

SECTION 12

HIGH STRENGTH BOLTING

OBJECTIVE

The purpose of high strength bolting observation (continuous or periodic) is to provide assurance that the proper bolt type(s) and installation procedures are used to meet 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 should diligently perform those duties while under the direct supervision of the materials engineering laboratory.

OBSERVATION DUTIES

A. Documents

1. Review the approved plans, specifications, and approved shop drawings.
2. Review applicable sections of referenced codes, particularly American Institute of Steel Construction (AISC) 360.

B. Mill Test Reports

1. Review mill test reports and check identification markings with material as received.

C. Sampling and Testing

1. Sample high strength bolts, washers, and nuts for testing from the lots in the shop or on the jobsite, if required.
2. Record sample information from each lot and check that sample identification is maintained as samples are delivered to laboratory and tested.

D. High Strength Bolting Observation

1. Review type of joint specified (i.e., slip-critical, bearing-type).
2. Check bolts, nuts, and washers for compliance to project specifications.
3. Review the procedure for installation of bolts. The amount and type of inspection during installation will depend on the method used (i.e., turn-of-nut calibrated wrench, twist-off bolts, direct tension-indicator washers).
4. Check joint surfaces to verify that they are free of burrs, dirt, etc.
5. Observe preinstallation testing and calibration procedures when required.
6. Verify all plies of connected materials have been drawn together and properly snugged.
7. Monitor the installation of bolts to verify the selected installation procedure is properly used to tighten bolts.
8. For joints requiring only snug-tight condition, verify connected materials have been drawn together and properly snugged.

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.