

**SECTION 32 14 13.16**  
**CONCRETE PAVER SLABS IN MORTAR BED**  
**(1995 MasterFormat Section 02784, Section 02788)**

PART 1 GENERAL

1.01 SUMMARY

- A) Section Includes:
  - 1) Concrete paving slabs.
  - 2) Preparation of concrete base.
  - 3) Slurry (bond) coat.
  - 4) Mortar bed.
  - 5) Cleaners, sealers.
- B) Related Sections
  - 1) Section [ ] – Aggregate Subbase.
  - 2) Section [ ] – Concrete [Walks] [Curbs] [and] [Gutters],
  - 3) Section [ ] – Cast-in-Place Concrete.
  - 4) Section [ ] – Sealants and Caulking.

1.02 REFERENCES

- A) American National Standards Institute (ANSI)
  - 1) Specifications for the Installation of Ceramic Tile.
- B) American Society for Testing and Materials (ASTM)
  - 1) C 920, Specification for Elastomeric Joint Sealants.
- C) Tile Council of America (TCA).
  - 1) Handbook for Ceramic Tile Installation.
- D) Canadian Standards Association (CSA)
  - 1) A231.1, Precast Concrete Paving Slabs.

1.03 SUBMITTALS

- A) In accordance with Conditions of the Contract and Division 1 Submittal Procedures Section.
- B) Manufacturer's drawings and details: Indicate perimeter conditions, relationship to adjoining materials and assemblies, expansion and control joints, concrete paving slab layout, patterns, color arrangement, installation and setting details.
- C) Concrete Paving Slabs:
  - 1) Four full-sized samples representing expected extremes of color and texture in the finished application. Submit samples for each slab type, thickness, color and finish.
  - 2) Accepted samples become the standard of acceptance for the work.
  - 3) Manufacturer's literature and material safety data sheets (MSDS) for the safe handling of the specified materials and products.
- D) Paving Slab Installation Subcontractor:
  - 1) A copy of installer's current certificate from the Interlocking Concrete Pavement Institute's (ICPI) Paver Installer Certification program.

1.04 QUALITY ASSURANCE

- A) Regulatory Requirements and Approvals: [Specify applicable licensing, bonding or other requirements of regulatory agencies.]
- B) Paving Subcontractor Qualifications:
  - 1) Utilize an installer having successfully completed concrete paving slab installation similar in design, material and extent indicated on this project.

- 2) Installer shall hold a current membership to the Interlocking Concrete Pavement Institute (ICPI).
  - 3) Installer shall hold a current certificate to the Interlocking Concrete Pavement Institute's (ICPI) Paver Installer Certification program. Installation crew shall have at least one member having completed at least Level One of this Certified Paver Installer program present at jobsite at all times.
- C) Mock-Up(s):
- 1) Install a 7 ft. x 7 ft. mock-up area representing full scope of this specification for all types of slabs used on project.
  - 2) Mock-up area(s) will be used as the standard by which all work will be judged and compared.
  - 3) Subject to acceptance by Owner, mock-up(s) may be retained as part of the finished work.
  - 4) If the mock-up(s) are not retained, remove and properly dispose of mock-up.
- 1.05 DELIVERY, STORAGE & HANDLING
- A) General: Comply with Division 1 Product Requirement Section.
  - B) Comply with manufacturer's ordering instructions and lead-time requirements to avoid construction delays.
  - C) Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers packaging with identification labels intact.
    - 1) Coordinate delivery and paving schedule to minimize interference with normal use of buildings adjacent to paving.
    - 2) Deliver concrete paving slabs to the site in steel banded, plastic banded or plastic wrapped packaging capable of transfer by fork lift or clamp lift.
    - 3) Unload slabs at job site in such a manner that no damage occurs to the product.
  - D) Storage and Protection: Store materials protected such that they are kept free from mud, dirt, and other foreign materials. Store concrete paving slab cleaners and sealers per manufacturer's instructions.
    - 1) Cover mortar sand and grout sand with waterproof covering if needed to prevent exposure to rainfall or removal by wind. Secure the covering in place.
    - 2) Protect cementitious materials from moisture and freezing temperatures. Store in a dry location.
- 1.06 PROJECT/SITE CONDITIONS
- A) Environmental Requirements:
    - 1) Do not install in rain or snow.
    - 2) Do not install when outside temperature is equal to or below 45° F (5° C).
- 1.07 MAINTENANCE
- A) Extra Materials: Provide [specify area or percentage] additional material for use by owner for maintenance and repair.

## PART 2 PRODUCTS

- 2.01 CONCRETE PAVING SLABS
- A) Manufacturer: StoneBilt Concepts, Henderson, Colorado
    - 1) Contact: Gregory Stavaridis, 303-867-6700
  - B) Concrete Paving Slabs:
    - 1) Travertine (Light and/or Dark)
    - 2) Sandstone (Light Buff, Dark Buff and/or Rustic Red)
    - 3) Slate (Bluestone and/or Smoke)

- 4) Old World (Limestone and/or Raven)
- 5) Classic (Pewter, Brick Red and/or Buff)
- C) Size:
  - 1) 1.75 in. thick.
  - 2) Available sizes as follows:

	12" x 12"	12" x 18"	12" x 24"	18" x 18"	18" x 24"	24" x 24"
<b>Travertine</b>						
Light		x	x			
Dark		x	x			
<b>Sandstone</b>						
Light Buff	x	x	x	x	x	x
Dark Buff	x	x	x	x	x	x
Rustic Red	x	x	x	x	x	x
<b>Slate</b>						
Bluestone	x	x	x	x	x	x
Smoke	x	x	x	x	x	x
<b>Old World</b>						
Limestone	x		x	x		x
Raven	x		x	x		x
<b>Classic</b>						
Pewter						x
Buff						x
Brick Red						x

2.02 PROJECT SUBSTITUTIONS

- A) Substitutions: No substitutions permitted.

2.03 MORTAR

- A) Mortar bed or thin-set mortar: Meets ANSI A118.4, Specifications for latex-portland cement mortar.
- B) Epoxy mortar: Meets ANSI 118.3, Specifications for chemical resistant, water cleanable tile- setting and-tile grouting epoxy and water cleanable tile-setting epoxy adhesive.

2.04 GROUT

- A) Meets ANSI 118.7, polymer modified cement grouts for tile installation.
- B) Meets ANSI 118.3, specifications for chemical resistant, water cleanable tile- setting, and-tile grouting epoxy and water cleanable tile-setting epoxy adhesive.
- C) Grout colors: Selected by the Architect from the manufacturer's complete color range.
- D) Acceptance of grout products is subject to the approval of both the Architect and the slab manufacturer prior to bid closing.

2.05 ACCESSORIES

- A) Water: Potable and free from minerals or other materials that are detrimental to mortar and grout mixes.
- B) Primer: As recommended by the mortar material manufacturer.
- C) Sealant [and backing materials]: Conforming to ASTM C 920, specified in Section [ ].
- D) Mixes: Prepare pre-mix materials in accordance with manufacturer's written

- instructions.
- E) Provide paver/hardscape specific edge restraints installed around the perimeter of all concrete paver slabs not restrained by other materials (concrete curb, sidewalk edge, etc.) and not mortar set. Aluminum and/or landscape edging shall not be used.
    - 1) Manufacturer: [Specify manufacturer.].
    - 2) Material: [Plastic] [Concrete] [Steel] [Pre-cast concrete] [Cut stone] [Concrete].
    - 3) Material Standard: [Specify material standard.].
  - F) [Cleaners] [Sealers]
    - 1) Manufacturer: [Specify manufacturer.].
    - 2) Material Type and Description: [Specify material type and description.].
    - 3) Material Standard: [Specify material standard.].

### PART 3 EXECUTION

#### 3.01 ACCEPTABLE INSTALLERS

- A) As per above 1.04 B. No exceptions shall be made.

#### 3.02 EXAMINATION

- A) Inspect areas and conditions under which work is to be performed and identify in writing conditions detrimental to the proper and timely completion of the work.
- B) Verify that concrete base is sloped for drainage and is free of standing water, dust, oil, grease, paint, wax, curing compounds, primer, sealers, form release agents, or any deleterious substances and debris which may prevent or reduce bonding.
- C) Verify that grout materials can be cleaned from slabs, or provide coating to concrete paving slabs to facilitate removal of grout materials.
- D) Do not proceed with the work until unsatisfactory conditions have been corrected and surfaces and conditions comply with the applicable requirements of ANSI A-108.1.
- E) Contractor shall certify in writing that concrete base complies to drawing elevations and specifications.
  - 1) Depth of setting bed shall not compensate for variations in depth of concrete base outside of specified tolerances.

#### 3.03 PREPARATION

- A) Completely remove loose particles and debris from surface of concrete base. This may require mechanical grinding and scarifying of the surface.
- B) Neutralize any trace of strong acid or alkali from the substrate prior to mortar application.
- C) If leveling of the concrete surface is necessary, apply latex Portland cement mortar surface leveling materials to the surface of the substrate to bring the surface to a true, even plane. Allow mortar-leveling materials to set prior to installation.
- D) Surface to receive [slurry coat and] mortar shall have a tolerance of  $\pm 1/4$  in. over 10 ft for normal mortar setting bed applications and  $\pm 1/8$  in. over 10 ft for thin set mortar setting bed applications.

#### 3.04 INSTALLATION

- A) Moisten concrete base and apply slurry bond coat to concrete base per manufacturer's directions.
- B) Mix and apply mortar setting bed material in accordance with the manufacturer's instructions. Spread mortar in quantities that will remain plastic and workable during installation of slabs.
  - 1) Mortar bed shall be  $3/4$ " to 1-1/2".
  - 2) Thin-set shall be [\_\_\_\_\_].
- C) Moisten the bottoms of the slabs prior to placing on mortar or thin-set materials.

- D) Lay slabs in pattern(s) on mortar bed as indicated on the drawings. Saw cut slabs as required with a masonry saw. A paver splitter shall not be used. Cut perimeter units no less than 1/3 of full size units. Do not install stained, chipped, cracked, or broken slabs.
- E) Slabs shall be struck with rubber mallet to set.
- F) Maintain 1/4 in. wide joints, no larger than 3/8 in. Plastic spacers may be used.
- G) Joints shall be uniform and straight in all both directions as indicated on the drawings.
- H) Lippage: maintain no greater than 1/4 in. height difference between adjacent slabs.
- I) Follow manufacturer's recommended times for setting mortar to cure before grouting.
- J) Maintain clean surfaces and joints prior to applying grout.
- K) Grout joints in accordance with ANSI A108.10.

3.05 EXPANSION AND CONTROL JOINTS

- A) Locate and obtain the approval of the Architect before commencing the installation.
- B) In accordance with TCA Detail No. EJ171, Handbook for Ceramic Tile Installation.
- C) Provide [at maximum 12 ft on center in each direction] [as indicated on the drawings].
- D) Provide where dissimilar materials contact the slabs including walls, columns, and curbs.
- E) Carry completely through the assembly to surface.
- F) Keep clear of mortar setting materials and grout.
- G) Apply backer materials and sealant in joints as specified in Section [ ].

3.06 CLEANING AND SEALING

- A) Clean and seal concrete slabs in accordance with the manufacturer's written recommendations.

3.07 FIELD QUALITY CONTROL

- A) The final surface tolerance from grade elevations shall not deviate more than  $\pm 1/4$  in. under a 10 ft straightedge.
- B) Check final surface elevations for conformance to drawings.

3.08 PROTECTION

- A) Protect finished work against weather, freezing and immersion in water for [at least 21 days after installation][per mortar and grout manufacturer's recommendations].
- B) Protect slabs from construction-related foot traffic for at least 24 hours after completion of the installation and general foot traffic for at least 72 hours after installation per the mortar and grout manufacturer's recommendations.
- C) Protect textured material during installation and afterwards. Seal architectural finishes of slabs immediately after the grout is dry. Cover and protect the textured surface from vehicular traffic during the construction period.
- D) After work in this section is complete, protect work from damage due to subsequent construction activity on the site.

END OF SECTION