

DESCRIPTION OF INSPECTION

The inspection was designed to include an examination of the apparatus and an observation of the procedures prescribed for use in the tests for reinforcing steel. The ASTM Standards on which the work was based are as follows: A370, A615/A615M, A706/706M, A996/A996M, E4, and E8/E8M.

Apparatus

Measuring Equipment

A check was made to determine if appropriate equipment was on hand for measuring the diameter, gage length, elongation, and deformations of test specimens.

Testing Machine (E4)

In instances where the testing machine was used for testing both concrete cylinders and reinforcing steel, checks were made to ensure that it was suitable for use in both tension and compression, and that the tension grips with which it was equipped were properly designed and in good condition.

If the machine had not been otherwise inspected, several of the more important mechanical and design features were noted, checks were made to ensure that the tension grips with which it was equipped were properly designed and in good physical condition, and the accuracy of load indication was verified. The verification tests were made using compression force measuring instruments (load cells) calibrated at the National Institute of Standards and Technology. The selection of test points was made based on loads consistent with the range of use of the material being inspected. In all tests, test loads were approached by increasing the load from a lower load as specified in Standard Practice E4.

Bend Test Jig for Reinforcing Bars

The bend test jig for reinforcing bars was inspected for proper design. An inquiry was made as to the reinforcing bars tested to determine which bending pins were required for those tested. A maximum of 14 pins would be necessary for testing bars for all sizes listed of Grades 40, 60 and 75 carbon-steel, Grades 50 and 60 "rail symbol" steel, Grades 50 and 60 rail steel, Grades 40 and 60 axle steel, and Grade 60 low alloy steel. Only those pins consistent with the types and sizes of reinforcing bars tested were checked. The bending pins were checked for the design and size requirements of Standard Specifications A615, A706, and A996.

Weight of Reinforcing Bars

When part of the laboratory's routine testing, a check was made to determine if adequate equipment was available for determining the unit weight of reinforcing bars.

Miscellaneous

A check was made to determine if the laboratory had been supplied with copies of the latest editions of the various parts of the ASTM Book of Standards that pertain to the testing of steel reinforcing bars.

Procedures

Where possible, the measurement of deformations, the tensile testing and the bending of a test specimen were observed.