

CHAPTER 3BPRECAST AND CAST-IN-PLACE ROOF DECKING3B-01. GENERAL

a. Precast roof decking for spans up to 8 feet can be:

- (1) Nailable or non-nailable concrete
- (2) Gypsum slabs
- (3) Laminated gypsum planks
- (4) Structural cement fiber

b. Precast floor or roof units can be:

- (1) Solid or hollow core
- (2) Prestressed or nonprestressed
- (3) With or without a reinforced concrete topping

c. Cast-in-place roof deck systems shall use:

- (1) Steel forms or asbestos-cement formboard or mineral-fiber formboard with subpurlins, with -
- (2) Gypsum-concrete, cellular-concrete or perlite/vermiculite concrete and,
- (3) Woven or welded wire mesh reinforcement.

3B-02. SUBMITTALS

a. Check the shop drawings for layout and placement details.

- (1) Are details shown for openings and penetrations?
- (2) For anchorage details?
- (3) For joint treatment?
- (4) Do all roof areas have positive slope for drainage?

b. Be familiar with manufacturers installation instructions.

c. Check for required certificates and certified test reports.

3B-03. PRECAST ROOF DECKING

a. Materials

- (1) Is concrete decking mailable type? Metal tongue-and-groove edging is required. Edging must be galvanized steel.
- (2) Has the lightweight concrete decking been autoclave cured?

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(3) Are gypsum planks of required joint shape, thickness and width?

(4) Does the structural cement-fiber material meet noncombustibility requirements?

(5) Is decking finished for acceptable expose ceilings?

(6) Are subpurlins and cross tees factory primed or galvanized? Are anchors galvanized?

(7) Is fill required for joints and roof slope changes? Check for positive slope for drainage.

(8) Is wood blocking filler of pressure-treated material?

b. Installation

(1) Check cut decking for true edges and tight fit.

(2) Touch up abraded and welded surfaces with zinc-rich paint.

(3) Check hearing minimums and allowances for expansion.

(4) Check for quality welds at all subpurlin intersections with supporting structure.

(5) Suspended loads are not permitted unless specifically detailed in contract drawings.

3B-04. PRECAST ROOF AND FLOOR UNITS

a. Materials

(1) Concrete strength tests are required. Certified test results must be received.

(2) Person with approval authority must thoroughly check the design analysis.

(3) Is steel mesh reinforcement for topping of specified size and shape?

b. Installation

(1) Concrete strength tests are required. Certified test results must be received.

(2) Person with approval authority must thoroughly check the design analysis.

(3) Clean joint key ways before grouting.

(4) Run wire mesh reinforcement for topping across units to be perpendicular to span.

(5) Trowel finish topping to receive finish flooring or roofing. Check of required smoothness tolerance. Check for roof slope.

(6) Cure concrete topping as required. Do not use membrane curing compounds.

3B-05. CAST-IN-PLACE ROOF SYSTEMSa. Materials

(1) Design mix of the insulating material shall be specified compressive strength for forming system selected. Check for correct class of gypsum concrete.

(2) Design mix thickness shall provide specified "U" insulating value.

(3) Steel forms shall be ventilated type. Check for specified amount of venting.

(4) Check for specified type cement-asbestos formboard.

(5) Mineral- fiber formboard shall be suitable for painting. Board and paint shall be mildew resistant.

(6) Paperbacked lath shall have waterproof paper and galvanized wire. Reinforcing fabric and mesh shall also be galvanized.

b. Installation

(1) Check fit of formboard units to purlins and subpurlins. Stagger joints and attachment welds of subpurlins.

(2) See specs for orientation of fabric or mesh to subpurlins of formboard system.

(3) End laps for mesh are different from fabric laps, Check the specs.

(4) Check for required welds and venting of steel forms.

(5) paperbacked lath form shall be installed in accordance with manufacturer*s directions.

(6) Field control tests are required for wet density and compressive strength.

(7) Safety provision must be carefully checked. Work off of temporary runways.

(8) Check wet fill delivery system for continuous uniform flow. Screeded surface must be acceptable to apply roofing. Check for positive roof slopes for drainage.

(9) Remember moisture test on gypsum fill before finish ceilings are hung below.

(10) Check for compliance with special mixing instructions for perlite and vermiculite concrete.

(11) Is vented edge nailer thickness adequate for required "U" insulation value. Be sure that expansion joint material is provided at nailers and penetrations through the roof.

(12) Minimum placement temperature is 40 degrees F. Check for correct mixing water temperature.

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(13) Curing is required. Check concrete mix manufacturer*s direction.

(14) Check for specific tests for moisture content of wet fill before beginning roofing.