

SECTION 4

REINFORCING STEEL

OBJECTIVE

The purpose of reinforcing steel observation (continuous or periodic) is to give assurance that the supplier is exercising satisfactory control over production, fabrication, and placing of reinforcing steel so that it meets the project specifications and applicable codes and industry standards.

The Statement of Special Inspections, prepared by the responsible design professional, will define the special inspection task(s) required. Qualified special inspectors who diligently perform the duties listed below while under the direct supervision of the materials engineering laboratory can best achieve this objective.

OBSERVATION DUTIES

A. Documents

1. Review the approved plans, specifications, and approved shop drawings.
2. Review applicable sections of referenced codes, such as: the California Building Code (ICC); the Building Code Requirements for Reinforced Concrete (ACI-318) by the American Concrete Institute (ACI); the Manual of Standard Practice of the Concrete Reinforcing Steel Institute (CRSI); the Reinforcing Steel Welding Code (AWS D1.4) by the American Welding Society (AWS).

B. Mill Test Reports

1. Verify reinforcing steel mill test reports (when available) for mill markings and test data, checking against project requirements.
2. Sample material for tests directly from unopened bundles when required by specifications.

C. Fabrication

1. Check each shipment of reinforcing steel for the following:
 - a) Bar sizes and grades are as specified.
 - b) Mill marking is in conformance with mill test reports.
 - c) Corrosion, contaminants, surface cracks, and bars damaged in shipment.
 - d) Shop bends for specified radius and cracks.

D. Placement

1. During placement of reinforcing, check for proper bar locations, alignment, laps, ties, form and ground clearance, supports, field bend radii and cracks, gouges or tack welds causing stress concentrations, removal of contaminants, and hardened concrete.
2. If welding of reinforcing is required, it should be observed as defined in CBC Table 1704.3(5b), with particular emphasis on joint configuration, suitability of low hydrogen electrodes, preheat and interpass temperatures, and interpass slag removal. Check for welding and procedures for conformance to AWS D1.4.
3. Prior to concrete placement, check for complete installation and notify contractor of any variations from plans and specifications. If variations are not corrected prior to start of concreting, immediately notify the design team representative and the building office for appropriate action.
4. During concrete placement, check that reinforcing stays in place and is adequately supported. Check for removal of dirt, concrete spatter, grease, or other contaminants.
5. Check embedded items, including anchorages, inserts, and bolts installed in concrete for compliance to project documents. Verify they are solidly cast in place during placement of concrete.

E. Reports

1. Submit written progress reports describing the tests and observations made and showing the action taken to correct nonconforming work. Itemize any changes authorized by architect/engineer. Report all uncorrected deviations from plans or specifications.