Products

Nonconstructible specifications often result from requirements that exceed what the market can realistically provide at the time of procurement, such as citing standards for which no manufacturer holds a current listing, demanding performance values beyond tested capacities, or mandating testing protocols not offered by accredited laboratories. When specifications move beyond verifiable, commercially available solutions, they become aspirational rather than enforceable, making compliant procurement unattainable within typical schedule and budget constraints. This disconnect destabilizes the bidding environment, prompting contractors to qualify or withdraw bids, price uncertainty rather than defined scope, and initiate reactive substitution processes that erode competitive bidding and compromise project predictability.

Representative examples of deficiencies may include:

- **Section 11 53 00 Laboratory Equipment:** The specification requires fume hoods to be certified to a newly issued performance standard for which no manufacturer yet holds an accredited listing, making it impossible for bidders to provide a compliant system within the project schedule.
- **Section 32 12 16 Asphalt Paving:** The section mandates a pavement mix design achieving a modulus value significantly above any mix currently approved by the state transportation authority, creating a performance requirement that the regional market cannot produce or certify.
- **Section 13 34 19 Metal Building Systems:** The specification calls for full-scale dynamic testing of the building enclosure using a protocol not offered by any accredited laboratory, rendering the verification pathway unattainable and forcing contractors to qualify bids or propose unplanned substitutions.

2. Means and Methods Conflicts

Specifications can become impractical when they prescribe execution conditions that conflict with reasonable construction means and methods, such as environmental controls, sequencing directives, or curing requirements that exceed the capabilities of typical temporary systems or disregard realistic access, trade coordination, and seasonal constraints. Although specifications should define required outcomes and measurable acceptance criteria, prescriptive language that dictates unrealistic procedures can create conditions that are neither achievable nor aligned with how competent contractors plan and execute work. Such unworkable requirements often lead to schedule compression, change orders for upgraded temporary systems, and field improvisations that compromise quality and may introduce safety concerns.

Representative examples of deficiencies may include:

- **Section 03 35 00 Concrete Finishing:** The specification requires continuous curing under tightly controlled temperature and humidity conditions that exceed the capacity of typical temporary enclosures for the project size and season, resulting in a procedure that cannot be achieved without extraordinary and unplanned temporary systems.
- **Section 07 10 00 Dampproofing and Waterproofing:** The section mandates staged installation sequencing that assumes uninterrupted access to below-grade surfaces, even though the site logistics and shoring configuration shown in the drawings make the prescribed sequence physically impossible.
- **Section 09 90 00 Painting and Coating:** The specification requires surface preparation and coating application within environmental ranges narrower than those attainable in occupied renovation areas, ignoring ventilation limitations and producing an execution requirement that cannot be met without significant schedule disruption.

H. Over-Specifying

Over-specifying occurs when the specification imposes performance criteria, product classifications, or testing requirements that exceed what is necessary to meet code, satisfy the project's risk profile, or achieve the owner's stated objectives. These inflated requirements can unintentionally limit market

competition, drive unnecessary cost increases, and create procurement challenges when only a small subset, if any, of the available products can meet the elevated thresholds. Over-specification may also introduce enforceability issues if the stated criteria lacks industry precedent or exceeds recognized testing protocols, leaving contractors and reviewers without a practical means of demonstrating compliance.

Representative examples of deficiencies may include:

- **Section 08 35 13 Folding Glass Walls:** The specification mandates thermal-resistance and air-infiltration values substantially higher than any manufacturer publishes for this product category and unnecessary to meet any programmatic requirements, resulting in an over-specification that restricts market participation and increases cost without clear project justification.
- **Section 32 31 13 Chain-Link Fencing:** The specification calls for a high-security mesh gauge and premium coating system not aligned with the site's actual exposure or security requirements, narrowing the product field and elevating lifecycle cost without commensurate performance benefit.
- **Section 23 21 13 Hydronic Piping:** The section requires all pipe, fittings, and valves to meet pressure ratings typically reserved for high-temperature industrial applications, even though the design conditions fall within standard commercial ranges. This over-specification increases material costs and reduces supplier options without enhancing system performance or reliability.

I. Poor Coordination with Consultants

Insufficient coordination between architect-authored and consultant-authored sections can inject major inconsistencies into the project manual, especially when teams work in silos or reuse templates that are not aligned with Division 01 or project-specific requirements. Results may include mismatched testing standards, conflicting procedures and submittals, unclear system responsibilities and interfaces, and inconsistent terminology. Since these sections govern critical systems, even small gaps can obscure contractual obligations, weaken enforceability, and disrupt procurement, review, and commissioning. These issues typically surface during submittal review or in the field, prompting clarification cycles, recoordination, integration delays, and added risk from unclear roles, responsibilities, and acceptance criteria.

Representative examples of deficiencies may include:

- **Section 26 32 00 Packaged Engine Generators:** The electrical specification requires a specific generator testing protocol and startup procedure, while the architectural Division 01 commissioning section cites a different testing standard and documentation format, creating misalignment in acceptance requirements and submittal pathways.
- **Section 23 09 23 Direct Digital Control Systems:** The mechanical controls specification requires compliance with a Building Automation and Control networks (BACnet) protocol revision listed in Division 01, but the electrical consultant's section references an older BACnet edition and a different point-naming convention. This mismatch leads to incompatible control sequences, inconsistent

trending and alarm requirements, and confusion over which documentation format governs during commissioning.

- **Section 21 12 00 Fire-Suppression Standpipes:** The fire protection specification references a hydraulic-calculation standard that conflicts with the edition mandated in the architectural code summary. The discrepancy results in differing design densities and pressure requirements, forcing the contractor to seek repeated clarifications during submittals and delaying coordination with the plumbing and structural disciplines.

VIII. Forensic Indicators of Defective Specifications

The following summary outlines key forensic indicators that commonly signal specification defects during bidding and construction phases. Patterns emerging in RFIs, submittals, change orders, field performance, or procurement claims can help project teams identify root causes quickly, prioritize corrective measures, and stabilize project delivery. These indicators should be treated as diagnostic cues, not definitive findings, as similar symptoms may also stem from contractor performance issues and therefore require careful evaluation.

A. RFI Clusters Concentrated Within the Same Specification Section

A concentrated surge of RFIs directed at a single specification section, particularly if early during construction performance, often signals underlying defects such as internal inconsistencies, omitted information, or unresolved coordination issues. When contractors encounter conflicting provisions, ambiguous terminology, or unclear performance expectations, they must seek clarification before procurement, which produces clusters of RFIs that indicate systemic rather than isolated ambiguity. When multiple trades raise similar questions at the same time, the pattern becomes even more indicative of specification weakness. Such early activity should prompt a focused review of the affected sections to identify and correct the root causes.

B. Elevated Submittal Rejection Rates

A specification section that repeatedly produces an elevated level of first-pass submittal rejections often signals a fundamental disconnect between the written requirements and the system intended for installation. Such rejection patterns typically arise when the specification is misaligned with the performance characteristics of the BOD product, contains outdated or nonconstructible provisions, or conflicts with the drawings. Elevated rejection rates introduce excessive resubmittal cycles, increase administrative burden, and heighten schedule risk. As a forensic indicator, sustained rejection at this level suggests that the specification is not functioning as a coordinated or enforceable contract document.

C. Recurring Change Orders Tied to the Same Assembly or System

A concentration of change orders associated with a single system or assembly often indicates that the original specification did not fully define the required performance or was not properly aligned with the drawings. Insufficient detailing of interfaces, accessories, or testing expectations can lead to scope disputes once construction begins. When multiple change orders cluster around the same system, the pattern often reflects inadequate specification, omitted constraints, or incomplete coordination across divisions, revealing that the initial documents may not have provided a reliable basis for bidding or installation.

D. Field Failures in the Absence of Preconstruction Testing or Mockups

Observable failures during installation, including moisture intrusion, loss of adhesion, coating breakdown, or improper accommodation of movement, often indicate that the specification omitted essential preconstruction testing, mockup requirements, or field-verification procedures. When performance characteristics are not validated through adhesion tests, compatibility evaluations, or environmental simulations, the first indication of incompatibility often emerges only during construction, when corrective action is most disruptive and costly. Such field failures frequently trace back to specification gaps in performance criteria, acceptance thresholds, or required testing frequency, revealing that the document did not provide a sufficiently rigorous basis for quality assurance.

E. Nonavailability or Discontinuation Claims by Bidders or Subcontractors

Substitution requests citing discontinued products, expired listings, or unavailable configurations suggest that the specification may have referenced outdated standards, legacy products, or proprietary systems with no active market support. This occurs when the specification relies on older edition years, brand-specific requirements without alternates, or limited-source products no longer manufactured. Such claims are forensic red flags, indicating that the specification was not updated during design milestones or was not validated against current market availability. Nonavailability issues also often lead to procurement delays, price volatility, and the need for late-stage redesign.

IX. Practical Tools for Preparing Accurate Specifications

Accurate and enforceable specifications depend not only on technical rigor but also on disciplined processes that support clarity, consistency, and traceability across the project's full lifecycle. This section presents a suite of practical tools that reinforce the internal coherence of the project manual and strengthen alignment between drawings, specifications, and jurisdictional requirements. By integrating these tools into the design process, teams can identify discrepancies early, maintain cross-disciplinary coordination, ensure that performance criteria, administrative procedures, and acceptance standards are

communicated with precision, and generally avoid allegations of defective specifications down the road. Together, these mechanisms form a conceptual quality framework that reduces ambiguity, supports predictable procurement and construction outcomes, and elevates the overall reliability of the contract documents.

A. Potential Milestone Quality Assurance / Quality Control Checklist

1. Review Processes

- **Align Specification Development With Design Milestones:**

Develop a specification workplan that maps each section to schematic design, design development, and construction document deliverables, establishing early freeze points for high-risk sections. Conduct milestone audits to confirm that design decisions, owner requirements, and code pathways are accurately incorporated.

- **Interdisciplinary Alignment:**

Engage all primary sub-consultants in the structured review cycles associated with each design phase to maintain interdisciplinary alignment and consistent quality control across the entire project manual, rather than limiting review responsibilities to architectural sections alone.

- **Implement a Layered Review and Independent Quality Assurance / Quality Control:**

Require review by the section author and discipline lead, supported by an independent quality assurance / quality control reviewer who can assess clarity, enforceability, and cross-section coordination. This layered approach reduces the likelihood of contradictory, obsolete, or unenforceable requirements.

- **Maintain a Master Edits Log:**

Document deviations from firm master language and record the rationale, referencing relevant code interpretations, owner directives, or performance considerations. A well-maintained log strengthens internal consistency, supports institutional knowledge, and provides defensibility during contract administration and dispute resolution.

2. Project Manual Consistency

- **Consistency Checks:**

Perform automated and manual checks of referenced standards, edition years, Division 01 requirements, and related drawing notes. Verify that performance thresholds, terminology, and acceptance criteria are coordinated across sections and consistently reflected throughout the construction documents.

- **Cross-Reference Checks:**

Implement a layered reference-control process that incorporates both automated and manual verification. Automated cross-reference and hyperlink checks should be performed before each milestone issuance to identify missing, outdated, or mismatched citations. These tools should be supplemented with manual index reviews to confirm that all referenced sections are present, correctly titled, and coordinated with current numbering conventions.

3. Division 01 Alignment

- **Consistency of Administrative Requirements:**

Confirm that substitution procedures, warranty durations, testing responsibilities, and coordination protocols are presented consistently across all technical sections and are fully aligned with Division 01. Verify that no section introduces conflicting processes or durations that would create administrative ambiguity during bidding or contract administration. Consider preparing warranty and testing matrices to accompany the submittal matrix.

- **Uniform Use of Terminology:**

Ensure that key administrative terms, such as action submittals, informational submittals, closeout submittals, record documents, and QA requirements, are uniformly defined and referenced. This prevents divergent interpretations among bidders and smooths review workflows.

4. Section Coherence

- **Internal Consistency of Standards and Editions:**

Validate that Parts 1, 2, and 3 reference the same standards, testing protocols, and edition years.

- **Measurable and Enforceable Acceptance Criteria:**

Confirm that acceptance criteria are expressed in quantifiable, verifiable terms, with clear thresholds and methods of measurement. Avoid qualitative or subjective language that cannot be reliably enforced.

- **Mockup Requirements With Defined Outcomes:**

Ensure mockups are described with explicit pass/fail benchmarks, including evaluation criteria, dimensional tolerances, finish expectations, and reuse/disposal instructions. Where the mockup will serve as the benchmark for production work, ensure that the specification explicitly states this role.

5. Product Performance Alignment

- **BOD Compliance Verification:**

Verify that the BOD product can meet each stated performance requirement, test protocol, and interface condition. If gaps exist, revise either the BOD or the performance thresholds to maintain coherence and avoid setting contradictory expectations.

- **Product Characteristics:**

All product characteristics should be consolidated within Part 2 of the specification section with any duplicative or conflicting statements removed. Where variations are necessary based on location or condition, they should be clearly defined through structured schedules that are fully coordinated with the drawings.

- **Defined Equivalency Criteria:**

For any “or equal” provisions, ensure that equivalency criteria are stated in objective, evidence-based terms (e.g., test results, certifications, dimensions, compatibility requirements, warranty conditions). This ensures transparency in evaluating substitution requests and prevents subjective interpretation.

- **Product Compatibility:**

Establish a structured compatibility-verification workflow that begins during design and continues through submittals and mockups. Specifications should require formal compatibility documentation from manufacturers that addresses the project’s specific substrates, environmental exposure, and interface conditions rather than relying on generic product data. Mockups should be mandated to replicate critical transitions and conditions so that compatibility and performance can be validated under representative field conditions. Where appropriate, designate single-source responsibility for contiguous systems to reduce inter-manufacturer conflicts and clarify accountability for overall system performance

6. Drawings Coordination

- **Assembly-to-Specification Mapping:**

Confirm that every major assembly, system, and component shown on the drawings has a corresponding specification section that describes its administrative, performance, product, and execution requirements. Missing or mismatched sections create scope gaps and bid inconsistencies.

- **Dimensional and Execution Compatibility:**

Check that dimensional tolerances, installation methods, and sequencing described in the specifications are achievable with the details, sections, and schedules shown on the drawings. Ensure no conflicts exist between allowable tolerances and depicted geometries, panel layouts, or finish transitions.

7. Code and AHJ Compliance

- **Coordinate Code Requirements Across Drawings and Specifications:**

Ensure that all code-critical information, including fire ratings, energy code requirements, seismic details, and wind or pressure design values, among others, remains consistent across drawings, schedules, and specifications. Conduct milestone cross checks to confirm that product approvals and listings align with the assemblies and details presented in the design documents.

- **Verification of Product Listings and Approvals:**

Ensure that all specified products are tied to valid and current listings, evaluation reports, and approval numbers consistent with the jurisdiction and occupancy. Expired, superseded, or incomplete listings should be corrected prior to issuance. Confirm that applicable local code amendments, environmental overlays, and state specific requirements (e.g., Florida Product Approvals, Miami Dade NOAs, California Title 24, WUI designations, seismic anchorage criteria, etc.) are explicitly addressed within the specifications and coordinated with drawings.

- **Require Evidence of Compliance at Submittal:**

Require submittal of all applicable compliance documentation, including data such as listing numbers, evaluation reports, seismic anchorage calculations, and completed acceptance test forms, among others. Each document should clearly identify limitations of use and should align with the project-specific requirements.

8. Constructibility Review

- **Feasibility of Environmental and Temporary Conditions:**

Evaluate whether environmental constraints required by the specifications, such as temperature, humidity, ventilation, and curing conditions, are realistically achievable using typical temporary services and within project phasing. Requirements that exceed plausible site conditions should be revised or justified with documented temporary measures.

- **Testing Frequency and Budget Alignment:**

Confirm that the number of required tests, locations, and sampling frequencies are realistic, consistent with project scale, and accounted for in anticipated budgets. Overly aggressive testing regimes can cause delays and disrupt sequencing; insufficient testing may compromise quality assurance.

- **Contractor Involvement:**

Engage a qualified builder to review the construction documents for potential issues related to sequencing, schedule feasibility, means and methods, procurement lead times, and other factors that may materially affect construction duration or cost.

B. Potential Submittal Matrix Template

A submittal matrix provides a unified structure for consolidating all submittal requirements across Division 01 and the technical sections. It clarifies responsibilities, sequencing, and acceptance criteria, reducing ambiguity during procurement and construction while offering contractors a clear roadmap for compliance and giving the architect a single, coordinated reference tool. The format may vary, but the following categories should be considered for inclusion.

1. Action Submittals

- a. **Shop Drawings:** Project specific drawings showing dimensions, interfaces, anchorage, and coordination with adjacent systems.
- b. **Product Data:** Manufacturer literature with the contractor's selections clearly marked, including performance values and options.
- c. **Samples:** Material and finish samples sized appropriately for review, especially where color, texture, or sheen affect design intent.
- d. **Mockup Plans:** Identification of mockup scope, location, and evaluation criteria, including whether the mockup will serve as the acceptance benchmark.

2. Informational Submittals

- a. **Certificates and Qualifications:** Installer certifications, manufacturer approvals, and required experience documentation.
- b. **Test Reports (Edition Specific):** Laboratory and field test results citing the exact standard and edition used.
- c. **Quality Assurance Records:** Documentation supporting required workmanship or fabrication standards.
- d. **Closeout Documents:** Operation and maintenance (O&M) manuals, warranties, and record information coordinated with Division 01.

3. Timing and Sequencing

- a. **Long Lead Items:** Identification of systems requiring early submittal to accommodate longer production and delivery time requirements.
- b. **Dependency Mapping:** Logical relationships, such as substrate approval before finish submittals, or delegated design calculations before fabrication drawings.
- c. **Milestone Alignment:** Coordination with the project schedule and procurement windows.

4. Acceptance Requirements

- a. **Pass/Fail Criteria:** Measurable thresholds tied to performance, dimensions, finishes, or required certifications.
- b. **Review Authority:** Identification of who reviews each submittal, including the architect, engineer of record, specialty consultant, or delegated engineer, based on content and scope.

5. Use as a Submittal Log

- a. **Submission and Response Dates:** Track dates of submission, response, review time, and action taken.
- b. **Version Control:** Number the resubmissions and track the same data as the initial submission

C. Potential Testing Requirements Table

Including a dedicated testing table within the project manual can serve as an effective complement to the submittal matrix, providing a centralized framework for tracking all laboratory and field-testing requirements across divisions. By consolidating references to testing standards, edition years, acceptance thresholds, witnessing obligations, and documentation requirements, the table helps project teams maintain a clear understanding of the verification activities required throughout construction. This structure also supports transparency during bidding and early procurement by outlining test frequency, sequencing dependencies, and coordination needs that might otherwise be distributed across numerous specification sections. When properly implemented, it functions as an organizational anchor that enhances constructibility and reinforces quality expectations across the project.

To maintain accuracy, the testing table should be populated through automated references to the governing specification sections, such as hyperlinks or structured data pulls, rather than through manual entry. Automated linkage reduces the risk of discrepancies when standards are updated, when specification sections are renumbered, or when test requirements evolve during design development. This approach ensures that the table remains synchronized with the technical content of the project manual, strengthening internal consistency and reducing administrative overhead. Improperly managed tables that rely on manual inputs, by contrast, can become sources of confusion, containing outdated thresholds, incorrect edition years, or incomplete listings of required tests.

As part of routine quality control during specification development, the design team should verify that the testing table fully and correctly cross-references all project-specific requirements. This review should occur at each major milestone to confirm alignment with Division 01, discipline-specific technical sections, and any project-specific commissioning or jurisdictional requirements. Ensuring that every relevant section is represented and accurately linked not only improves internal coherence but also provides contractors, inspectors, testing agencies, and commissioning agents with a reliable, consolidated reference. When maintained rigorously, the testing table becomes an integral tool for managing quality assurance, supporting code compliance, and promoting predictable construction outcomes.

X. Building a Culture of Specification Quality

High-performing project teams increasingly recognize that well-developed construction specifications are fundamental to design clarity, risk management, and contract enforceability. While drawings frequently illustrate design intent, specifications establish the measurable thresholds, administrative procedures, and acceptance criteria that determine whether the built work aligns with expectations. Despite their importance, many firms lack a unified governance model for developing, maintaining, and coordinating specifications. The following framework outlines core organizational practices, spanning ownership, tools, training, consultant alignment, constructibility input, and continuous learning, that collectively elevate quality and reduce downstream risk.

A. Ownership and Governance

A quality specification program begins with clearly defined leadership. Assigning a dedicated specifications lead, empowered with the authority to enforce firm-wide standards, maintain master documents, and guide authorship, ensures that specifications evolve in a coherent and controlled manner. This individual serves as the central steward of quality by coordinating inputs from multiple disciplines and maintaining consistency with Division 1, code requirements, and firm best practices.

A common failure point is the diffusion of authority across numerous team members without a governing framework. This approach often produces fragmented language, inconsistent terminology, and contradictory requirements. Centralized oversight helps prevent these issues by ensuring that all sections, regardless of author, follow the same formatting, hierarchy, terminology, and performance conventions. The specifications lead also becomes responsible for onboarding new contributors and establishing expectations for editing discipline, milestone reviews, and cross-section coordination.

B. Authoring Tools and Technical Infrastructure

Modern specifications require more than text editing; they depend on tools that support accuracy, traceability, and consistency. A robust authoring environment should include:

- Edition-controlled master documents that prevent drift across projects and maintain the integrity of baseline language.
- Reference and hyperlink checkers that automatically validate cross references, standard citations, and intra manual dependencies before each milestone release.
- Clause libraries tagged by climate zone, code family, construction type, and building program, allowing authors to rapidly assemble project appropriate content while eliminating unneeded options.

C. Training and Skill Development

Specifications require a specialized skill set, one which is often underdeveloped in traditional architectural training. Firms benefit significantly from establishing recurring coursework or round-table discussions focused on elevating author capability in key areas such as:

- Writing measurable, enforceable criteria instead of subjective or ambiguous directives.
- Selecting appropriate test methods and aligning requirements with BOD capabilities.
- Ensuring Division 01 harmonization, so that administrative procedures, submittals, and quality-control pathways are consistent across technical sections.

D. Consultant Integration

Engineering consultants play a critical role in shaping the overall specification package, and their sections should integrate seamlessly with architectural Division 01 requirements. To support this alignment, firms should require:

- Edition reconciliation tables from consultants, confirming that all referenced standards align with the governing code edition and Division 01 requirements.
- Explicit confirmation of Division 01 coordination, including submittal procedures, closeout requirements, testing protocols, and commissioning pathways.

E. Constructability and Market Alignment Reviews

Specification quality can often benefit from the insight of professionals familiar with construction means and methods. Engaging a contractor or construction manager during design development and again at the 50% construction documents stage can help align the specification with prevailing market conditions, available products, and practical sequencing considerations. These reviews should be structured and documented, capturing:

- Feasibility of performance thresholds
- Availability of products matching the specified criteria
- Practicality of sequencing, environmental conditions, and tolerances
- Integration of system responsibilities across trades

F. Lessons Learned and Continuous Improvement

A specification program achieves long-term value when it incorporates feedback from actual project performance. After substantial completion, firms should conduct a post project assessment that evaluates:

- Submittal patterns (including frequent clarifications and substitutions)
- RFI trends indicating ambiguous or conflicting language
- Change orders tied to documentation gaps or coordination failures
- Field testing or inspection issues
- Any warranty, commissioning, or performance deviations

XI. Conclusion

Specifications function as a core instrument for translating design intent into measurable requirements, enforceable procedures, and clear acceptance criteria. Their strength depends on organization, internal coherence, alignment with drawings, jurisdictional mandates, and market capabilities. The professional standard of care provides the benchmark for evaluating their adequacy, while the principles surrounding risk allocation reinforce the need for specifications that are constructible, coordinated, and technically sound. Adequacy does not demand perfection, but rather a disciplined, thoughtful approach shaped by project context, scale, and complexity.

Recurrent issues such as unedited template language, internal contradictions, outdated references, or misalignment between performance thresholds and the basis-of-design often signal deeper process gaps. Observable indicators, including concentrated RFIs, high first-pass submittal rejection rates, recurring change orders, and field failures associated with missing testing or mockup requirements, can point to potential defects in the Specifications. Addressing these issues early reduces pricing uncertainty, limits

schedule impacts, and improves enforceability throughout construction. At the same time, varying project types and delivery methods require tailored processes, recognizing that not every tool or control is necessary for every engagement.

Quality improves most reliably when supported by structured practices that strengthen clarity, coordination, and traceability. A disciplined approach that includes milestone quality assurance / quality control reviews, alignment with Division 01, well-organized submittal and testing matrices, and consistent integration of consultant inputs establishes a coherent framework for reducing ambiguity across the documents. Incorporating constructability insights and lessons learned from completed projects further supports continuous refinement of both content and process. When these measures are scaled appropriately to the project's complexity and applied with informed judgment, they contribute to more predictable procurement outcomes, more consistent execution in the field, and more reliable contract documents overall.

About the Author

Sam Haagenson is a Managing Director at Ankura and a leading expert in construction disputes, including the evaluation of contractor terminations, design errors and omissions, defective construction, contract administration, and architectural standard of care. His work includes advising clients on various types of projects, including public and private vertical construction, infrastructure projects, and specialized federal construction projects for the Departments of Defense and State across North America, Europe, Asia, and the Middle East. Sam has more than 20 years of experience in the design and construction industries, including prior roles as a project architect, construction manager, and distressed projects consultant.

Sam's clients include owners, developers, design firms, contractors, sureties, and public entities, whom he has advised on more than 200 distressed projects and disputes. He provides in-depth analysis of technical design and construction issues, regularly authors expert reports, and provides expert testimony on complex matters, typically addressing causation, entitlement, and allocation of responsibility amongst project participants, as well as strategies for completion following contractor default.

Sam is currently licensed as an architect in 13 U.S. jurisdictions, licensed as a general contractor, a member of the AIA, certified by the NCARB, and he is a Certified Construction Contract Administrator (CCCA) and Construction Document Technologist (CDT). He has a Doctor of Architecture degree from the University of Hawaii and a degree in architectural technology from Lake Superior, and he regularly contributes to the industry through presentations and panel discussions at conferences, in addition to various writings and webinars on topics relevant to construction disputes.

Glossary

Action Submittals: Submittals that require the architect's review and approval before fabrication, procurement, or installation proceeds; examples include shop drawings, product data with selected options, samples, and mockup proposals.

Authorities Having Jurisdiction (AHJs): Governmental or regulatory bodies that interpret and enforce applicable codes, ordinances, and regulations for the project, such as building departments, fire marshals, and health departments.

Basis-of-Design (BOD): A specifically identified product, system, or assembly used to establish the intended performance, quality, and functionality against which proposed equivalents are evaluated.

Contract: The binding agreement between an owner and contractor that sets rights, responsibilities, scope, and obligations; it typically incorporates drawings, specifications, general and supplementary conditions, and other listed documents. "Contract," as used herein, may also refer to the agreement between an owner and architect.

Contract Administration: The architect's services during the construction phase of a project, including reviewing submittals, interpreting contract documents, evaluating change requests, certifying payments, observing work, and determining compliance with the contract.

Divisions: Top-level organizational groupings from CSI's MasterFormat that categorize the type of work, designed to be consistent across all construction projects.

Drawings: Graphic documents that convey quantitative, dimensional, and spatial requirements of the design, including plans, elevations, sections, details, and schedules.

General Conditions: Standard contract provisions setting administrative, procedural, and legal requirements for the project, often based on documents such as AIA A201.

Informational Submittals: Submittals provided for record or verification that do not require architect approval, such as certificates, test reports, installation instructions, and qualifications.

MasterFormat: CSI's standardized numbering and titling system used to organize specifications and related information into divisions and sections.

Master Specification: A firm's editable library of guide specification sections used as the baseline for developing project-specific specifications.

Parts: The three components of a specification section, as defined by CSI's SectionFormat, including:

Part 1 – General (administrative/procedural)

Part 2 – Products (materials/performance)

Part 3 – Execution (installation/field quality).

Project Manual: The compilation of written contract documents for bidding and construction, typically including technical specifications, bidding requirements, contract forms, general and supplementary conditions, and other administrative documents.

Requests for Information (RFIs): Formal contractor inquiries seeking clarification of discrepancies, omissions, or uncertainties in the contract documents during bidding or construction.

SectionFormat: CSI's three-part organizational framework (General, Products, Execution) for structuring individual specification sections consistently.

Sections: Individually numbered and titled specification units within a division that define administrative, product, and execution requirements for a specific scope (e.g., Specification Section 08 71 00 Door Hardware)

Specifications: Written technical requirements that define materials, workmanship, performance criteria, and administrative procedures necessary to achieve the design intent.

Standard of Care: The level of professional skill and diligence ordinarily exercised by reasonably prudent architects practicing under similar circumstances in the same time and locality; it does not require perfection.

Supplementary Conditions: Project-specific modifications or additions to the General Conditions that adjust responsibilities, procedures, or requirements for the particular project, often based upon owner or jurisdiction-specific needs.