

## Certification: Prestressed Concrete Special Inspector



Exam ID: 92

- 90 multiple-choice questions
- 3-1/2-hour limit
- Open book

### Scope:

The Prestressed Concrete Special Inspector is responsible for enforcing the construction details contained in the approved plans and specifications for prestressed concrete structural elements of the building. The special inspector reviews the statement of special inspections and the approved plans and specifications, and verifies that installation of prestressed elements and prestressing of concrete is installed as shown and as specified in the approved plans and specifications for concrete quality, verification of concrete strength, prestressing operations, grouting, reinforcement, placement, and formwork. The special inspector is responsible for collecting samples of materials and for performing required tests. The special inspector is responsible for writing and submitting required reports, including reports of items that do not comply with the plans, to the building official, contractor, and/or registered design professional.

<b>01</b>	<b>General Requirements</b>	<b>3%</b>
0101	<u>Duties and Responsibilities</u> Comply with special inspection requirements of the enforcing jurisdiction. Review approved plans and specifications for project details that pertain to special inspection requirements.	1%
0102	<u>Notification of Discrepancies</u> Notify the contractor of deviations from approved plans and specifications. If the deviations are uncorrected, notify the architect or engineer of record and the building official of deviations.	1%
0103	<u>Inspection Reports</u> Submit progress reports to the architect or engineer of record and the building official, describing tests which were performed and compliance of work. Submit final summary report stating whether work requiring special inspection was in conformance with the approved construction documents and applicable provisions of the building code.	1%
<b>02</b>	<b>Concrete Quality</b>	<b>5%</b>
0201	<u>Mix Verification</u> Verify that individual batch tickets indicate delivery of the approved mix as specified. Verify time limits of mixing, total water added, and proper consistency and workability for placement.	2%
0202	<u>Testing</u> Determine the required type, quantity, and frequency of tests to be performed on fresh and hardened concrete. Observe sampling of concrete, field testing of fresh concrete, and making of test specimens.	2%

0203	<u>Specimen Handling and Protection</u>	1%
	Provide or arrange for proper specimen identification, site storage and protection, and transportation to the testing laboratory.	
<b>03</b>	<b>Reinforcement</b>	<b>48%</b>
0301	<u>Quality</u>	8%
	Verify that reinforcing steel and tendons are of the type, grade, and size specified and are in conformance with acceptable quality standards. Verify that the reinforcing steel and tendon system are fabricated in conformance with acceptable quality standards. Verify that the condition of tendons at the time of concrete placement are free of oil, dirt, and excessive rust, and are properly coated and/or sheathed as specified.	
0302	<u>Tolerances</u>	3%
	Verify that reinforcing steel and tendons are located within specified tolerances, and are adequately supported and secured to prevent displacement during concrete placement.	
0303	<u>Cover</u>	6%
	Verify that minimum concrete cover is provided.	
0304	<u>Placement</u>	18%
	Verify that placement of reinforcing steel and tendons (or ducts) comply with spacing, profile, and quantity requirements, as indicated by the installation drawings and approved plans.	
0305	<u>Details</u>	7%
	Verify that hooks, bends, ties, stirrups, and supplemental reinforcement are fabricated and placed as specified.	
0306	<u>Splices</u>	2%
	Verify that required lap lengths, stagger, and offsets are provided. Verify proper installation of approved mechanical connections per the manufacturer's instructions and/or evaluation reports. Verify that welds have been inspected and approved as specified.	
0307	<u>Prestressed Rock and Soil Anchors</u>	4%
	Verify that prestressed rock and soil anchors are fabricated and installed as specified.	
<b>04</b>	<b>Prestressing and Grouting</b>	<b>35%</b>
0401	<u>Concrete Strength</u>	5%
	Verify that the required concrete strength has been attained prior to transferring prestressing	
0402	<u>Stressing</u>	18%
	Verify proper equipment calibration. Verify that proper stressing ( or tensioning) sequences are used, proper jacking forces are applied, and acceptable elongations are attained and recorded.	
0403	<u>Anchorage Protection</u>	8%
	Verify that tendons and anchorages are properly sealed or otherwise protected as specified.	

0404	<u>Post-Tensioning Ducts/Grouting</u>	4%
	Verify that ducts, including inlets and outlets are of the required size, are mortar-tight, and are located correctly. Verify that proper grout materials, strength, and grouting pressures are used as specified.	
<b>05</b>	<b>Formwork, Joints, and Embedments</b>	<b>4%</b>
0501	<u>Formwork Construction</u>	1%
	Verify that formwork will provide concrete elements of the specified size and shape.	
0502	<u>Construction Joints</u>	1%
	Verify that the location and preparation of construction joints are in accordance with the approved plans, specifications, and applicable codes and standards.	
0503	<u>Embedments</u>	2%
	Verify that the type, quantity, size, spacing, condition, and location of embedded items are as specified.	
<b>06</b>	<b>Concrete Placement, Protection, and Curing</b>	<b>5%</b>
0601	<u>Pre-placement</u>	1%
	Verify acceptable condition of the place of deposit before the concrete is placed.	
0602	<u>Placement</u>	1%
	Verify that methods of conveying and depositing concrete avoid contamination, segregation of the mix, and displacement of reinforcement, embedments, and forms.	
0603	<u>Consolidation</u>	1%
	Verify that concrete is being properly consolidated during placement.	
0604	<u>Protection</u>	1%
	Verify that concrete is protected from ambient temperature extremes during placement and curing.	
0605	<u>Curing</u>	1%
	Verify that concrete is being cured as specified by approved plans, specifications, and applicable codes.	