



Technical Advisory

Construction Tips: Certifications for Concrete Testing

Concrete testing is a fundamental element of acceptance testing for TxDOT projects.

It is imperative that inspectors and district lab technicians are properly trained and certified to perform the concrete testing required to approve concrete elements on a project. FHWA FAPG 23CFR637, along with TxDOT's QAP, requires that sampling and testing personnel be certified to perform any accepted testing. Table 1 lists the most common test methods and roles requiring certification.

The columns in Table 2 indicate which test methods are included in the pre-built Site Manager certification levels. The farthest right hand column indicates which test methods need to be added "a-la- carte" via a "TXDOT ISSUED" certification level. Project Inspectors should be certified in the test methods indicated in Table 1. These are the most common tests that will come up on a day to day basis for most projects. Certifications for Project Inspectors will be issued by the District Lab.

Chief Inspectors should have the certifications indicated in Table 1. Some of these test methods will be needed in special circumstances, such as, when coring is required or when volumetric trucks are used on a project. Additionally, this group should also receive training and certification for curing tanks and moist rooms (Tex-450-A Part III, ASTM C511). This role will include maintaining the equipment maintenance log and continuous temperature recorders for the curing tanks and moist rooms. Certifications for Chief Inspectors will be issued by the District Lab.

Finally, District Lab personnel should be certified for all test methods they issue certifications for, as well as methods typically assigned to the District Laboratory in Table 1. ACI Field Grade I and ACI Strength Testing Technician certifications, which are required for District certifiers, will cover the majority of these test methods. ACI certifications, for District certifiers, may be obtained through local ACI chapters or the TxDOT ACI Sponsoring Group. Those test methods not covered by the ACI certifications will be issued by MTD.

MTD highly recommends offering training to new inspectors before they attempt to take any QAT tests or are required to perform the test for an observer. Our experience has shown that

giving a new technician the opportunity to see the test performed and to ask questions greatly increases the likelihood that the technician will succeed in their first attempt at certification. Online interactive training courses with sample questions and video demonstrations are available through the [ASTM portal](#).

After a technician has passed the written QAT exam as well as the performance exam, the District laboratory must update the technician's certifications in SiteManager. The pre-built ACI or TxDOT concrete levels should be used whenever possible and the performance checklists and QAT report or ACI issued certificates should be attached to the certification for tracking. ACI Field Grade I certification level is valid for 5 years from the date of certification while TxDOT Field certification level is valid for 3 years from the date of certification. ACI and TxDOT Strength Tech certifications are valid for 5 years and 3 years, respectively, from the date of certification; however, these two certifications require annual participation in the TxDOT Statewide Concrete Proficiency Program. Any certification level containing "TX418" must be set to expire 15 months from the date of certification. Participation in the annual proficiency program will extend this certification 15 months at a time up to its maximum certification period. Table 3 summarizes the expiration period and proficiency program requirements.

Contact Information

If you have any questions regarding training or certification for concrete testing, please do not hesitate to reach out to one or all of the following people in the Rigid Pavements and Concrete Materials Section:

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Table 1, Inspector/Technician Roles

Project Inspectors	Chief Inspectors	District Lab Personnel	
Tex-407-A/ASTM C172	Tex-407-A/ASTM C172	Tex-407-A/ASTM C172	Tex-447-A, Pt. I/C31
Tex-415-A/ASTM C143	Tex-415-A/ASTM C143	Tex-414-A/ASTM C173	Tex-447-A, Pt. II/C31
Tex-416-A/ASTM C231	Tex-416-A/ASTM C231	Tex-415-A/ASTM C143	Tex-447-A, Pt. III/ASTM C511
Tex-418-A/ASTM C39	Tex-417-A/ASTM C138	Tex-416-A/ASTM C231	Tex-448-A/ASTM C78
Tex-422-A/ASTM C1064	Tex-418-A/ASTM C39	Tex-417-A/ASTM C138	Tex-450-A, Pt. I/ASTM C617
Tex-423-A, Pt. I	Tex-422-A/ASTM C1064	Tex-418-A/ASTM C39	Tex-450-A, Pt. II/ASTM C617
Tex-423-A, Pt. II	Tex-423-A, Pt. I	Tex-422-A/ASTM C1064	Tex-450-A, Pt. III/ASTM C1231
Tex-447-A, Pt. I/C31	Tex-423-A, Pt. II	Tex-423-A, Pt. I	Tex-472-A/ASTM C94 Annex
Tex-447-A, Pt. II/C31	Tex-424-A, Pt. I/ASTM C42	Tex-423-A, Pt. II	
Tex-450-A, Pt. III/ASTM C1231	Tex-447-A, Pt. I/C31	Tex-424-A, Pt. I/ASTM C42	
	Tex-447-A, Pt. II/C31	Tex-424-A, Pt. II/ASTM C174	
	Tex-447-A, Pt. III/ASTM C511	Tex-424-A, Pt. III/ASTM C42	
	Tex-450-A, Pt. III/ASTM C1231	Tex-430-A	
	Tex-472-A/ASTM C94 Annex	Tex-436-A	

Table 2, SiteManager Concrete Certification Levels

Covered by "ACI Field Grade I"	Covered by "ACI Strength Testing"	Covered by "TxDOT Field Grade I"	Covered by "TxDOT Strength Testing"	Added a la carte via "TxDOT Issued"
Tex-407-A ASTM C172	Tex-418-A ASTM C39	Tex-407-A ASTM C172	Tex-418-A ASTM C39	Tex-414-A ASTM C173
Tex-414-A ASTM C173	Tex-448-A ASTM C78	Tex-415-A ASTM C143	Tex-450-A, Pt. III ASTM C1231	Tex-416-A ASTM C231
Tex-415-A ASTM C143	Tex-450-A, Pt. I ASTM C617	Tex-422-A ASTM C1064		Tex-417-A ASTM C138
Tex-416-A ASTM C231	Tex-450-A, Pt. II ASTM C617	Tex-447-A, Pt. I C31		Tex-423-A, Pt. I
Tex-417-A ASTM C138	Tex-450-A, Pt. III ASTM C1231	Tex-447-A, Pt. II C31		Tex-423-A, Pt. II
Tex-422-A ASTM C1064				Tex-424-A, Pt. I ASTM C42
Tex-447-A, Pt. I C31				Tex-424-A, Pt. II ASTM C174
Tex-447-A, Pt. II C31				Tex-424-A, Pt. III ASTM C42
				Tex-430-A
				Tex-436-A
				Tex-447-A, Pt. III/ ASTM C511
				Tex-472-A ASTM C94 Annex

Table 3, SiteManager Certification Expiration Periods

Type	Level	Authority	Initial Expiration	Maximum Expiration	Proficiency Requirements
CONCRETE	FIELD GRADE 1	AMER. CONC. INST.	5 YEARS	5 YEARS	None
CONCRETE	STRENGTH TECH 1	AMER. CONC. INST.	15 MONTHS (Manual entry required)	5 YEARS	Annually
CONCRETE	FIELD GRADE 1	DISTRICT LAB	3 YEARS	3 YEARS	None
CONCRETE	STRENGTH TECH 1	DISTRICT LAB	15 MONTHS (Manual entry required)	3 YEARS	Annually
CONCRETE	TXDOT ISSUED	DISTRICT LAB	3 YEARS*	3 YEARS	None**

Initial expiration should be set to 15 months when this certification level includes TX418

**Strength required for all technicians annual when this certification level includes TX418