

# 3.6 Hazardous materials

Related Credits: SM-R1: Hazardous Materials Elimination

It is also important to ensure that selected materials do not contain hazardous components excluded by credit SM-R1. The design team should be aware of these requirements while designing exterior spaces.

The prohibition of hazardous materials should also be written into the project specification documents during the design stage and followed by the contractor during the construction stage.

1 Specify that materials, including walls, insulation, and interior materials, will not contain asbestos and that all asbestos containing materials have been removed from refurbished buildings.

2 Specify that wood materials exposed to the outside and within human reach – such as shading structures, playgrounds, and decking – will not be treated with chromated copper arsenate (CCA).

## Example 3.6a: Extract from specifications

In compliance with the Pearl Building Rating System for Estidāma, credit SM-R1 Hazardous Materials Elimination, the following materials shall not be used:

1. Asbestos Containing Materials (ACM)
2. Chromated copper arsenate (CCA)-treated timber, where timber is used for external structures subject to frequent and intimate contact. These materials include, but are not limited to, shading devices, playground equipment and handrails”

### DIVISION 1 – GENERAL REQUIREMENTS (CONT'D)

SECTION 01095	REFERENCE STANDARDS AND DEFINITIONS
SECTION 01200	PROGRESS MEETINGS
SECTION 01300	SUBMITTALS
SECTION 01400	QUALITY CONTROL SERVICES (includes Schedule of Required Structural and Special Inspections)
SECTION 01500	TEMPORARY FACILITIES
SECTION 01600	MATERIALS AND EQUIPMENT
SECTION 01700	PROJECT CLOSEOUT

### DIVISION 2 – SITE WORK

SECTION 02010	SUBSURFACE INVESTIGATION
SECTION 02100	EROSION AND SEDIMENT CONTROL
SECTION 02102	CLEARING AND GRUBBING
SECTION 02110	SITE DEMOLITION
SECTION 02300	EARTHWORK
SECTION 02362	TERMITE CONTROL
SECTION 02501	STORM DRAINAGE SYSTEM
SECTION 02514	DISINFECTION OF WATER DISTRIBUTION SYSTEMS
SECTION 02551	EXTERIOR WATER SYSTEM
SECTION 02552	SANITARY SEWERS
SECTION 02612	BITUMINOUS PAVING
SECTION 02621	SITE CONCRETE

### DIVISION 3 – CONCRETE

SECTION 03300	CAST-IN-PLACE CONCRETE
SECTION 03450	ARCHITECTURAL PRECAST CONCRETE

### DIVISION 4 – MASONRY

SECTION 04810	UNIT MASONRY ASSEMBLIES
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### DIVISION 5 – METALS

SECTION 05120	STRUCTURAL STEEL
SECTION 05210	STEEL JOISTS
SECTION 05310	STEEL DECK
SECTION 05400	COLD FORMED METAL FRAMING
SECTION 05500	METAL FABRICATIONS
SECTION 05721	ORNAMENTAL RAILINGS
SECTION 05810	EXPANSION JOINT COVERS

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SECTION 016000 PRODUCT REQUIREMENTS	
PART 1 GENERAL	
1.1 SUMMARY	
A. Section provides administrative and procedural requirements for selection of products for use in Project, product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.	
1.2 DEFINITIONS	
A. Products: Items purchased for incorporation into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.	
1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.	
2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.	
3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.	
B. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by the Contract Documents and proposed by Contractor.	
C. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "Basis of Design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.	
1.3 SUBMITTALS	
A. Product List: Submit a list, in tabular form, showing specified products. Include generic names of products required. Include manufacturer's name and proprietary product names for each product.	
1. Coordinate product list with Contractor's Construction Schedule and the Submittals Schedule.	
2. Form: Tabulate information for each product under the following column headings:	
a. Specification Section number and title.	
b. Generic name used in the Contract Documents.	
c. Proprietary name, model number, and similar designations.	
d. Manufacturer's name and address.	
e. Supplier's name and address.	
f. Installer's name and address.	
g. Projected delivery date or time span of delivery period.	
h. Identification of items that require early submittal approval for scheduled delivery date.	
3. Initial Submittal: Within thirty (30) days after date of commencement of the Work or by the	
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1.6 PRODUCT WARRANTIES	
A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.	
1. Manufacturer's Warranty: Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.	
2. Special Warranty: Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.	
B. Special Warranties: Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.	
1. Manufacturer's Standard Form: Modified to include Project-specific information and properly executed.	
2. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.	
C. Submittal Time: Comply with requirements in Section 017000, EXECUTION AND CLOSEOUT REQUIREMENTS.	
1.7 DELETERIOUS MATERIALS	
A. The following materials shall not be used in the Work unless it can be demonstrated, to the satisfaction of the Architect, that they are safe during manufacture, installation and use and that their suitability is ensured:	
1. Asbestos or asbestos-containing products.	
2. Lead where the metal or its corrosive products may be directly ingested, inhaled or absorbed. Applications of lead such as roofing, flashings, rainwater control and copper alloy fittings containing lead which are specifically required are acceptable, until equal or better alternatives are available.	
3. Lead based paints and primers.	
4. Urea-formaldehyde polyurethane, isocyanurates, polyisocyanurates in foams or materials which may release gases in quantities which may be hazardous.	
5. Materials containing mineral fibers, either man-made or naturally occurring, which have a diameter of 3 microns or less and a length of 200 microns or less, or which contain any fibers not sealed, encapsulated, or otherwise stabilized to ensure that fiber migration is prevented. Products that may contain these fibers include insulation, fire protection and air filters. For all mineral wool insulation products, test evidence must be available and produced confirming that the materials fulfill all statutory requirements and consequently are not classified as a possible human carcinogen.	
6. Materials in which CPICs, HCPICs or HIFAs have been used as a blowing agent.	
7. High alumina cement in structural elements.	
8. Naturally occurring aggregates for use in reinforced concrete which do not comply with codes having jurisdiction or ASTM C33 and ASTM C330, whichever is stricter.	
9. Calcium chloride in admixtures for use in reinforced concrete.	
10. Any wood treated with pentachlorophenol.	
11. Polyethersulfone (PTFE) except when used as non-stick sealing within valves or as an insulating tape.	
12. Chlorofluorocarbons or any goods and/or materials containing the same.	
13. Polychlorinated biphenyls or any goods and/or materials containing the same.	
14. Calcium silicate bricks or tiles.	
15. Halon gas as a fire control substance.	
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