

INDEX - SPECIAL PROVISIONS AND TECHNICAL SPECIFICATIONS

|        |                                   |          |
|--------|-----------------------------------|----------|
| 014000 | QUALITY CONTROL                   | SP - 132 |
| 014219 | REFERENCE STANDARDS               | SP - 142 |
| 015000 | TEMPORARY FACILITIES AND CONTROLS | SP - 144 |
| 016000 | PRODUCT REQUIREMENTS              | SP - 156 |
| 017300 | EXECUTION                         | SP - 162 |
| 017700 | PROJECT CLOSEOUT                  | SP - 170 |

**DIVISION 02 - EXISTING CONDITIONS (NOT USED)****DIVISION 03 - CONCRETE**

|               |  |                  |
|---------------|--|------------------|
| 033000        | CAST-IN-PLACE CONCRETE                   | SP - 178         |
| 033547        | CONCRETE FLOOR SEALER                    | SP - 188         |
| <b>035413</b> | <b><i>Gypsum Cement Underlayment</i></b> | <b>SP - 189A</b> |

**DIVISION 04 - MASONRY**

|        |                |          |
|--------|----------------|----------|
| 042613 | MASONRY VENEER | SP - 190 |
|--------|----------------|----------|

**DIVISION 05 - METALS**

|        |                                |          |
|--------|--------------------------------|----------|
| 050500 | COMMON WORK RESULTS FOR METALS | SP - 201 |
| 051200 | STRUCTURAL STEEL FRAMING       | SP - 211 |
| 053100 | STEEL DECKING                  | SP - 218 |
| 054000 | COLD-FORMED METAL FRAMING      | SP - 222 |
| 055000 | METAL FABRICATIONS             | SP - 232 |
| 055113 | METAL PAN STAIRS               | SP - 238 |
| 055133 | METAL LADDERS                  | SP - 244 |
| 055200 | RAILINGS – COMMON REQUIREMENTS | SP - 247 |
| 055215 | STEEL PIPE RAILINGS            | SP - 253 |

**DIVISION 06 - WOOD, PLASTICS, AND COMPOSITES**

|        |  |          |
|--------|--|----------|
| 060500 | COMMON WORK RESULTS FOR WOOD, PLASTICS, AND COMPOSITES | SP - 255 |
| 061000 | ROUGH CARPENTRY  | SP - 261 |
| 061643 | GYPSUM SHEATHING, FIBERGLASS MAT-FACED                 | SP - 266 |

**DIVISION 07 - THERMAL AND MOISTURE PROTECTION**

|           |   |          |
|-----------|---|----------|
| 070500    | COMMON WORK RESULTS FOR THERMAL AND MOISTURE PROTECTION | SP - 268 |
| 071416    | COLD FLUID-APPLIED WATERPROOFING                        | SP - 274 |
| 072100    | THERMAL INSULATION                                      | SP - 278 |
| 072616    | BELOW-GRADE VAPOR RETARDERS                             | SP - 280 |
| 072746    | FLUID-APPLIED MEMBRANE AIR BARRIERS                     | SP - 282 |
| 074213,13 | METAL COMPOSITE MATERIAL WALL PANELS                    | SP - 291 |
| 075419    | POLYVINYL-CHLORIDE (PVC) ROOFING                        | SP - 300 |
| 076200    | SHEET METAL FLASHING AND TRIM                           | SP - 315 |
| 077100    | ROOF SPECIALTIES  | SP - 326 |
| 077200    | ROOF ACCESSORIES  | SP - 336 |
| 078413    | PENETRATION FIRESTOPPING                                | SP - 343 |
| 079200    | JOINT SEALANTS  | SP - 347 |

## SECTION 03 54 13 - GYPSUM CEMENT UNDERLAYMENT

### PART 1 GENERAL

#### 1.01 RELATED DOCUMENTS

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

#### 1.02 SUMMARY

- A. Section Includes gypsum cement floor underlayment.

#### 1.03 SUBMITTALS

- A. General: Submit the following in accordance with Conditions of Contract and Division 01 Specification Sections.
- B. Product Data: Submit "Letter of Conformance" in accordance with Section 01 33 00 indicating specified items selected for use in project with the following supporting data.

- 1. Product Data: For each type of product indicated.

#### 1.04 SYSTEM PERFORMANCE REQUIREMENTS

- A. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E90 and classified according to ASTM E413 by an independent testing agency.
- B. IIC-Rated Assemblies: For IIC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E492 and classified according to ASTM E989 by an independent testing agency.
- C. Fire-Resistance Ratings: Where indicated, provide gypsum-cement underlayment systems identical to those of assemblies tested for fire resistance per ASTM E119 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.
  - 1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

#### 1.05 QUALITY ASSURANCE

- A. Installers: Engage only qualified installers for work of this Section. Refer to Part 4 for definition.

## 1.06 PROJECT CONDITIONS

- A. Environmental Limitations: Comply with manufacturer's written recommendations for substrate temperature and moisture content, ambient temperature and humidity, ventilation, and other conditions affecting underlayment performance.
- B. Close areas to traffic during underlayment application and for time period after application recommended in writing by manufacturer.

## 1.07 COORDINATION

- A. Coordinate cement-based underlayment with requirements of finish flooring products, including adhesives, specified in Division 09 Sections.
  - 1. Before installing surface sealers recommended by underlayment manufacturer, if any, verify compatibility with finish flooring installation adhesives.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS AND PRODUCTS

- A. Basis of Design is "LevelRock 3500 Floor Underlayment with SE-100 Surface Enhancer"; USG (United States Gypsum Company) (800-847-4431). Other acceptable manufacturers include:
  - 1. Maxxon Overspray Primer/Sealer"; Maxxon Corporation (800-356-7887)
  - 2. Hacker Industries, Inc. (800-642-3455)

### 2.02 PRODUCTS AND MATERIALS

- A. Gypsum Cement Underlayment: Self-leveling, gypsum cement product that can be applied in minimum uniform thickness as shown on Drawings.
- B. Gypsum Cement: Gypsum cement product as manufactured by listed manufacturers.
- C. Aggregate: Well-graded, washed gravel, 1/8" to 1/4", or coarse sand as recommended by underlayment manufacturer.
  - 1. Provide aggregate when recommended in writing by underlayment manufacturer for underlayment thickness required.
- D. Water: Potable and at a temperature of not more than 70 degrees F.
- E. Floor Primer and Sealer: Products of underlayment manufacturer recommended in writing for substrate, conditions, and application indicated.

## 2.03 MIXES

- A. Mix proportions and methods shall be in strict accordance with product manufacturer's recommendations.
- B. Compressive strength of 2,500 psi. Do not over water.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Examine substrates, with Installer present, for conditions affecting performance of underlayment including substrate moisture content. Begin underlayment application only after unsatisfactory conditions have been corrected.

### 3.02 PREPARATION

- A. General: Prepare and clean substrate according to manufacturer's written instructions for substrate indicated. Provide clean, dry, neutral-pH substrate for underlayment application.
  - 1. Subfloor shall be structurally sound, clean, and free of mud, oil, grease, or other contaminants.
- B. Prior to installation, inspect the area to be poured for proper attachment of the subfloor and replace any areas of subfloor that have weakened or delaminated during construction. All stud wall base plates in doors and other openings shall be removed.
  - 1. Treat nonmoving substrate cracks to prevent cracks from telegraphing through underlayment according to manufacturer's written recommendations.
  - 2. Fill substrate voids to prevent underlayment from leaking into lower levels or adjacent spaces.
  - 3. Verify that the subfloor deflection meets project specification.
- C. Priming Subfloor: Apply primer as recommended by the underlayment manufacturer based on field conditions at time of installation.
- D. Expansion Joints: Allow joints to continue through the underlayment at same width.

### 3.03 APPLICATION OF GYPSUM CEMENT UNDERLAYMENT

- A. Scheduling: Application shall not begin until the building is enclosed, including roof, windows, doors, and other fenestration. Install after drywall installation.
- B. Application: Spread and screed to a smooth surface. Except at authorized joints, place underlayment as continuously as possible until application is complete so that no gypsum cement slurry is placed against underlayment product that has obtained its initial set.

- C. Curing: Provide continuous ventilation and adequate heat to rapidly remove moisture from the area until the underlayment is dry. Provide mechanical ventilation if necessary. Test for dryness in the presence of the Owner's Representative utilizing the procedure as recommended by the underlayment manufacturer.

### 3.04 PREPARATION FOR INSTALLATION OF GLUE DOWN FLOOR GOODS

- A. Sealing: Seal all areas that receive glue according to the underlayment manufacturer's specifications. Any floor areas where the surface has been damaged shall be cleaned and sealed regardless of floor covering to be used.
  - 1. Where floor goods manufacturers require special adhesive or installation systems, their requirements supersede these recommendations.

### 3.05 FIELD QUALITY CONTROL

- A. Slump Test: Gypsum cement mix shall be tested for slump as its being pumped using a 2" x 4" cylinder for compliance with manufacturer's written recommendations.
- B. Field Samples: At least one set of three (3) molded cube samples shall be taken from each day's pour during the application. Cubes shall be tested as recommended by the underlayment manufacturer in accordance with ASTM C472 using split brass molds. Test results shall be available to the Architect, Owner's Representative and Contractor from applicator upon request.

### 3.06 PROTECTION

- A. During construction, place temporary wood planking over underlayment wherever it will be subjected to heavy wheeled or concentrated loads.

## PART 4 APPENDICES

### 4.01 REFERENCES

- A. ASTM International (ASTM) Publications:
  - 1. C472 "Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete"
  - 2. E90 "Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements"
  - 3. E413 "Classification for Rating Sound Insulation"
  - 4. E492 "Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine"
  - 5. E989 "Standard Classification for Determination of Impact Insulation Class (IIC)"

#### 4.02 DEFINITIONS

- A. Qualified Installer: One who is acceptable to manufacturer, who has completed cement-based underlayment applications similar in material and extent to that required for this Project, and whose work has resulted in construction with a record of successful in-service performance

#### 4.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials in original packages and containers, with seals unbroken, bearing manufacturer's labels indicating brand name and directions for storage, mixing with other components, and application.
- B. Store materials to comply with manufacturer's written instructions to prevent deterioration from moisture or other detrimental effects.

END OF SPECIFICATION SECTION 03 54 13