

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION**

**SUPPLEMENT 1125
TESTING AND ACCEPTANCE OF PLASTIC SUPPORTS
FOR REINFORCING STEEL
October 19, 2007**

- 1125.01 Description**
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1125.01 Description. This supplement establishes testing procedures and acceptance criteria for reinforcing steel support chairs, manufactured from plastic materials, and as specified in C&MS 709.15. The subject of this supplement is the manufacturer/supplier of plastic reinforcing steel support chairs.

1125.02 Strength test at temperature. Measure the height from a flat surface of three samples of each plastic chair design, at 70° F (21° C). Record the measurements to the nearest 0.01 inch (0.25 mm). Subject the three samples to a minimum temperature of 110° F (38° C) for 1 hour. Separately remove each sample from the heat source and re-measure the height. The Department will reject plastic chair designs with a change in height of any of the three samples of 0.06 inch (1.5 mm) or more.

If all three the samples pass the above test, return the samples to the heat source for an additional 30 minutes at 110° F (38° C). Separately remove each sample from the heat source and within 5 minutes load to 330 pounds (150 kg). Apply the load for one minute to the sample by using #4 (#13M) reinforcing bar as a point load.

For samples designed to support multiple reinforcing steel bars at a uniform level (continuous style chair reinforcing steel supports), apply the load through #4 (#13M) reinforcing bars spaced at 6 inches (150 mm) along the length of the chair sample. The load applied per reinforcing bar in contact with the chair sample shall be 110 pounds (50 kg).

At the end of the loading period, record the final height of each sample, with the load applied, to the nearest 0.01 inch (0.25 mm).

The Department will reject plastic chair designs if any sample:

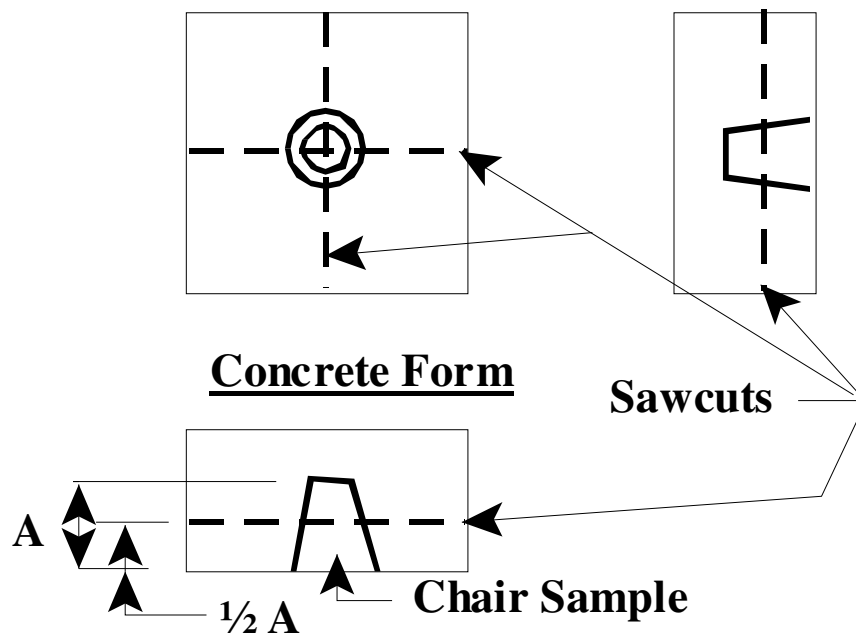
1. Deflects greater than 0.06 inches (1.5 mm) from the original height
2. Shows damage or breakage
3. Shows uplift of a portion of the chair off its supports

If a reinforcing steel chair design is a continuous style and too long to fit in the testing equipment, the chair may be shortened to a 12 inch (300 mm) sample length. The spacing of

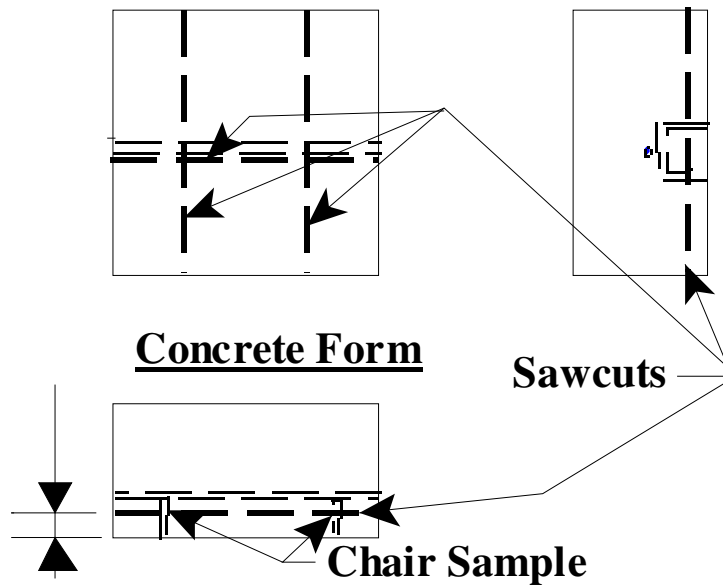
load points and required load shall be as described above for this type of chair sample.

1125.03 Damage to Coating Test. Install “snap-on” chair designs twice at the same location on a sample of epoxy coated reinforcing steel. Inspect the reinforcing steel coating for cuts, nicks, and abrasions and record the results.

1125.04 Aggregate Flow Test. After a plastic chair design passes 1125.02 and 1125.03, perform an aggregate flow test on the samples. Assemble one chair sample and the maximum permitted size of reinforcing steel into a form that will allow a minimum of 2 inches of clearance for the concrete from the top and sides of the chair sample. For continuous style chair samples, the sample length may be reduced to 12 inches (300 mm) for this test but will need to support at least three reinforcing steel bars in the form. The chair sample shall sit on the bottom of the form, as it would in the field. Place and consolidate a Class S Superstructure concrete mix, C&MS 499 with #57 coarse aggregate and a slump of 3 to 5 inches (75 to 125 mm), into the form around the chair sample and installed reinforcing steel. Consolidate the concrete by rodding 50 times full depth of the form, making sure to avoid contact with both the reinforcing steel and the chair sample. Cure the concrete for three days. After three days, remove the concrete sample from the forms and sawcut the sample to visually inspect the consolidation. For single chair samples, locate three sawcuts as follows: two sawcuts shall be vertical (one at mid-width, one at mid-length and intersecting at the center of the chair support); the third sawcut shall be horizontal and located at one-half the depth of the chair. See the figure below:



For continuous chair samples, locate four sawcuts as follows: three sawcuts shall be vertical (two located at 1/3 of the width of the sample and one mid-length of the sample); the fourth sawcut shall be horizontal located at one-half the depth of the chair. See the figure below:



After performing the sawcuts, photograph all of the internal surfaces of the dissected sample to verify proper consolidation around the plastic chair samples was achieved. The Department will reject plastic chair designs whose samples contained voids in the area around or inside the chair sample.

1125.05 Documentation. All tests required by this supplement shall be performed by an independent testing laboratory, or performed by the manufacturer of the plastic chairs but certified by a representative of an independent testing laboratory.

Submit a report for each plastic chair design to the Ohio Department of Transportation, Office of Materials Management, 1600 West Broad Street, Columbus, Ohio 43223 for approval. The report shall include: testing procedures followed, results of the tests, and pictures of the samples tested.

1125.06 Approval. Plastic supports for reinforcing steel meeting the requirements of C&MS 709.15 and passing all tests in this supplement shall be included on the Department's Approved List. The Department will not allow retesting for approval of rejected plastic chair designs.