



DISCREPANCIES IN YIELD

Concrete yield is defined as the volume of freshly mixed concrete from a known quantity of ingredients. This is important to know because ready mixed concrete is sold on the basis of the volume of fresh concrete, usually expressed in cubic yards. The volume of freshly mixed and unhardened concrete in a batch is determined by dividing the total weight of the batch by the average weight per cubic foot of concrete.

Why Yield Problems Occur

Concrete shortages can be caused by a miscalculation of form volume or slab thickness. A one-eighth inch error in a 4" slab would result in a shortage of 3% -- or one cubic yard in a 32-yard order. Other causes include deflection or distortion of the forms by outward pressure from the concrete, an irregular sub-grade or placement over granular fill. Settlement of the sub-grade prior to placement also can increase slab thickness and result in a shortage.

What to Do About It

- Check concrete yield by making weight tests in accordance with American Society for Testing and Materials Specification C 138. Concrete yield volume in cubic feet is total batch weight in pounds divided by unit weight in pounds per cubic foot. The total batch weight is the sum of the weights of all ingredients from the batch ticket. The mixer truck also can be weighed empty and full. The difference is the total batch weight.
- Measure formwork accurately. Towards the end of long pours, carefully measure the remaining volume so that the amount in the last two or three trucks can be adjusted to provide the required concrete.
- Include an allowance of 4% to 10% over plan dimensions for waste, over excavation and other causes.
- Build forms so that they can withstand the pressure of the concrete without distorting.
- Make sure that the sub-grade below all slabs has been accurately finished and compacted to the proper elevation.