Concrete Coring of New Structures

Concrete coring is the process of drilling into concrete and obtaining a cylindrical specimen for further analysis. The specimen can be used to analyze the compressive strength, splitting tensile strength, depth and durability of a new or existing structure. When coring is used to understand the compressive strength of a structure, it is usually as a result of low strength results from other methods, such as concrete cylinders. The sampling and time delay due to concrete coring can have detrimental effects on a projects **budget** and **timeline**.

How to Reduce the Need for Coring

Destructive, concrete coring for new structures can be avoided by utilizing an alternative testing method to measure the in-place strength. The current method, standard-cured cylinders, provides a one-time strength result which can be inadequate often due to cylinder storage methods. Implementing concrete maturity as the testing method allows the contractor to have real-time, continuous strength results of the curing concrete.

What is Concrete Maturity?

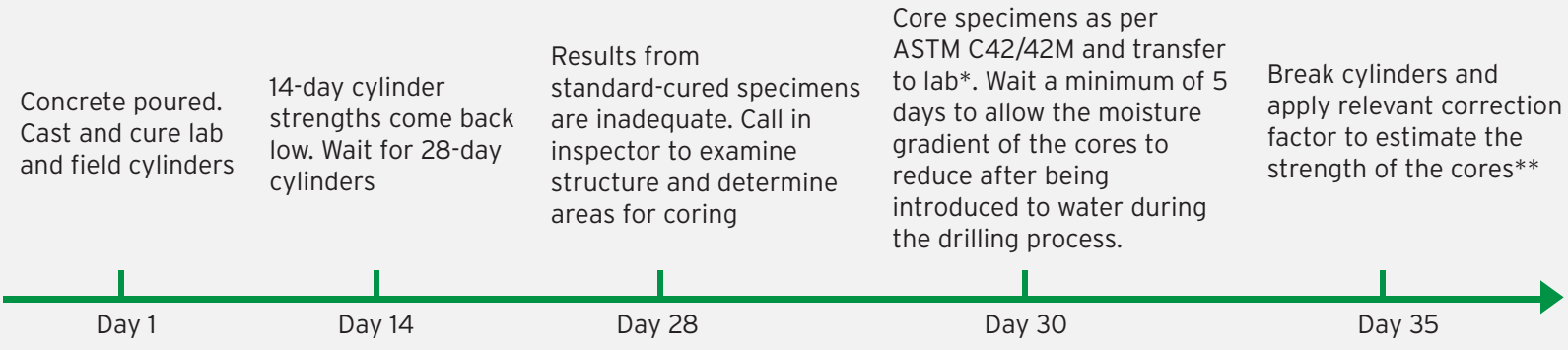
Maturity is a non-destructive testing method to estimate the in-place strength of concrete by correlating the temperature history of a specific mix to its strength development. The maturity method allows the user to install a SmartRock™ sensor in the fresh concrete and read real-time temperature and strength values right on the jobsite. Having the ability to read continuous, real-time strength results on the jobsite can help keep projects on track and avoid time delays and costs due to inadequate cylinder results and coring. Maturity is standardized under **ASTM C1074** and specified under **ACI 318-26.12, AASHTO T 325, CSA A23.1, A23.2** and most **DOTs**.

Cost*

1 Set of Cores (3)	**Minimum Costs**
Data Collection & Scheduling	$ 75.00
Imaging Costs	$ 400.00
Labor for Physically Drilling	$ 450.00
Excavation Costs	$ -
Core Delivery Technician	$ 75.00
Core Delivery Mileage	$ 35.00
Techinician Observation	$ 225.00
Labor for Crushing	$ 120.00
Report Review	$ 400.00
# Set o Cores Needed	2.00
Total	**$ 3,560.00**
Time	
Days Lost	13.00
Labor Cost Per Day	$ 5,000.00
Equipment Rental Cost Per Day	$ 3,000.00
Total	**$ 104,000.00**
Total Cost to Concrete Constractor	**$ 107,560.00**
Total Cost to Testing Lab	**ZERO**

** Costs confirmed by industry. Costs may change due to location and other factors*

Coring Schedule



** ASTM 42/42M states that concrete should not be cored before 14 days unless sufficient concrete strength can be proven beforehand to not damage samples during extraction*

*** According to ACI 318, the concrete represented by the cores is considered structurally adequate if the average strength of three cores is at least 85 % of the specified strength and no single core strength is less than 75 % of the specified strength.*

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