CONCAST

Fibercrete®

PRECISELY ENGINEERED HIGH STRENGTH CONCRETE

FLAT PAD SPECIFICATIONS

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Concast Flat Pad Specifications

GENERAL SPECIFICATIONS FOR FLAT PADS

1. TECHNICAL SCOPE

1-A. These specifications cover precast Fibercrete® (G.F.R.C.) flat pads manufactured by Concast Incorporated in Zumbrota, Minnesota. The manufacturer must have experience in design and fabrication of these products and also the facilities for fabricating them with the quality specified herein and without delay to the agreed upon schedule.

1-B. The flat pads shall be designed and constructed to provide a serviceable life and warranty of 35 years when installed outdoors in full sunlight and without any protection from the weather at any location in the continental United States or Canada.

1-C. The Supplier shall design, construct, perform dimensional and quality control tests, and prepare the pads for truck shipment. Shipping and delivery responsibilities shall be defined in the project specific purchase documents. The Supplier shall provide all necessary documentation as stated in this specification.

2. DIMENSIONS AND DESIGN

2-A. Drawings shall be made available for engineering approval and field installation identification; in PDF, SolidWorks, or AutoCAD format. Standard PDF format component drawings shall also be available online.

2-B. The tolerances of the dimensions of each Fibercrete® flat pad shall not exceed +/-1/4". These tolerances apply to the components when ready for shipping, when set on a flat and level surface with no loads applied to it.

2-C. The manufacturer's design dimensions must be approved by the Purchaser prior to fabrication.

2-D. Flat pads shall be made available to fit design requirements and dimensions of the equipment being supported.

2-E. Provisions, such as cast-in threaded inserts, must be offered for lifting any pad. Mounting holes must be adequately reinforced to avoid damaging the pad and to provide an ultimate strength of at least 5 times the pad weight when the part is lifted in accordance with the manufacturer's instructions.

2-F. The flat pad shall have a rigid, flat, and stable top surface.

2-G. The flat pad color shall be a natural concrete gray unless otherwise required and agreed upon.

2-H. If required, the flat pad shall be manufactured with equipment bolt-down accommodations.

2-I. The Concast "Waffle Bottom Flat Pad" and the "Lightweight Flat Pad" is designed to permit loose earth to fill the bottom surface voids which level and stabilize the pad.

2-J. The flat pad shall be designed to support specific equipment and applications

2-K. The precast components are designed to conform to requirements stated in ASTM C857-07 "Practice for Minimum Structural Design Loading for Underground Precast Concrete Utility Structures, ASTM C858-07 "Specifications for Underground Precast Concrete Utility Structures".

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3. PERFORMANCE AND MATERIALS

3-A. Cement shall conform to ASTM C150-07 "Specification for Portland Cement".

3-B. Course and fine aggregates shall conform to ASTM C33 "Specification for Concrete Aggregates".

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3-C. Preparation of concrete shall conform to ASTM A94 "Specification for Ready-Mix Concrete" & ACI 304 "Guide for Mixing, Transporting and Placing Concrete".

3-D. LAY-UP GFRC (PART NUMBERS WITH FC PREFIX)

3-D.1 Composed of cement mortar reinforced by alkali resistant glass fiber, and deformed high tensile welded wire. It is fabricated via the Concast spray lay-up method which incorporates a minimum of 4 percent volume A.R. glass fibers.

3-D.2 Flat pads shall conform to AIA Masterspec Section 03491 for Glass Fiber Reinforced Concrete and quality control procedures per PCI# MNL-130-91.

3-E. PREMIX GFRC (PART NUMBERS WITH FP OR FPSB PREFIX)

3-E.1 Composed of cement mortar reinforced by alkali resistant glass fiber, and a deformed prefabricated high tensile welded wire. It is fabricated via casting into steel forms.

3-E.2 A.R. Glass is required to prevent glass deterioration if in contact with any poured cement or grout foundation.

3-E.3 Shall obtain a minimum compressive strength of 6000 PSI at 28 days of age.

3-F. MICRO-CONCRETE (PART NUMBERS WITH FPS PREFIX)

3-F.1 Precast solid concrete flat pads shall be cast into steel forms using Type I/II Portland Cement.

3-F.2 Concrete shall contain 6% entrained air (plus or minus 1%)

3-F.3 Shall obtain a minimum compressive strength of 7500 PSI at 28 days of age.

3-G. REINFORCEMENT

3-G.1 Steel reinforcing bars shall conform to ASTM A615 "Specification for Deformed and Plain Billet Steel Bars for Concrete Reinforcement".

3-G.2 Steel reinforcing wires shall conform to ASTM A496 "Specification for Steel Wire, Deformed for Concrete Reinforcement".

3-G.3 Steel reinforcing weld wire cages shall conform to ASTM A497 "Specification for Steel Welded Wire Fabric, Deformed for Concrete Reinforcement".

3-H. The flat pad must not be affected by asphalt, transformer oil, other common chemicals, weather, or other normal service conditions that it might be exposed to.

3-I. The flat pad shall be designed and constructed so that it and any related hardware will not trap or hold water, and so that it will be able to withstand repeated freeze and thaw cycles.

3-J. The flat pad must not warp, rust, be UV degradable, or sustain combustion.

3-K. With equipment installed; the flat pad shall be capable of withstanding temperature variations of -40° Fahrenheit to 149° Fahrenheit without cracking, splitting, or otherwise deforming. Material shall be have been tested and conform to ASTM C666/C666M-03.

3-L. When required, site-specific, PE stamped, seismic calculations shall be provided.

3-M. Concrete properties will vary depending upon the particular formulation of the concrete mix design. Customized properties can be achieved by using nonstandard ingredients, by changing or adding reinforcements, and by tailoring the overall mix design.

3-N. METAL COMPONENT PERFORMANCE

3-N.1 All galvanized steel covers, hardware, and embedments shall meet the following requirements:

- Steel Deck Plating - ASTM A786 | Steel Sheet - A1011 HSLAS Gr 50
- Steel Angles & Flats - ASTM A-36 | Galvanized Covers - ASTM 123
- Galvanized Hardware - ASTM 153

3-N.2 All stainless steel hardware and embedments shall meet the following requirements:

- Stainless Steel Angles & Flats Type 304 - ASTM A276
- Stainless Steel Sheet Type 304 - ASTM A-240

3-N.3 All aluminum covers, hardware, and embedments shall meet the following requirements:

- Aluminum Flats 6061-T6511 - ASTM B221 | Aluminum Sheet Smooth 5052-H32 - ASTM B209
- Aluminum Deck Plating 3003 - ASTM B209 or 6061 - ASTM B632
- Aluminum Angles 6061-T6 - ASTM B308 | Aluminum Channels 6061-T6 - ASTM B308

4. INSTALLATION REQUIREMENTS

4-A. When the bottom of the excavation is soft, or where in the opinion of the soils engineer unsatisfactory foundation conditions exist, the contractor shall over excavate to a depth to ensure a proper foundation as directed by the soil engineer. The excavation can then be brought back up to the prescribed grade with a thoroughly compacted granular material.

4-B. All flat pad excavations shall be backfilled to restore pre-existing conditions or to the final grade as specified by the owner.

4-C. All backfill material shall be a granular material as required by the soils engineer. Flat pads shall be designed to have no limitations of backfill height.

4-D. Installation guidelines shall be made available online.

NPCA CERTIFIED PLANT

aci international

AWEA BUSINESS MEMBER

SEPA solar electric power association