

DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENT  
PARKS AND RECREATION DIVISION

SPECIFICATIONS FOR PRECAST CONCRETE PLANKS  
for  
BOATING ACCESS SITE LAUNCH RAMPS

Concrete planks shall be constructed as shown on the drawing(s) titled, "Typical Plank for both the Upper and Lower Peninsula", dated January 1, 2003, and as specified herein.

The method of forming the planks shall be at the option of the vendor but shall generally conform to Michigan Department of Transportation 2003 Standard Specifications for Construction (herein referred to as "MDOT Standard Specifications"), Subsections 706.03 for Type B surfaces. Forms shall be of such thickness that planks will remain true to the shape and dimensions shown on the drawing(s).

Steel reinforcing bars shall meet MDOT Standard Specifications, Section 905 requirements and shall be handled and placed in accordance with MDOT Standard Specifications, Subsection 706.03 and as shown on the drawing(s).

Concrete used for the planks shall be in conformance with MDOT Standard Specifications, Section 701 except that materials shall be Type III Portland Cement, 2NS fine aggregate, 6A coarse aggregate and water. The proportion of cement, fine aggregate and coarse aggregate, by dry, loose volume, shall be approximately 1:1-3/4:3. Cement content shall be at least 6.5 sacks per cubic yard of concrete, with a compressive strength for the concrete mix of not less than 4000 psi at 28 days. Slump shall be 3-5 inches as measured by ASTM specification C-143 – standard Method of Test for Slump of Portland Cement Concrete. Use air-entraining admixture, but no other admixtures are to be used. Air-entrainment shall conform to the MDOT 2003 Standard Specifications for Construction, Section 903.03 and shall be measured at 6.5 +/- 1.5 percent, by volume, as measured by ASTM specification C-173 – Air content, as determined by the Volumetric Method.

The wearing surface of the planks shall be 1/8" wide grooves as noted on the drawings formed in accordance with MDOT Standard Specifications, Subsection 602.03.

Planks shall be straight with no bow over their total length and width as measured along either the top or bottom line of the plank and they shall be square. The diagonal dimensions of each finished plank shall measure within 1/4" of one another.

For each concrete batch mixture or each 50 cubic yards, whichever is lesser, collect 4 test cylinders according to ASTM C-31. One specimen to be tested at 7 days, two specimens tested at 28 days and one specimen for later testing if required. Testing shall be according to ASTM C-39 – Method of Test for Compressive Strength of Molded Concrete Cylinders. Test results to be provided to the owner in writing on the same day tests are made. In addition, one test cylinder from each concrete batch mixture or each 50 cubic yards, whichever is lesser shall be taken, with the batch number and the date taken marked on the test cylinder. Test cylinders shall conform to ASTM C31 and shall be available to the owner at the end of 21 days from the pour, for performing 28-day strength tests. The batch number shall be indicated directly on each plank.

Planks, in quantities stated, shall be delivered, FOB (Freight On Board), to the location(s) designated by the owner by the date(s) specified by the owner. Unloading of planks by the vendor may be required.

Spacers used for stacking planks at the designated delivery location(s) shall be high density extruded polystyrene with a minimum unit weight of 2 lbs per cubic foot. Spacers shall be a minimum of 1" thick, 6" wide, and a length to extend the width of the planks. Spacers for 18 foot planks shall be placed 1 foot from the plank ends and 4 feet on center, for a total of 5 spacers.

Planks shall be stored for a minimum of 30 days before delivery. Any delivered planks that are broken, have excessive cracking, or are not constructed to the plan shape and dimensions, or do not conform to the above specifications, will not be accepted. Replacement of such planks will be the responsibility of the vendor. Removal of such planks from the site may be requested by the owner and shall be done so at no additional cost.