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1004.00 PCC REQUIREMENTS

1004.01 CEMENT CERTIFICATIONS

Note 7 in the Materials Sampling Guide, Volume II, requires that the pink copy of the cement certificate of compliance, DR Form 228 or a copy of the mill's own certification form be mailed to the Materials & Research Division. However, Materials & Research does not need the pink copy of the certification mailed to them anymore. The copy at the concrete production facility is enough for Materials & Research records.

The certificate of compliance is needed both for mills that require sampling and those that do not. When a sample is required, normal procedure has been to submit the pink copy with the sample. This is acceptable. For those mills which do not require sampling, please collect and submit the certifications on a routine basis but at a minimum of once each week.

1004.02 CONCRETE STRENGTH

The following English and Metric unit “Concrete Strength Variation” table is provided to define the different strengths that may be specified. The specified strength has varied as the Department has converted from English to Metric units and then back to English units. In the following table, the standard strengths are given in pounds per square inch (psi) and the various equivalent units that have been used in the past 5 years to specify this strength are shown. **However, the strength that a contractor is held-to can only be what is contained in the contract. So if the contract calls for 2900-psi, we cannot reject or deduct if he does not provide 3000-psi.**

Concrete Strength Variation

Current Standard Strength (psi)	Actual Specified Strength (psi)	Actual Specified Strength (Mpa)
3000	3000, 2900	20, 20.7, 21
3500	3500, 3625	25, 24.3, 24
4000	4000, 4350	30, 27.6, 27

@ 1004.03 CONCRETE CYLINDER POLICYCylinders

All concrete cylinders applicable to this policy will be 6 inches by 12 inches. All cylinders shall be cast by currently certified technicians, or by new or temporary employees trained and approved by qualified Materials and Research personnel in accordance with the NDR technician training program.

Structures

A set of three cylinders will be made for the first 100 cubic yards placed and an additional set of three cylinders will be made for the remainder of the concrete placed for each day provided at least 50 cubic yards more is placed. A minimum of three cylinders will be made for each day's placement. One cylinder from each set will be tested at 28 days. The other two cores from each set will be tested at the intervals designated by the engineer. If no intervals are designated, the cylinders will be tested at 7 days and 14 days respectively.

Pavements

A set of four cylinders will be made for each day's placement. These cylinders will be tested at the intervals designated by the engineer unless the pavement does not need to be cored. If the pavement will not be cored, at least one cylinder must be tested at 28 days. The other cylinders will be tested at the intervals designated by the engineer.

If the pavement must be cored and no intervals are designated, the cylinders will be tested at 7, 10, and 14 days or until the specified strength is attained. If needed, the fourth cylinder will also be tested at 14 days and the average strength of the two cylinders reported. If the pavement will not be cored and no intervals are designated, the cylinders will be tested at 7, 10, 14, and 28 days or until the specified strength is attained.

Miscellaneous Concrete

Concrete placements requiring five cubic yards or less and which are noncritical, may be accepted by the engineer without testing. Noncritical refers to placements that will not sustain traffic loading and for which failure is not likely to disrupt traffic or pose a threat of harm to the traveling public.

CONCRETE CYLINDER REQUIREMENTS SUMMARY						
CONCRETE PRODUCT	REQUIRED NUMBER OF CYLINDERS	REQUIRED BREAK DATE				
		7-DAYS	10-DAYS	14-DAYS	28-DAYS	OTHER
STRUCTURES*	3				2	2
PAVEMENTS**	4	1	1	1	1	
MISCELLANEOUS CONCRETE	Concrete placements requiring 5-cubic yards or less which are noncritical, may be accepted without testing.					
*3-cylinders are required for the first 100-yd³ each day and another set of 3-cylinders is required if a total of at least 150-yd³ is required in one day. The Engineer may set the date of the third cylinder break as necessary.						
**Four cylinders are required for each day's placement. The Engineer may designate the date the cylinders are to be broken; if the pavement will not be cored at least one cylinder will be broke at 28-days; if the pavement will be cored then cylinders are broke at dates designated by the Engineer or as shown above.						