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Problem: WHAT CAN BE DONE TO INCREASE 1 - 7 DAY STRENGTH OF CONCRETE?

There are many ways to make a concrete mix gain strength faster in the early hours of the hardening process. Sometimes, two or three different adjustments will make satisfactory results. Listed below are areas to consider when modifying a mix in an attempt to get early strengths.

1. Design mix for higher strength: ie; if 4000psi is needed in 28 days for design purposes, use ingredients to get 6000psi concrete in 28 days.
2. Maintain water/cement ratio of 0.40 or less.
3. Use "admixtures" to accelerate the hardening process.
4. Choose curing methods that maintain temperature of air around the product above 75° F. Steam increases temperature of the atmosphere to 150° in the steam chamber and provides moisture to aid in uniform hardening.

WET MIX  
50°F-75°F

WATER / CEMENT  
RATIO  
LESS THAN  
0.4

ACCELERATING  
ADMIXTURES

WARM & MOIST  
CURING

5. Increase temperature of water before it goes into the mixer. CAUTION: WATER TEMPERATURES HOTTER THAN 180°F MAY CAUSE A 'FLASH SET'. A 'FLASH SET' MEANS THAT THE HARDENING PROCESS STARTS BEFORE CONCRETE IS IN THE FORM. 28 DAY COMPRESSIVE STRENGTH MAY BE LESS THAN DESIRED. A METHOD TO REDUCE POSSIBILITY OF A 'FLASH SET' IS TO MIX AGGREGATES AND HOT WATER FIRST, THEN ADD CEMENT.

When making adjustments to an already established concrete mix, it is recommended that each adjustment be made in small increments.