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Industrialized Housing and Buildings

Technical Bulletin

IHB TB 10-03 – Concrete Acceptance for Foundations

IBC Chapter 19, IRC 402.2, ACI 318

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Foundation designs are required by Department rule 70.73 to provide material specifications for all materials required to construct the foundation. Material specifications would include the minimum compressive strength requirements for concrete used in the construction of the foundation.

As an example, a specific design may specify that the concrete have a minimum compressive strength of 3,000 psi at 28 days with a 1" maximum aggregate size, a maximum slump of 4", and 3 to 5% air entrainment. The industrialized builder responsible for construction of the foundation would use the engineer's specifications when ordering the concrete.

If the amount of concrete used for the job is greater than 50 cubic yards, then strength testing of the concrete delivered would also be required in accordance with the ASTM standards referenced in ACI 318, Building Code Requirements for Structural Concrete.

If the amount of concrete used for the job is less than 50 cubic yards, then the industrialized builder must obtain a copy of the trip ticket from the concrete supplier to verify that the concrete supplied met the specifications of the concrete ordered. A copy of the trip ticket must be given to the Council approved inspector as evidence that the concrete supplied meets the requirements of the mandatory building codes or the engineered foundation plan, whichever is greater.

The trip ticket will either specify the design criteria (such as compressive strength) or the mix design number of the concrete supplied – if necessary, the concrete supplier would be able to provide the design criteria of the concrete based on the mix design number.

In addition to the design criteria for the concrete, the trip ticket also provides other important information including, but not limited to, the following.

- The date of delivery
- The time the concrete truck departed from the concrete plant
- The time of delivery
- The time limit for placing the concrete
- The amount of water that may be added to the concrete mix after departure from the plant

Water in excess of that allowed by the trip ticket shall not be added to the concrete, and concrete shall not be poured in the rain or with water standing in the forms.

In addition, steps must be taken in accordance with ACI 318 to minimize the effects of hot weather (generally >90 degrees F with humidity <= 25%) and cold weather (generally <40 degrees F) on the concrete. The industrialized builder must consult the engineer or architect responsible for the foundation design to determine these requirements.