

## SECTION 078200 - BOARD FIREPROOFING

### PART 1 - GENERAL

#### 1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

#### 1.2 SUMMARY

- A. This Section includes the following:
  - 1. Calcium silicate board fire protection.
  - 2. Mineral-fiber board fire protection.
- B. Related Sections include the following:
  - 1. Division 07 Section "Thermal Insulation" for slag-wool-/rock-wool-fiber board and blanket insulation.
  - 2. Division 07 Section "Applied Fireproofing" for applied coatings.
  - 3. Division 07 Section "Penetration Firestopping."
  - 4. Division 09 Section "Gypsum Board" for gypsum wallboard fire-resistive assemblies, finishing and repair of calcium silicate board assemblies, and non-fire-rated gypsum-board covering assemblies over mineral-fiber board fire-protection assemblies.
  - 5. Division 09 painting Sections for field painting of calcium silicate boards.
- C. Alternates: Refer to Division 01 Section "Alternates" for description of Work in this Section affected by alternates.

#### 1.3 SUBMITTALS

- A. Product Data: For each type of product indicated.
- B. Product Certificates: For each type of board fire protection, signed by product manufacturer.
- C. Research/Evaluation Reports: For board fire protection.
- D. Submittals shall be reviewed and approved by the NIH Division of the Fire Marshal before any material is installed.

#### 1.4 QUALITY ASSURANCE

- A. Source Limitations: Obtain board fire-protection materials through one source from a single manufacturer.

- B. Fire-Test-Response Characteristics: Provide board fire protection with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.
1. Surface-Burning Characteristics: ASTM E 84.
  2. Fire-Resistance Ratings: ASTM E 119.
  3. Combustion Characteristics: ASTM E 136.
  4. Fire-resistance-rated assemblies are indicated by design designations from UL's "Fire Resistance Directory" or from the listings of another testing and inspecting agency.
- C. Mockups: Build mockups to set quality standards for fabrication and installation.
1. Approval of mockups is for other material and construction qualities specifically approved by Contracting Officer in writing.
  2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Contracting Officer in writing.
  3. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.
- D. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

## 1.5 COORDINATION

- A. Coordinate installation of board fire protection with other construction specified in other Sections to comply with the following:
1. Avoid unnecessary exposure of board fire protection to abrasion and other damage likely to occur during construction operations subsequent to its application.
  2. Do not install board fire protection on structural members until piping and other construction behind fire-resistive materials have been completed, uninterrupted coverage of fire-resistive materials can be provided, and the need for subsequent cutting and patching of fire-resistive materials has been eliminated.
  3. Expedite installation of board fire protection to minimize the time structural members are exposed without fire-resistive materials.
  4. Do not install enclosing or concealing construction until after board fire protection has been applied and inspected by authorities having jurisdiction.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Available Products: Subject to compliance with requirements, products that may be incorporated into the Work include, but are not limited to, the following:

- B. Products: Subject to compliance with requirements, provide one of the following:
1. Calcium Silicate Board Fire Protection:
    - a. BNZ Materials, Inc.; Marinite I.
    - b. Eternit, Inc.; Promat [H] [L].
    - c. Johns Manville, a Berkshire Hathaway Company; Super Firetemp [L] [M].
    - d. <Insert manufacturer's name; product name or designation.>
  2. Mineral-Fiber Board Fire Protection :
    - a. Albi Manufacturing, Division of StanChem Inc.; DriClad.
    - b. Isolatek International; Cafco-Board.
    - c. Thermafiber; [CW-90] [FireSpan].
    - d. <Insert manufacturer's name; product name or designation.>

## 2.2 MATERIALS

- A. Calcium Silicate Board: Rigid board containing no asbestos and consisting primarily of lime, silica, inert fillers, and cellulosic reinforcing fibers; with flame-spread and smoke-developed indexes of 0; passing ASTM E 136 for combustion characteristics; and as follows per ASTM C 656:
1. Maximum Use Temperature: Type [I] [II], [760 deg C (1400 deg F)] [927 deg C (1700 deg F)] per ASTM C 411 or ASTM C 518.
  2. Classification Grade: Grade [4] [5] <Insert grade>, [288 kg/cu. m (18 lb/cu. ft.)] [449 kg/cu. m (28 lb/cu. ft.)] <Insert value> per ASTM C 656.
  3. Thermal Conductivity: [0.12 W/m x K (0.81 Btu x in./h x sq. ft. x deg F)] <Insert value> at 425 deg C (800 deg F) per ASTM C 177 or ASTM C 518.
  4. Sheet Size: [1219 by 2438 mm (48 by 96 inches)] [1200 by 2510 mm (47-1/4 by 98-7/8 in.)] <Insert value> by thickness required to produce fire-resistance rating indicated.
  5. Finish: Sanded finish on [both sides] [one side].
- B. [Unfaced] [Foil-Faced] [Fiberglass Mat-Faced] Mineral-Fiber Board: Rigid board produced by combining slag-wool/rock-wool fibers with thermosetting resin binders passing ASTM E 136 for combustion characteristics; and as follows per ASTM C 612:
1. Maximum Use Temperature: Type [III] [IVA] [IVB] [V], [538 deg C (1000 deg F)] [649 deg C (1200 deg F)] [982 deg C (1800 deg F)] per ASTM C 411 or ASTM C 518.
  2. Maximum Density: [128 kg/cu. m (8 lb/cu. ft.)] [192 kg/cu. m (12 lb/cu. ft.)] <Insert value> per ASTM C 303.
  3. Thermal Conductivity: [0.036 W/m x K (0.25 Btu x in./h x sq. ft. x deg F)] <Insert value> at 24 deg C (75 deg F) per ASTM C 177 or ASTM C 518.
  4. Sheet Size: [305 by 1219 mm (12 by 48 inches)] [1219 by 1828 (48 by 72 inches)] <Insert value> by thickness required to produce fire-resistance rating indicated.
  5. Surface-Burning Characteristics: Flame-spread and smoke-developed indexes of [25] [0] and [5] [0], respectively per ASTM E 84.

- C. Anchorage Accessories: Provide manufacturer's standard board-anchorage components complying with related design of UL or another testing and inspecting agency acceptable to authorities having jurisdiction.
- D. Joint Treatment and Finishing Materials: For exposed calcium silicate board applications, provide joint treatment tape and joint compounds recommended in writing by board manufacturer for finishing surfaces.
  - 1. Prime calcium silicate boards to receive painted finish with an alkaline-resistant water-based paint according to board manufacturer's written instructions.

### PART 3 - EXECUTION

#### 3.1 PREPARATION

- A. Where welded-stud anchorage system is used, remove rust and scale from steel substrates at locations to receive steel studs.

#### 3.2 INSTALLATION

- A. Comply with manufacturer's written instructions for particular conditions of installation in each case.
- B. Install board fire protection to comply with requirements for thicknesses, number of courses (layers), construction of joints and corners, and anchorage methods applicable to fire-resistance-rated assemblies indicated.
- C. Finish exposed calcium silicate board to comply with board manufacturer's written instructions, and as follows:
  - 1. At joints in calcium silicate board, embed tape in joint compound and apply first, fill, and finish coats over joint compounds, fastener heads, and accessories.
  - 2. Apply a thin, uniform skim coat of joint compound over entire surface.
  - 3. Touch up and sand between coats and after last coat as needed to produce a surface free of visual defects, tool marks, and ridges.

#### 3.3 FIELD QUALITY CONTROL

- A. Inspecting Agency: Engage a qualified independent inspecting agency to inspect board fireproofing and prepare inspection reports.
- B. Testing Services: Inspecting of completed installations of board fireproofing shall take place in successive stages as installation of board fireproofing proceeds. Do not proceed with installation of board fireproofing for the next area until **[inspecting agency] [NIH Division of the Fire Marshal]** determines completed work shows compliance with requirements.
  - 1. Inspecting agency shall state in each report whether inspected board fireproofing comply with or deviate from requirements.

- C. Remove and replace board fireproofing where inspections indicate that they do not comply with specified requirements.
- D. Additional inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- E. Proceed with enclosing board fireproofing with other construction only after inspection and approval by the NIH Division of the Fire Marshal. Where board fireproofing will be left exposed, it can be inspected as part of the final acceptance (pre-occupancy) inspection performed by the NIH Division of the Fire Marshal.

#### 3.4 PROTECTION

- A. Coordinate installation of board fire protection with other construction to minimize cutting into, or removal of, installed fire-resistive materials. As other construction is successively completed, replace or repair board fire protection that has been cut away to facilitate this other construction. Maintain complete coverage of full thickness on members and substrates protected by board fire protection.
- B. Provide final protection and maintain conditions in a manner acceptable to Installer, manufacturer, and authorities having jurisdiction that ensure that board fire protection is without damage or deterioration at time of Substantial Completion.

END OF SECTION 078200