**DISCLAIMER**

This template specification is the product of research at the University of Minnesota and thus, its performance has not been thoroughly tested.  The University of Minnesota offers this template as-is and without warranty.  Project teams intending to use this template as part of their contract documents or otherwise must alter the template to suit project-specific needs. Project teams assume all responsibility for the use, or misuse of this template. Please see Section 5 – Disclaimer of Warranties and Limitation of Liability in the [Creative Commons Attribution-ShareAlike 4.0 International License](https://creativecommons.org/licenses/by-sa/4.0/legalcode) for details.

**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. **PROJECT GOALS**
     1. This project has been designed to comply with the B3 Sustainability Guidelines including the SB2030 Energy Standard.
     2. 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.
     3. 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.
     4. 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.
     5. Some requirements are dependent on proper performance, installation, sourcing, storage, and other factors that are within the control of the Contractor and subcontractors.
     6. 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.
     7. See <https://www.b3mn.org/guidelines/> for more information.
  2. **SECTION INCLUDES**
     1. Minimum Sustainable Performance Requirements.
     2. State of Minnesota Sustainable Building Guidelines for New Buildings.
        1. Version 3.2 r 01 of the State of Minnesota Sustainable Building Guidelines (B3 Guidelines) are included by reference and can be found at: [www.b3mn.org/guidelines/](http://www.b3mn.org/guidelines/)

# 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.*

* + 1. Section 01 33 23 - Shop Drawings, Product Data and Samples.
    2. Section 01 45 00 - Quality Control
    3. Section 01 57 21 - Indoor Air Quality Controls
    4. Section 01 741 9 - Construction Waste Management and Disposal.
    5. Section 01 91 13 - General Commissioning Requirements.
    6. Section 03 30 00 - Cast-in-Place Concrete.
    7. Section 03 351 1 - Concrete Floor Finishes.
    8. Section 04 20 00 - Unit Masonry.
    9. Section 05 50 00 - Metal Fabrications.
    10. Section 06 10 00 - Rough Carpentry.
    11. Section 06 17 53 - Shop-Fabricated Wood Trusses.
    12. Section 06 20 00 - Finish Carpentry.
    13. Section 07 21 00 - Thermal Insulation.
    14. Section 07 21 26 - Blown Insulation.
    15. Section 07 46 23 - Engineered Wood Siding.
    16. Section 08 11 13 - Hollow Metal Doors and Frames.
    17. Section 08 12 13 - Hollow Metal Frames.
    18. Section 08 14 18 - Flush Wood Doors.
    19. Section 08 41 13 - Aluminum-Framed Storefronts.
    20. Section 08 54 00 - Composite Windows.
    21. Section 09 21 16 - Gypsum Board Assemblies.
    22. Section 09 51 00 - Acoustical Ceilings.
    23. Section 09 65 00 - Resilient Flooring.
    24. Section 09 68 13 - Tile Carpeting.
    25. Section 09 90 00 - Painting and Coating.
    26. Section 12 24 00 - Window Shades.

# REFERENCE STANDARDS

* + 1. See the B3 Guidelines, and the Specification Divisions 01 - 33 for specific reference standards related to these Sustainable Requirements.

# ADMINISTRATIVE REQUIREMENTS

* + 1. 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.
    2. 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.

# BUILDING PRODUCT PERFORMANCE REQUIREMENTS

* + 1. 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/](http://www.b3mn.org/guidelines/).
    2. 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
    3. For examples of detailed product requirements, see Part 2 Products.

# SUBMITTALS

* + 1. See the Division 00 Sections, and the Specification Divisions 01 - 33 for specific submittal requirements related to SECTION 01 8113 - B3 SUSTAINABLE DESIGN REQUIREMENTS
    2. 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.

# PART 2 PRODUCTS

* 1. **BASIC PRODUCT REQUIREMENTS**
     1. The requirements listed below are the overall requirements for the project. See the Specification Divisions 01-33 for requirements on specific products.
     2. 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.
     3. Exceptions: Refer to current B3 Guidelines for exceptions. <https://www.b3mn.org/guidelines/3-2/i_1/> (Also included below for ease)
        + 1. 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.
          2. 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.
          3. 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
          4. Structural building products as excluded from CDPH Standard Method v1.1 under part 1.1.4.
          5. Composite wood products covered under Guideline I.2C.
          6. Furnishings covered under Guideline I.2D. Onsite applied furniture coatings are not exempt from the requirements of I.2A.
        1. Approved databases of materials recognized as compliant with the most current CDHP standard:
           1. Collaborative for High Performance Schools (CHPS) Low Emitting Materials (which includes several of the other third-party certifications below).
           2. Products having the Living Future Institute’s - Declare™ Label. [https://declare.living-future.org](https://declare.living-future.org/).
           3. Cradle to Cradle Certification. <https://c2ccertified.org/the-standard>
           4. Scientific Certification Systems (SCS) Indoor Advantage Gold™ Certification.
           5. Resilient Flooring Institute (RFI) FloorScore™ Certification.
           6. Underwriters Laboratory (UL) GREENGUARD Gold™.
           7. Intertek ETL Environmental™ VOC+.
           8. Materials Analytical Services, LLC (MAS) Certified Green™ (for Building Materials).
           9. NSF/ANSI 332 (for Resilient Floor Coverings).
           10. Berkeley Analytical Associates ClearChem (for Interior Building Products).
           11. Coatings Research Group, Incorporated (CRGI) Green Wise Gold (for Paints).
           12. (Reserved for Future Use)
           13. (Reserved for Future Use)
     4. 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.
     5. \*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.

* + 1. \*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:
         1. Scientific Certification Systems (SCS) Indoor Advantage (furniture).
         2. Scientific Certification Systems (SCS) Indoor Advantage Gold (furniture).
         3. Underwriter Laboratories (UL) Greenguard Certified.
         4. Underwriter Laboratories (UL) Greenguard Certified.
         5. Intertek ETL Environmental VOC (furniture).
         6. Intertek ETL Environmental VOC (furniture).
         7. Materials Analytical Services, LLC (MAS) Certified Green.
    1. 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:
          1. 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:
          1. Contain not less than 25% combined postconsumer and/or pre-consumer recovered material and be recyclable.
          2. Contain not less than 50% combined postconsumer and/or pre-consumer recovered material.
          3. 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).
       3. M.2A.3 Bio-based – Bio-based materials are materials that comply with one or more of the following:
          1. The bio-based content is not less than 75% as determined by testing in accordance with ASTM D6866.
          2. The requirements of USDA 7CFR Part 2902.
       4. M.2A.4 Responsible sourced – Responsibly sourced materials are materials that comply with the following:
          1. Wood and wood products labeled in accordance with the following standards:

If wood comes from a North American source, it is certified using SFI, FSC, CSA, or ATF.

If wood comes from a source outside North America, it is certified using FSC or PEFC.

* + - * 1. Other approved standards for extraction of raw materials. Refer to B3.1 Guidelines for additional information and resources.
      1. M.2A.5 Regional: – Regional materials or components must be composed of resources that are recovered, harvested, extracted, and manufactured within a 500-mile radius of the building site:
         1. Where only a portion of a material or product is recovered, harvested, extracted, and manufactured within 500 miles, only that portion can be included.
         2. Where resources are transported by water or rail, the distance to the building site must be determined by multiplying the distance that the resources are transported by water or rail by 0.25 and adding that number to the distance transported by means other than water or rail.
    1. \*Note this is not a requirement for “small projects” under 20,000 gsf.

M.4A Demonstrate that the chemical inventories of at least ten permanently installed interior materials from at least five different manufacturers do not contain likely hazardous materials by one of the following methods:

* + - 1. GreenScreen List Translator free of LT-1 or LT-P1 chemicals
      2. Full GreenScreen Assessment free of BM-1 chemicals
      3. Cradle to Cradle v2 Gold or Platinum, or v3 Silver, Gold, or Platinum
      4. Declare Label Declaration Status of LBC Red List Free
    1. M.4B Mercury content in fluorescent lamps. The mercury content in straight and compact fluorescent lamps must comply with the limitations stated in the B3 Guidelines.

# PART 3 EXECUTION

* + 1. 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 completely dry before the application of primer.
       8. Provide construction ventilation with minimum 1.5 air changes per hour during the day of application and for two days afterwards for the following materials and systems:
          1. paints and adhesives.
          2. vinyl flooring and carpeting.
          3. any material and/or product that off-gases.
       9. Keep site, ducts and mechanical equipment and wall cavities clean throughout construction and leave clean at occupancy.
       10. Clean duct system after painting and trim is completed.
       11. The contractor shall perform and maintain the special project procedures with the same quality of workmanship as would be expected with standard materials and methods. The contractor shall maintain a quality control program that ensures full protection of work against exposure to prohibited materials and practices.
       12. It is the responsibility of the general contractor to ensure that their labor force, all subcontractors and their labor forces, all suppliers, and other visitors be made aware of these rules and follow them at all times.
       13. The following sign is to be made and prominently posted on the job site:

# "This building is being constructed as a healthy building under the requirements of the Minnesota B3 Sustainable Design Guidelines. Only specified products and procedures may be used. Alternatives to specified materials and products must be approved in writing by the owner and /or architect prior to use. If in doubt, contact the general contractor.”

* + - 1. Spills of fuels, solvents, or chemicals must be avoided. If a spill occurs, report it to the general contractor immediately. General Contractor is responsible for cleaning and disposing of any contaminated materials or excess spilled material in an environmentally responsible manner in accordance with what the spilled material’s stated disposal requirements are.
      2. Finish flooring materials shall not be applied over insufficiently cured concrete slabs. Quickly and thoroughly dry out precipitation that enters an unfinished structure. Wood members shall have a moisture content less than 17%. Walls shall not be enclosed until wet applied insulation systems such as cellulose or spray foams are properly cured.
      3. Provide MSDS sheets for paints and varnishing and maintain a copy on site.
    1. 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.
          1. Composite wood products containing urea-formaldehyde binders.
          2. Commercial cleaning products other than those specified.
          3. Adhesives, paints, sealers, stains, and other finishes except as specified.
          4. 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.
       5. Commercial Cleaning Products - Green Seal has recommended industrial and institutional cleaners that meet the following criteria:
          1. are not toxic to human or aquatic life.
          2. contain VOC levels under 10% by weight when diluted for use.
          3. are readily biodegradable.
          4. are not made of petrochemical compounds or petroleum.
          5. do not contain chlorine bleach.
          6. are free of phosphates and derivatives.
          7. do not contain phenolic compounds or glycol ethers.
          8. are free of arsenic, cadmium, chromium, lead, mercury, nickel, and selenium.
          9. have acceptable pH levels.
          10. work optimally at room temperature.

**END OF SECTION 01 8113**

**Example references in Sections 3-12**

**(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.

1. Minnesota B3.1 submittal:

B3 Project Teams:

-Select all applicable product requirement categories that apply to the products of the specification section.

-Submit product information and specifications highlighting validation/confirmation of the following characteristics for compliance with the MN B3 Guidelines.

* + - 1. Environmentally Preferable Materials (M.1): Salvaged or reused materials and components

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.

* + - 1. Environmentally Preferable Materials (M.2): Recycled content – Recycled content building materials must comply with one of the following:

Contain not less than 50% combined postconsumer and/or pre-consumer recovered material.

Applies to mineral fiber batt insulation.

* + - 1. Environmentally Preferable Materials (M.3): Bio-based – Bio-based materials are materials that comply with one or more of the following:

The bio-based content is not less than 75% as determined by testing in accordance with ASTM D6866.

The requirements of USDA 7CFR Part 2902.

* + - 1. Environmentally Preferable Materials (M.4): Responsible sourced – Responsibly sourced materials are materials that comply with the following:  
         Wood and wood products labeled in accordance with the following standards:

If wood comes from a North American source, it is certified using SFI, FSC, CSA, or ATF.

If wood comes from a source outside North America, it is certified using FSC or PEFC.

Other approved standards for extraction of raw materials (see Additional Resources in Meeting the Guidelines below).