

CHAPTER 17
SPECIAL INSPECTIONS AND TESTS

SECTION 1703
APPROVALS

Add new language as follows:

1703.1.3 Personnel. An approved agency shall employ experienced personnel educated in conducting, supervising and evaluating tests and special inspections.

1703.1.3.1 Concrete Inspection and Testing Personnel. Concrete special inspectors, post-installed concrete anchor inspectors, and concrete field and testing personnel shall be qualified in accordance with Table 1703.1.

Add new Table 1703.1 'Minimum Special Inspector and Technician Qualifications' as follows:

<u>TABLE 1703.1</u> <u>MINIMUM CONCRETE SPECIAL INSPECTOR AND TECHNICIAN QUALIFICATIONS</u>			
<u>Category of Testing and Inspection</u>	<u>Minimum Qualifications (refer to key at end of Table)</u>		
	<u>Shop Testing or Inspection</u>	<u>Field Testing or Inspection</u>	<u>Review Testing, Certification, & Lab Reports</u>
<u>Inspection of Fabricators</u>			
<u>Pre-cast concrete</u>	<u>A, C, E</u>		
<u>Concrete Construction Special Inspection</u>			
<u>Reinforcing placement, cast-in-place bolts, post installed anchors concrete and shotcrete placement and curing operations. Inspection of formwork for shape, location and dimensions</u>		<u>A, C, H</u>	
<u>Pre-stressing steel installation</u>		<u>A, C, D, E</u>	
<u>Erection of pre-cast concrete members</u>		<u>A, C, H</u>	
<u>Review certified mill reports</u>			<u>A, C</u>
<u>Verify use of required design mix</u>		<u>A, I, J, H, C</u>	
<u>Pre-stressed (pre-tensioned) concrete force application</u>	<u>A, C, E</u>		
<u>Post-tensioned concrete force application</u>		<u>A, C, D</u>	
<u>Review of in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams and structural slabs</u>		<u>A, C, D, H</u>	
<u>Reinforcing steel weldability, reinforcing welding, weld filler material</u>		<u>C, F</u>	
<u>Testing of welding of reinforcing steel</u>		<u>G</u>	
<u>Post-Installed Concrete Anchor Inspection</u>	<u>A, M</u>	<u>A, M</u>	
<u>Concrete Sampling and Testing</u>			
<u>Concrete field sampling and testing</u>		<u>A, J</u>	
<u>Laboratory testing, any</u>		<u>A, K</u>	<u>A, B</u>
<u>Laboratory strength testing only</u>		<u>A, K, L</u>	<u>A, B</u>

KEY:

- A. Professional Engineer (PE) competent in the specific task area or graduate of accredited engineering/engineering technology program under the direct supervision of a PE.
- B. Registered Architect (RA) or graduate of accredited architecture/architecture technology program under the direction of a RA.
- C. International Code Council (ICC) Special Inspector Certification specific to the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
- D. Post-tensioning Institute (PTI) Certification, Level 2, bonded or unbonded as applicable.
- E. Pre-stressed Concrete Institute (PCI) Certified Inspector.
- F. American Welding Society (AWS) Certified Welding Inspector (CWI) or AWS Certified Associate Welding Inspector working under the direct on-site supervision of a CWI.
- G. American Society for Nondestructive Testing (ASNT) Level II certification, or a Level III certification if previously certified as a Level II in the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
- H. American Concrete Institute (ACI) Concrete Construction Special Inspector.
- I. National Institute for Certification in Engineering Technologies (NICET) Level II or higher certification specific to the particular material and testing methodology applicable to each Category of Testing and Inspection listed in the table.
- J. ACI Concrete Field-Testing Technician with Grade 1 certification.
- K. American Concrete Institute Concrete Laboratory Testing Technician - Level 1 or American Concrete Institute Concrete Laboratory Testing Technician - Level 2
- L. American Concrete Institute Concrete Strength Testing Technician
- M. American Concrete Institute Post-Installed Concrete Anchor Installation Inspector

Notes:

1. The Special Inspector shall meet one of the minimum qualifications listed for the applicable Category of Testing and Inspection.
2. Materials testing shall be done by an Approved Testing Agency meeting the requirements of IBC Section 1703 and ASTM E 329.

As submitted

Reason Statement: This proposal addresses the need to better ensure proper sampling, testing, and inspection of structural elements. Improper testing and inspection may result in deficiencies regarding the performance of structural concrete. This is especially a concern for concrete, as it is one of the few structural materials that are not in their final form and condition until after being placed on the construction site. It is important that qualified individuals conduct sampling, testing, and inspection to ensure proper performance.

Improper sampling and testing can lead to costly added testing and construction delays. In some instances, unnecessary removal and replacement of concrete. The latter may result in challenges to ensure proper structural integrity and load paths.

This proposal is modelled after modification adopted by other authorities having jurisdiction to include requirements for various building materials and systems. The Georgia Building Code now includes certified inspectors. See pages 12 through 15 of the attached file, 2014-ibcamendments.pdf.

The American Concrete Institute, as a professional society whose mission includes working to facilitate the use and adoption of current concrete technology to assure the desired performance for the benefit of the public, encourages the committee to approve of this code change as submitted.

Cost Impact: The code change proposal will not increase or decrease the cost of construction. This proposal increases the ease for the building official to determine the qualifications of individuals qualified to conduct sampling, testing and inspection of structural concrete.