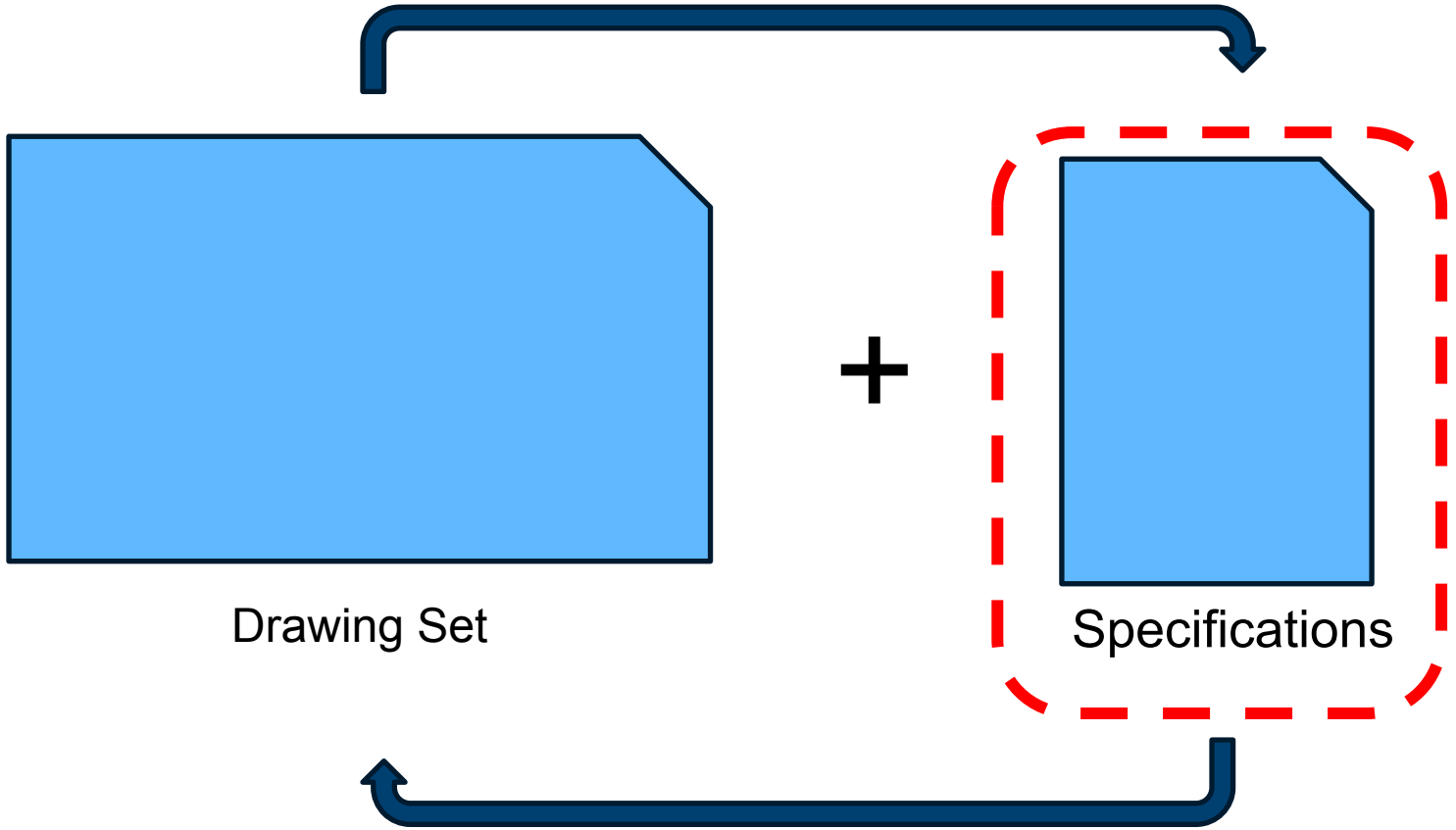
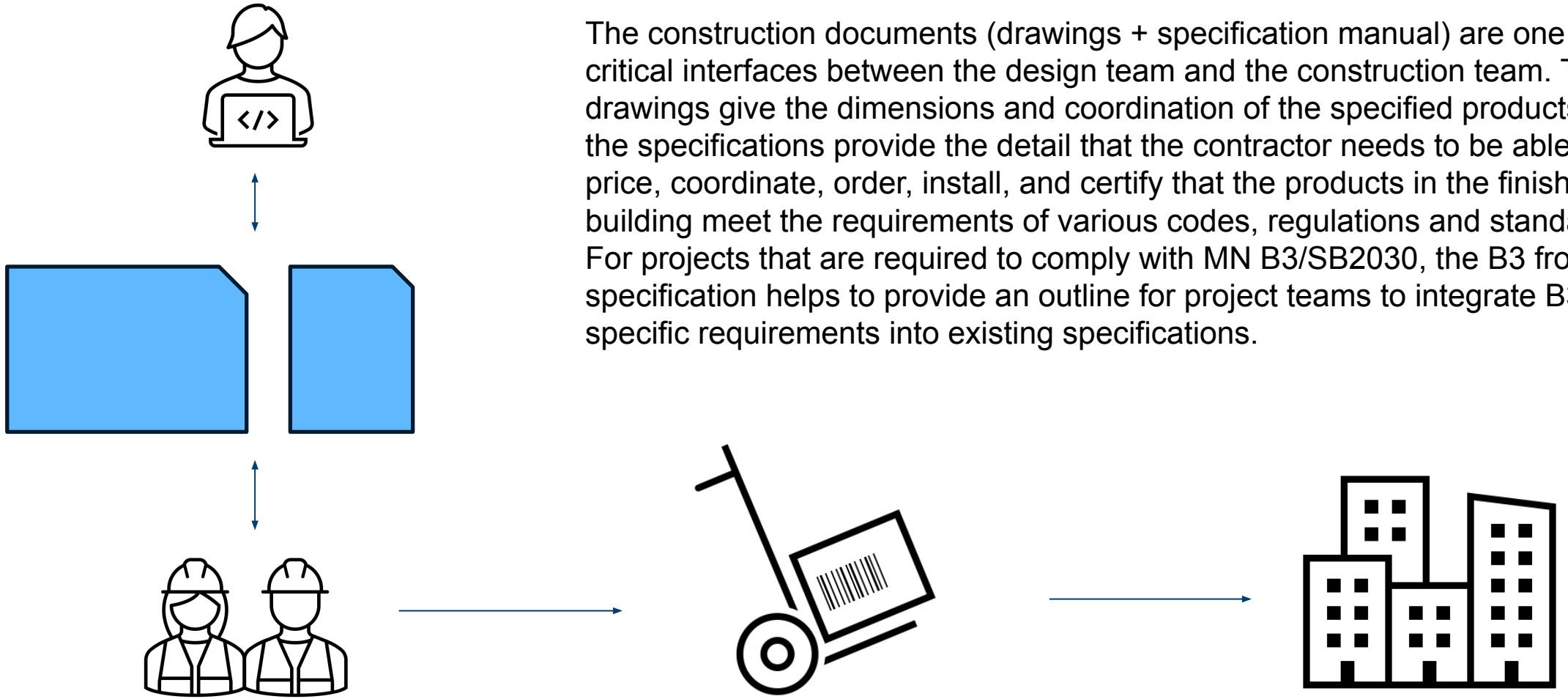
B3 SPECIFIC FRONT-END SPECIFICATION

AN INTRO TO A NEW TEMPLATE/TOOL FOR PROJECT TEAMS

Matt Tierney, AIA
Research Fellow - CSBR



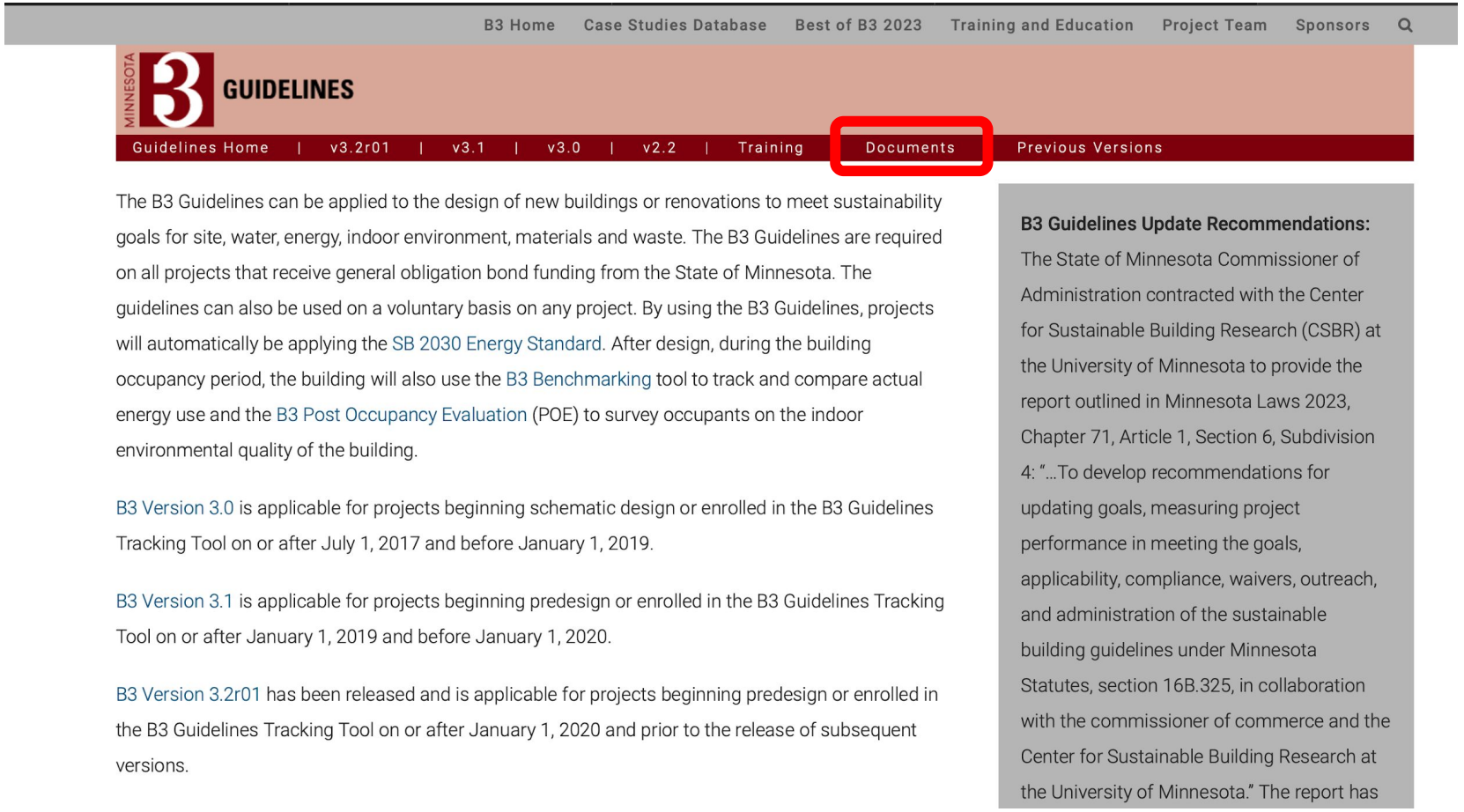
Contractors and the various trades that bring a building from documentation to real life need a well-coordinated set of construction documents that link the drawings and the assemblies/products depicted within the drawings to a unique and complete specification manual. It is important to establish an outline spec at an early stage of the project to assure the drawings and those relevant spec sections are coordinated throughout the design, construction, and occupation phases of the project.



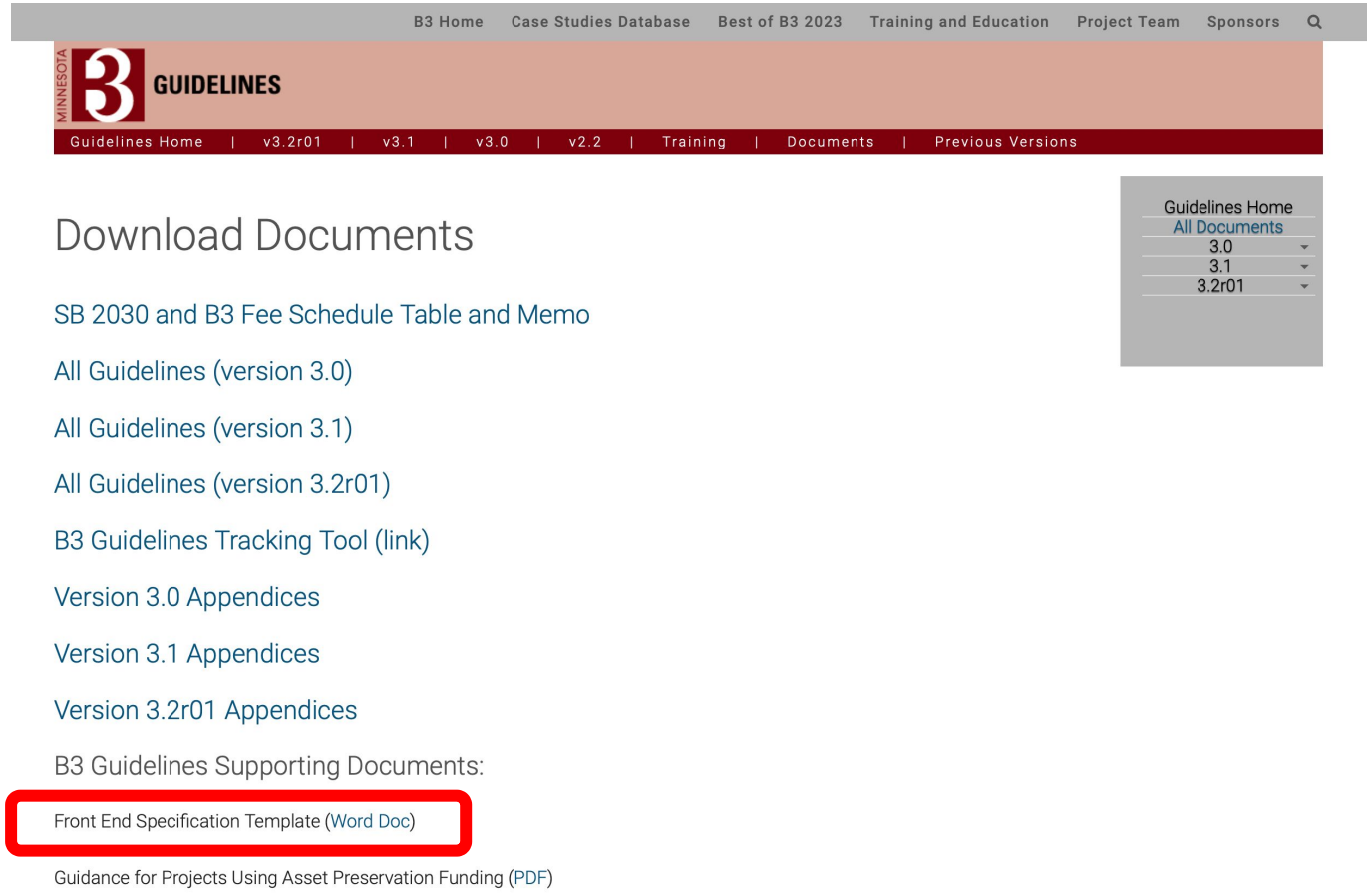
The construction documents (drawings + specification manual) are one of the critical interfaces between the design team and the construction team. The drawings give the dimensions and coordination of the specified products and the specifications provide the detail that the contractor needs to be able to price, coordinate, order, install, and certify that the products in the finished building meet the requirements of various codes, regulations and standards. For projects that are required to comply with MN B3/SB2030, the B3 front end specification helps to provide an outline for project teams to integrate B3 specific requirements into existing specifications.

1. NAVIGATE TO THE B3 HOMEPAGE (WWW.B3MN.ORG)

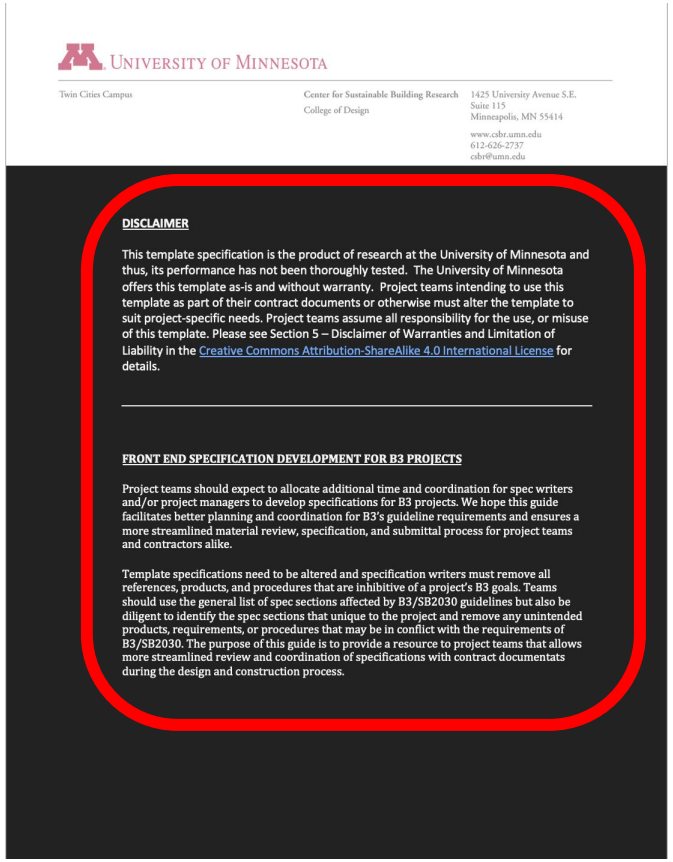
2. CLICK ON "DOCUMENTS"



1. Scroll/locate the Front End Specification Template (Word Doc) link
2. Download the linked Microsoft Word Doc File (editable .docx format)



1. Open the downloaded file in Microsoft Word (also note this can be opened in google docs if you would like to share it with others to co-work online within the same document).
2. Review the disclaimer and general description of the front-end template on the cover sheet.
3. The “Project Goals” section includes important information that situates the project within the B3 Guidelines.



UNIVERSITY OF MINNESOTA

Twin Cities Campus

Center for Sustainable Building Research
College of Design

1425 University Avenue S.E.
Suite 115
Minneapolis, MN 55414

www.csbr.umn.edu
612-626-2737
csbr@umn.edu

DISCLAIMER

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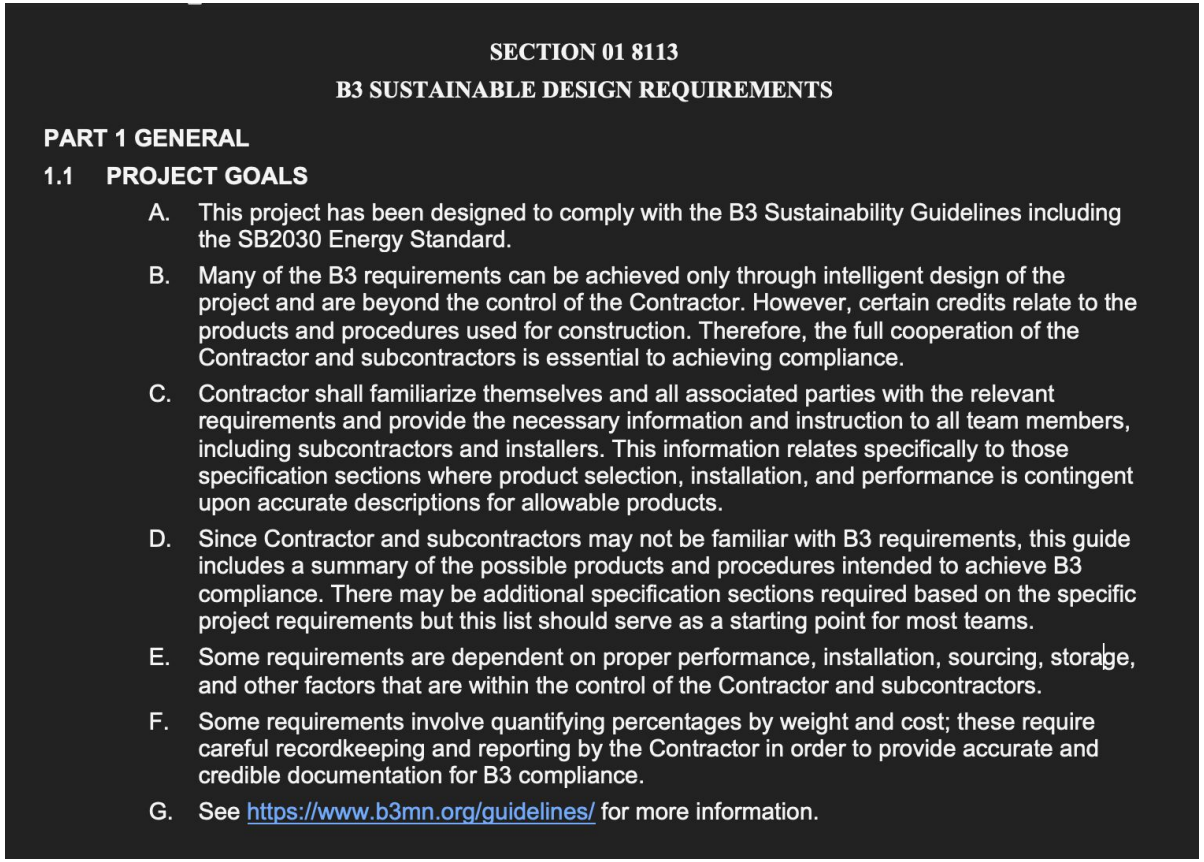
FRONT END SPECIFICATION DEVELOPMENT FOR B3 PROJECTS

Project teams should expect to allocate additional time and coordination for spec writers and/or project managers to develop specifications for B3 projects. We hope this guide facilitates better planning and coordination for B3's guideline requirements and ensures a more streamlined material review, specification, and submittal process for project teams and contractors alike.

Template specifications need to be altered and specification writers must remove all references, products, and procedures that are inhibitive of a project's B3 goals. Teams should use the general list of spec sections affected by B3/SB2030 guidelines but also be diligent to identify the spec sections that unique to the project and remove any unintended products, requirements, or procedures that may be in conflict with the requirements of B3/SB2030. The purpose of this guide is to provide a resource to project teams that allows more streamlined review and coordination of specifications with contract documentats during the design and construction process.



SECTION 01 8113

B3 SUSTAINABLE DESIGN REQUIREMENTS

PART 1 GENERAL

1.1 PROJECT GOALS

A. This project has been designed to comply with the B3 Sustainability Guidelines including the SB2030 Energy Standard.

B. Many of the B3 requirements can be achieved only through intelligent design of the project and are beyond the control of the Contractor. However, certain credits relate to the products and procedures used for construction. Therefore, the full cooperation of the Contractor and subcontractors is essential to achieving compliance.

C. Contractor shall familiarize themselves and all associated parties with the relevant requirements and provide the necessary information and instruction to all team members, including subcontractors and installers. This information relates specifically to those specification sections where product selection, installation, and performance is contingent upon accurate descriptions for allowable products.

D. Since Contractor and subcontractors may not be familiar with B3 requirements, this guide includes a summary of the possible products and procedures intended to achieve B3 compliance. There may be additional specification sections required based on the specific project requirements but this list should serve as a starting point for most teams.

E. Some requirements are dependent on proper performance, installation, sourcing, storage, and other factors that are within the control of the Contractor and subcontractors.

F. Some requirements involve quantifying percentages by weight and cost; these require careful recordkeeping and reporting by the Contractor in order to provide accurate and credible documentation for B3 compliance.

G. See https://www.b3mn.org/guidelines/ for more information.

1. Review the file for compatibility with project specifications.
2. Make any changes necessary to general formatting before continuing to edit and cull the template to fit the project.
3. Cull or add relevant “related sections” to the list on a project-by-project basis. Remember to update this if you are using the template for multiple B3 projects within your office.

1.3 RELATED SECTIONS

Example section numbers in the list below are for reference only; project teams should include specification sections at their own discretion. The list below may include sections that do not apply to a project. Likewise, the list below may not include sections that contain materials, processes, or equipment that is required to comply with the MNB3 Standards or SB2030 requirements. Language and referenced sections in this guide may differ from one project to another and therefore, this list and subsequent text serves only as a starting point for project teams and specification writers to more easily prepare project-specific specification sections for B3/SB2030 projects.

A. Section 01 33 23 - Shop Drawings, Product Data and Samples.
B. Section 01 45 00 - Quality Control
C. Section 01 57 21 - Indoor Air Quality Controls
D. Section 01 741 9 - Construction Waste Management and Disposal.
E. Section 01 91 13 - General Commissioning Requirements.
F. Section 03 30 00 - Cast-in-Place Concrete.
G. Section 03 351 1- Concrete Floor Finishes.
H. Section 04 20 00 - Unit Masonry.
I. Section 05 50 00 - Metal Fabrications.
J. Section 06 10 00 - Rough Carpentry.
K. Section 06 17 53 - Shop-Fabricated Wood Trusses.
L. Section 06 20 00 - Finish Carpentry.
M. Section 07 21 00 - Thermal Insulation.
N. Section 07 21 26 - Blown Insulation.
O. Section 07 46 23 - Engineered Wood Siding.
P. Section 08 11 13 - Hollow Metal Doors and Frames.
Q. Section 08 12 13 - Hollow Metal Frames.
R. Section 08 14 18 - Flush Wood Doors.
S. Section 08 41 13 - Aluminum-Framed Storefronts.
T. Section 08 54 00 - Composite Windows.
U. Section 09 21 16 - Gypsum Board Assemblies.
V. Section 09 51 00 - Acoustical Ceilings.
W. Section 09 65 00 - Resilient Flooring.
X. Section 09 68 13 - Tile Carpeting.
Y. Section 09 90 00 - Painting and Coating.
Z. Section 12 24 00 - Window Shades.

Section 1.5 details some of the requirements for ensuring the products and assemblies that are specified and drawn in the construction documents perform as planned.
This has two major steps, (1) Allowing for 3rd party verification and (2) correction of non-compliant work.

1.5 ADMINISTRATIVE REQUIREMENTS

A. The Contractor shall coordinate with the Owners energy professional during construction to provide access to the building and building systems relative to their work and shall complete checklists provided by this professional and as required by the performance requirements.

B. The Contractor shall correct work that fails to meet the performance requirements as determined from testing and inspections by the Owners Commissioning Agent. The cost of additional testing and inspections will be borne by the Contractor.

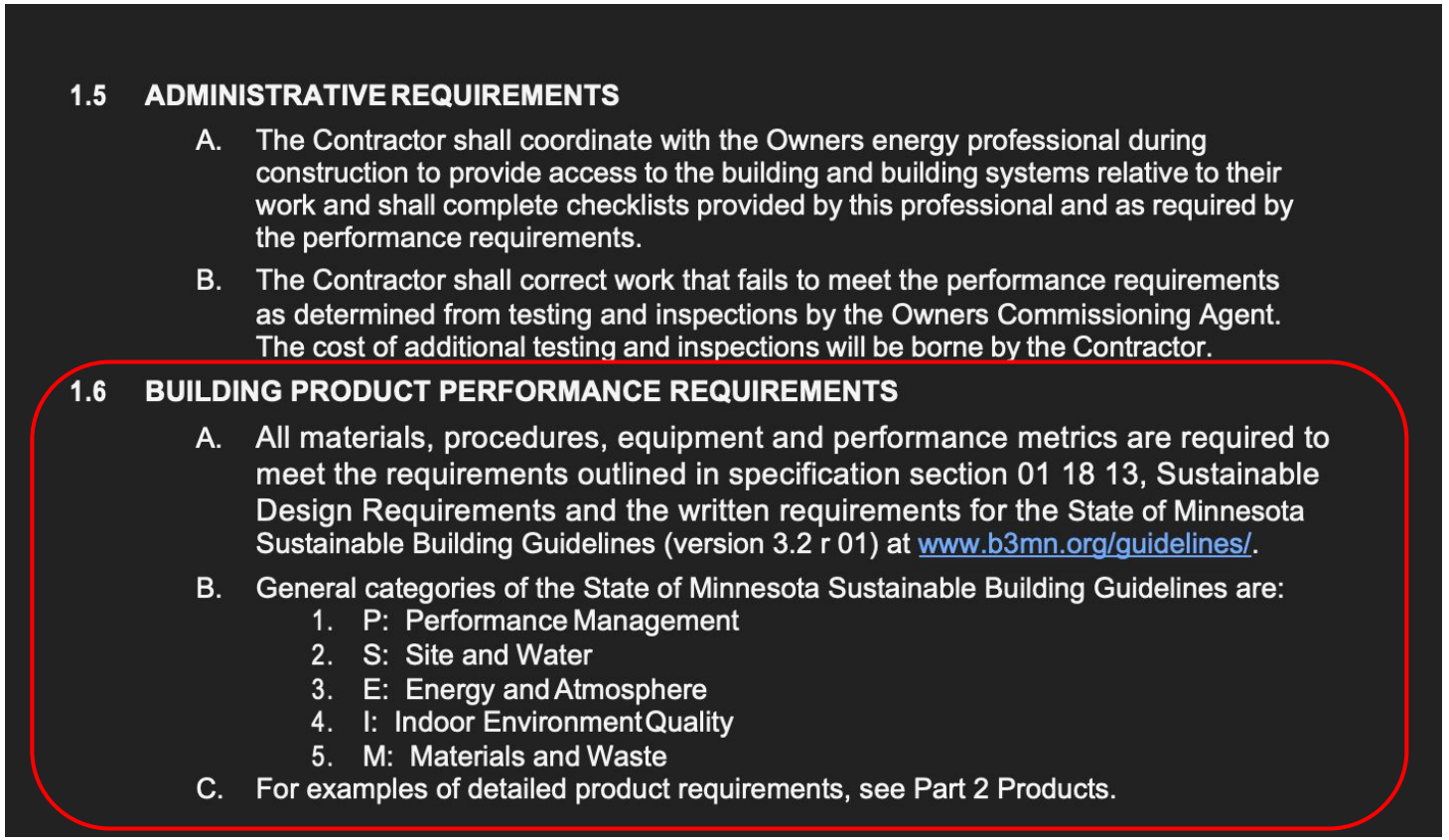
1.6 BUILDING PRODUCT PERFORMANCE REQUIREMENTS

A. All materials, procedures, equipment and performance metrics are required to meet the requirements outlined in specification section 01 18 13, Sustainable Design Requirements and the written requirements for the State of Minnesota Sustainable Building Guidelines (version 3.2 r 01) at www.b3mn.org/guidelines/.

B. General categories of the State of Minnesota Sustainable Building Guidelines are:
   1. P: Performance Management
   2. S: Site and Water
   3. E: Energy and Atmosphere
   4. I: Indoor Environment Quality
   5. M: Materials and Waste

C. For examples of detailed product requirements, see Part 2 Products.

Section 1.6 gives an overview of how the MN B3 guidelines are organized and self-references the specification.



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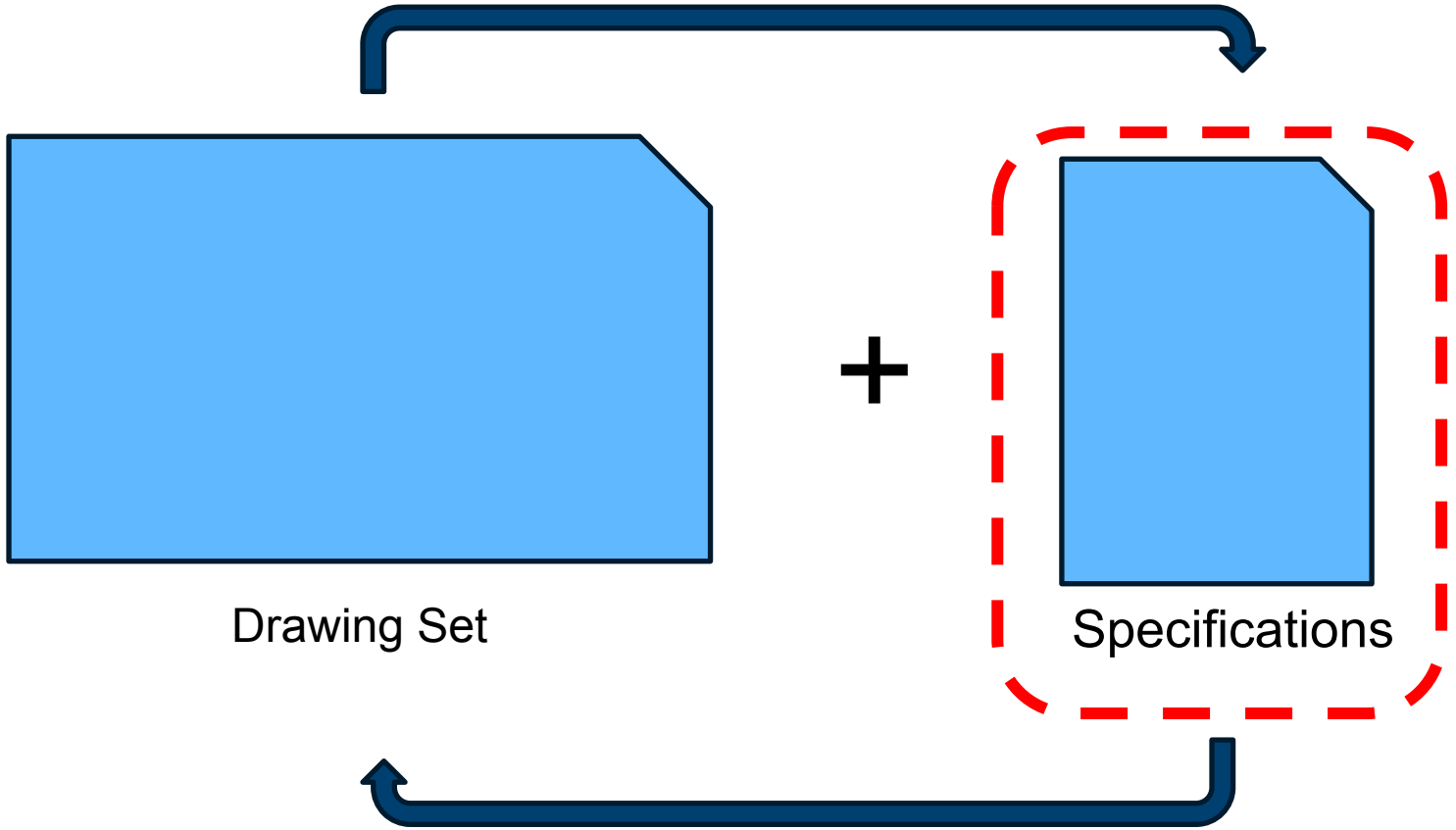
Section 1.7 references individual specification sections that are outside of Section 01 81 13 (This B3 Front-End Specification). Each individual section that was included in Section 01 81 13 - 1.3 of this front-end spec should have a corresponding altered section that includes submittal requirements for each type of product or system that is specified.

It is important to note that MN B3 does not have a specific program similar to those utilized some federal entities related to specific products that can be used in a project. The MN B3 guidelines do however require specified products, assemblies, systems, etc. to meet the requirements through their documented performance criteria.

1.7 SUBMITTALS

A. See the Division 00 Sections, and the Specification Divisions 01 - 33 for specific submittal requirements related to SECTION 01 8113 - B3 SUSTAINABLE DESIGN REQUIREMENTS

B. Pre-Bid Substitutions: The Owner encourages pre-bid substitution requests for Guideline M.2 - Environmentally Preferable Materials, to support the project requirements for recycled, renewable, and bio-based materials.



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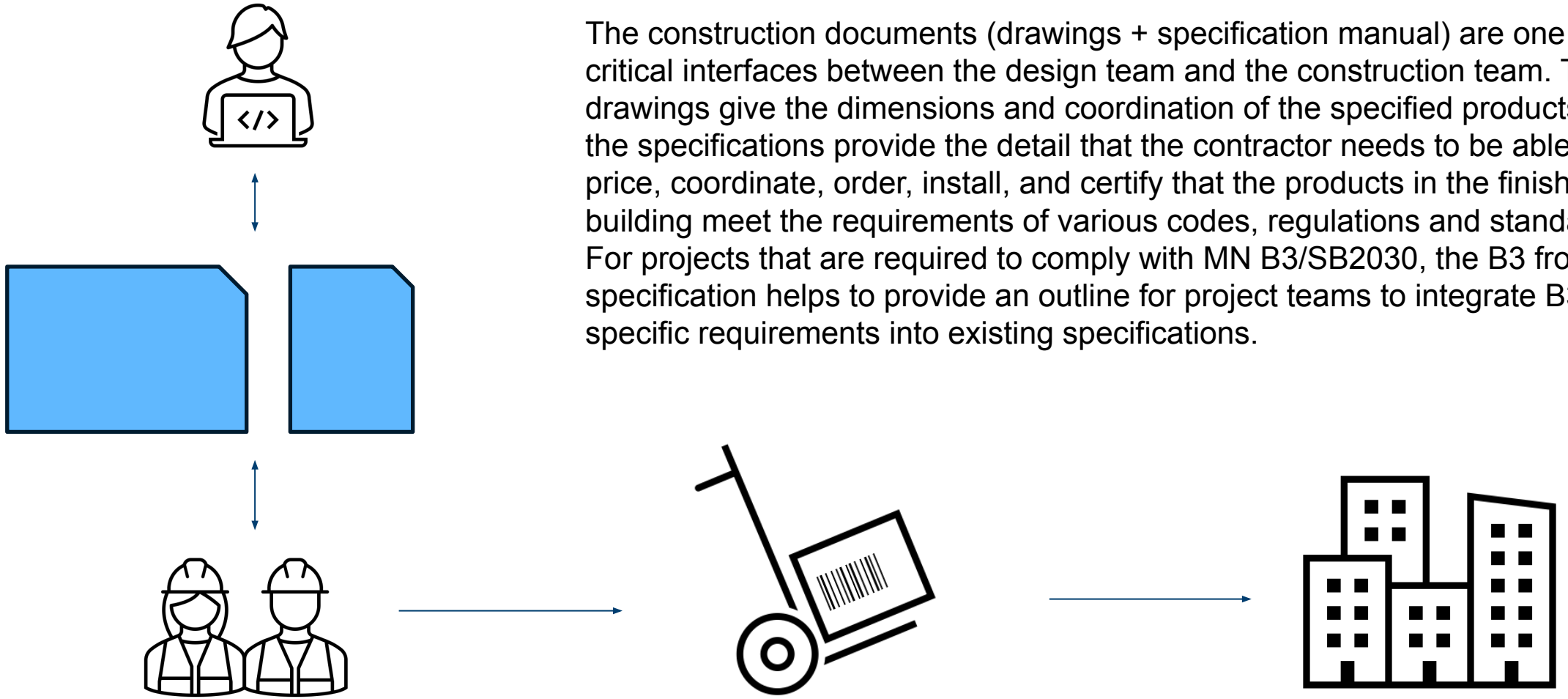

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Part 2 – Products connects the actual products, assemblies, and systems that are generally specified within the project's specification manual to the applicable MN B3 guideline(s). This helps project teams coordinate the specification's acceptable products/manufacturers, performance requirements, and other areas that are defined with the specification with the specific requirements and guideline sections of the MN B3.

PART 2 PRODUCTS

2.1 BASIC PRODUCT REQUIREMENTS

A. The requirements listed below are the overall requirements for the project. See the Specification Divisions 01-33 for requirements on specific products.

B. From Guideline I.1A - All newly installed interior materials must comply with California Department of Public Health (CDPH) Standard Method v1.1–2010 or v1.2-2017. Interior materials are defined as all materials and finishes interior to the enclosure's least vapor-permeable and continually air-sealed barrier system. This includes, but is not limited to flooring adhesives, sealants, carpets, resilient flooring, paints, acoustical insulation products, gypsum board, acoustical ceilings, acoustic wall panels, casework, composite wood subflooring, and furnishings. Projects that include less than 20,000 gsf of conditioned space are required only to document that the five most prevalent interior materials by surface area (that are not subject to a listed exception) meet this requirement.

C. Exceptions: Refer to current B3 Guidelines for exceptions. https://www.b3mn.org/guidelines/3-2/i_1/ (Also included below for ease)

   a. Inherently non-emitting sources: Products that are inherently non-emitting sources of volatile organic compounds (VOCs) (stone, ceramic, powder-coated metals, plated or anodized metal, glass, concrete, clay brick, and unfinished or untreated solid wood flooring) are considered fully compliant without any VOC emissions testing if they do not include integral organic-based surface coatings, binders, or sealants.

   b. Salvaged and reused architectural millwork more than one year old at the time of occupancy is considered compliant, provided it meets the requirements for any site-applied paints, coatings, adhesives, and sealants. Newly installed finishes and components are not exempt from I.2A or I.2B.

   c. Product types with two or fewer compliant manufacturers available from the combination of all databases listed below at the point of product selection are exempt from this requirement.2

Within Part 2, there are specific guidelines which will help teams specify products, assemblies, and systems that meet the requirements of various MN B3 guidelines.

For instance – interior materials have a specified standard with the B3 guidelines that projects must meet through the specification of acceptable products, materials, systems etc. in the specification manual.

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There are various exceptions to the I.1 B3 requirements for products that are detailed in this section. For instance, products that do not have more than 2 compliant manufacturers from the list of databases that rate/evaluate products (listed in section D) do not need to comply with the requirements of guideline I.1

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c. Product types with two or fewer compliant manufacturers available from the combination of all databases listed below at the point of product selection are exempt from this requirement.

d. Structural building products as excluded from CDPH Standard Method v1.1 under part 1.1.4.

e. Composite wood products covered under Guideline I.2C.

f. Furnishings covered under Guideline I.2D. Onsite applied furniture coatings are not exempt from the requirements of I.2A.

The listed databases are good resources to find compliant products that meet the requirements of various sections of the MN B3 guidelines. A combination of these databases/resources should be used. It is also important to note that this space is changing rapidly and new standards and corresponding databases are being added. We will try to keep this list updated to reflect these changes but please reach out to info@b3benchmarking.com if there are additional resources that are being used in your office frequently and are missing from this list.

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2. Approved databases of materials recognized as compliant with the most current CDHP standard:
   a. Collaborative for High Performance Schools (CHPS) Low Emitting Materials (which includes several of the other third-party certifications below).
   b. Products having the Living Future Institute's - Declare™ Label. https://declare.living-future.org.
   c. Cradle to Cradle Certification. https://c2ccertified.org/the-standard
   d. Scientific Certification Systems (SCS) Indoor Advantage Gold™ Certification.
   e. Resilient Flooring Institute (RFI) FloorScore™ Certification.
   f. Underwriters Laboratory (UL) GREENGUARD Gold™.
   g. Intertek ETL Environmental™ VOC+.
   h. Materials Analytical Services, LLC (MAS) Certified Green™ (for Building Materials).
   i. NSF/ANSI 332 (for Resilient Floor Coverings).
   j. Berkeley Analytical Associates ClearChem (for Interior Building Products).
   k. Coatings Research Group, Incorporated (CRGI) Green Wise Gold (for Paints).
   l. (Reserved for Future Use)
   m. (Reserved for Future Use)

There are various sections of the MN B3 guidelines that specify certain performance criteria for products. For instance, Guideline I.1B has requirements for VOC limits, chemical content, and methylene chloride or perchloroethylene that is common in certain types of paints, coatings, adhesives, and sealants. These requirements are applicable when these assemblies/products are wet-applied on site.

Please refer to the .docx file for complete listings of guideline specific information.

D. I.1B - Wet-applied materials: All onsite wet-applied materials must meet the applicable requirements below. Interior onsite wet-applied materials also must meet the general requirements for VOC emissions under I2A.
   1. I.1B.1 All paints and coatings wet-applied onsite must meet the applicable VOC limits of the California Air Resources Board (CARB) 2007, Suggested Control Measure (SCM) for Architectural Coatings, or the South Coast Air Quality Management District (SCAQMD) Rule 1113, effective June 3, 2011.
   2. I.1B.2 All adhesives and sealants wet-applied onsite must meet the applicable chemical content requirements of SCAQMD Rule 1168, July 1, 2005, Adhesive and Sealant Applications, as analyzed by the methods specified in Rule 1168.
   3. Paints, coatings, adhesives, and sealants wet-applied onsite may not include any intentionally added methylene chloride or perchloroethylene.

Note there are also various areas of Part 2 where projects using the small buildings pathway (20,000 gsf maximum conditioned space) have certain exceptions wherein they do not need to meet the same level of detail, or they have slightly different requirements. These items are listed in the front-end specification with an "*" asterisk at the beginning of the guideline/requirement.

E. *Note this is not a requirement for "small projects" under 20,000 gsf.
I.1C - Composite Wood Products: Newly installed composite wood must meet the California Air Resources Board ATCM for formaldehyde requirements for ultra-low-emitting formaldehyde (ULEF) resins or no added formaldehyde resins.

F. *Note this is not a requirement for "small projects" under 20,000 gsf.
I.1D - New furniture and furnishing items not tested under I.2A must be tested in accordance with ANSI/BIFMA Standard Method M7.1–2014. Comply with ANSI/BIFMA e3-2014 Furniture Sustainability Standard, Section 7.6.1 or 7.6.2

1. I.1D.1 Furniture listed in the following databases or providing the following certifications are considered compliant with this guideline:
   a. Scientific Certification Systems (SCS) Indoor Advantage (furniture).
   b. Scientific Certification Systems (SCS) Indoor Advantage Gold (furniture).
   c. Underwriter Laboratories (UL) Greenguard Certified.
   d. Underwriter Laboratories (UL) Greenguard Certified.
   e. Intertek ETL Environmental VOC (furniture).
   f. Intertek ETL Environmental VOC (furniture).
   g. Materials Analytical Services, LLC (MAS) Certified Green.

Guideline M.2A Environmentally Preferable Materials requires 55% of the total building materials used in the project must be salvaged/reused, recycled content, recyclable, bio-based, responsibly sourced, or regional.

G. M.2A - Environmentally Preferable Materials: At least 55% of the total building materials used in the project must have one of the following attributes: salvaged or reused, recycled content, recyclable, bio-based, responsibly sourced or regional as defined in Sections 1 through 6 below. The combined calculation is based on mass, volume or cost. Where a material has more than one attribute, the material value will be multiplied by its number of qualifying attributes.
   1. M.2A.1 Salvaged or reused materials and components:
      a. The salvaged material content will be determined based on the actual mass, volume, or cost of the salvaged material or the cost of a comparable alternative component material. Portions of a building retained and reused in a renovation may contribute in this category.
   2. M.2A.2 Recycled content – Recycled content building materials must comply with one of the following:
      a. Contain not less than 25% combined postconsumer and/or pre-consumer recovered material and be recyclable.
      b. Contain not less than 50% combined postconsumer and/or pre-consumer recovered material.
      c. Pre-consumer recycled content does not include reutilization of material such as rework, regrind, or scrap generated in a process and capable of being reclaimed within the same process that generated it (IGCC 2015).

Part 3 – A Miscellaneous - relates to the execution of the construction work on site and contains various aspects that affect the project's compliance with the MN B3 standards.

PART 3 EXECUTION

A. Miscellaneous:

1. Building cavities shall be left clean and free of debris. All wall cavities shall be free of debris prior to installation of the gypsum board.
2. All foodstuffs shall be disposed of in containers which will be removed from the job site and emptied at the end of each workday.
3. All debris shall be removed from under and around the building premises and properly disposed of in a dumpster.
4. The dumpster shall be removed when full on a regular basis so that piles of debris do not accumulate on the ground around it.
5. Smoking is prohibited within or near any structure on the job site.
6. The use of gas-generated machinery is to be minimized within or near the building after the foundation is completed.
7. Heaters fueled by gasoline or kerosene are prohibited. If relative humidity rises above 55%, electric dehumidification should be applied until relative humidity remains consistently between 45% and 55% without additional dehumidification. Interior surface temperatures shall remain above 50 degrees. The joint compound must be

Part 3 – B Materials - relates to the materials and products that are auxiliary to the construction and assembly of specified products. These auxiliary products have requirements that affect the project's compliance with the MN B3 standards.

B. Materials:

1. All materials are to be protected from contamination and moisture damage during storage and after installation.
2. The contractor shall verify, prior to installation, that all materials are undamaged, uncontaminated, and free of acquired odors. Any products found to be defective shall not be used unless approved by the owner or architect.
3. The use of substances listed below is prohibited: Herbicides, fungicides, insecticides, and other pesticides, except as specified.
   a. Composite wood products containing urea-formaldehyde binders.
   b. Commercial cleaning products other than those specified.
   c. Adhesives, paints, sealers, stains, and other finishes except as specified.
   d. Any building materials or components that have been contaminated while in storage or during shipment. Contact the architect for further instructions about any application where these substances would normally be used if information for a substitution is not in this document.
4. No products may be substituted for the specified product unless agreed upon in writing by the owner and architect (or responsible engineer/consultant). An MSDS sheet and product literature must be provided on any substitution in order for it to be considered. Submit a physical sample to the owner and/or architect whenever possible.

We have also provided a sample submittals section. In this case for Thermal Insulation (07 21 00) This provides the necessary documentation and types of declarations that are necessary to assure a product meets the requirements of the various applicable sections of the MN B3. This example will shift depending on material, assembly, etc. but should serve as a good starting point for project teams to integrate these requirements into their specifications so the submittal process enables a double check.

(EXAMPLE)

SECTION 07 2100
THERMAL INSULATION

1.05 SUBMITTALS

A. **Product Data:** Submit product data including manufacturer's literature for insulation, including preparation instructions and recommendations, installation methods, and storage and handling requirements.

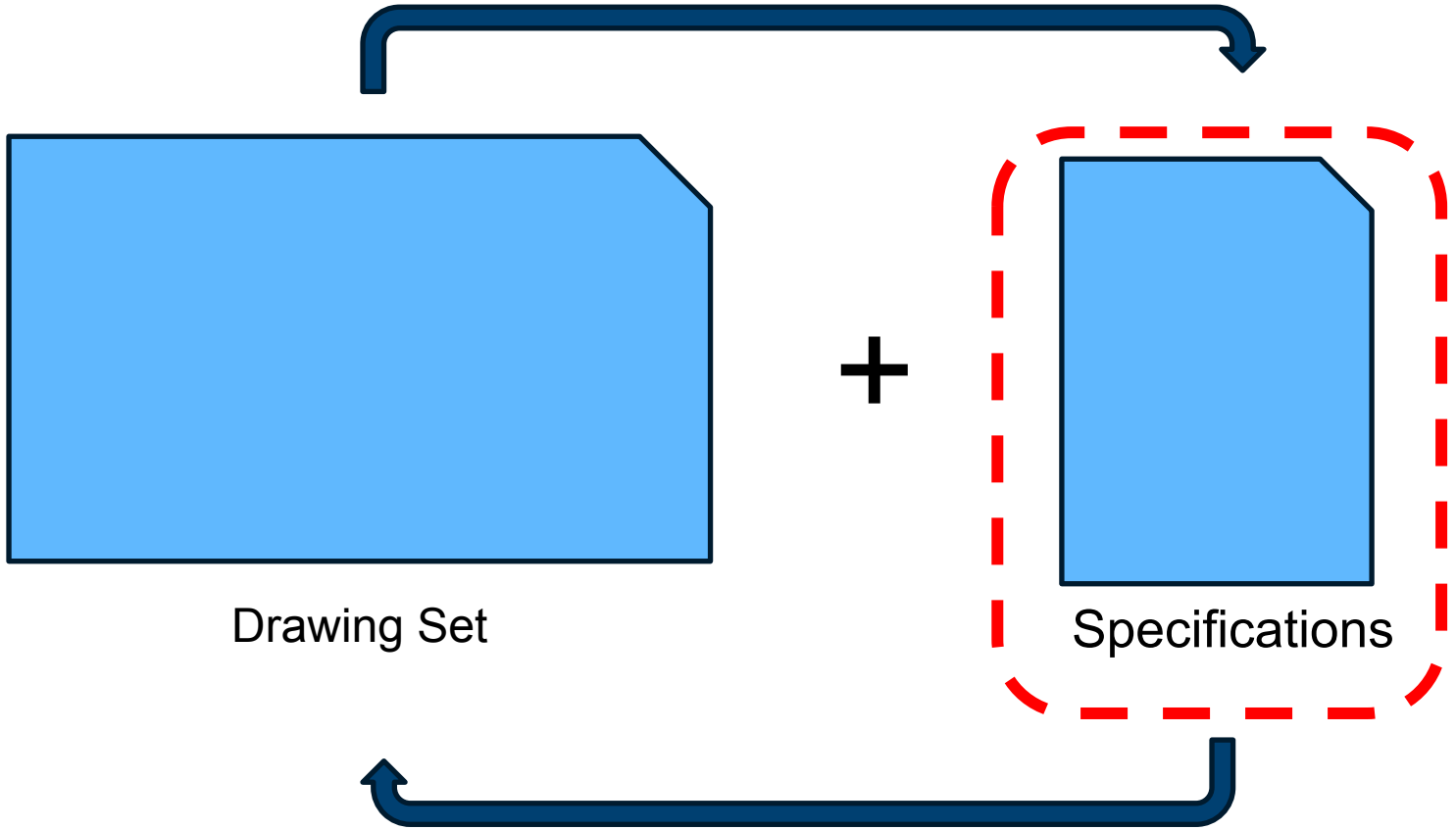
B. **Product Declarations:** Submit any/all product declarations and certifications.

C. **Recycled Content:** For projects seeking MNB3 certification, submit a letter from material supplier indicating, thermal value of insulation contributing to overall energy performance of building, recycled content of insulation indicating percentages by weight of preconsumer and postconsumer recycled content, location where insulation is extracted, processed and manufactured.

D. **Regionally Manufactured Materials:** For projects seeking MNB3 certification, submit documentation indicating location of manufacturer and percent of raw materials. Include cost and distance from the manufacturer to project for each regionally manufactured material and percent of raw materials used to make product within 100 miles of project site.

E. **Verification Samples:** Submit sample of insulation in thickness used on Project.

F. Minnesota B3.1 submittal:



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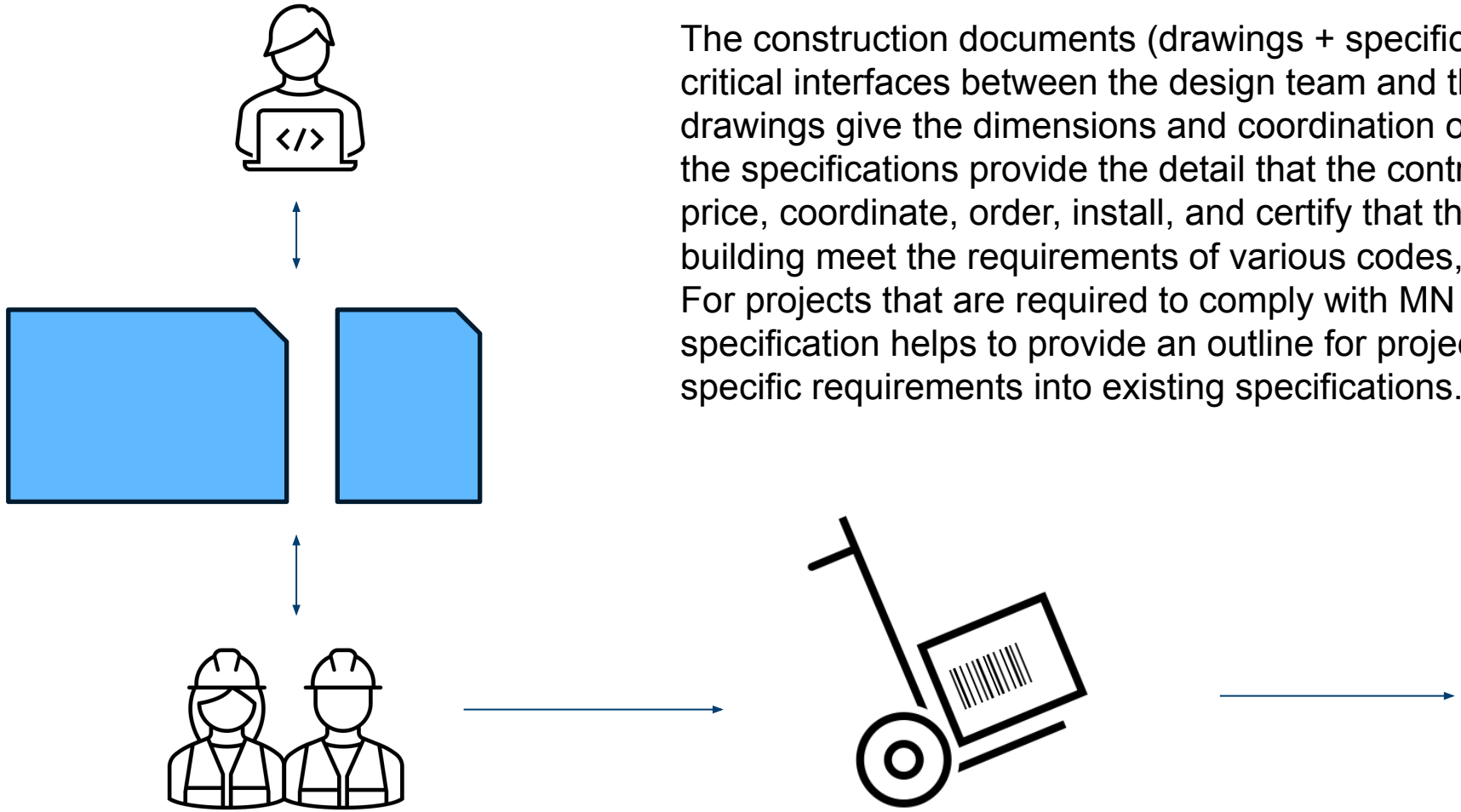

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MINNESOTA B3 GUIDELINES

Front End Specification

An intro to a new template/tool for B3 project teams

For questions or comments please send an email to info@b3benchmarking.com