each blow or lot of ten tons of Bessemer steel rolled. In case bars differing ⅜ inch and more in diameter or thickness are rolled from one melt or blow, a test shall be made from the thickest and thinnest material rolled. Should either of these test specimens develop flaws, or should the tensile test specimen break outside of the middle third of its gauged length, it may be discarded and another test specimen substituted therefor. In case a tensile test specimen does not meet the specifications, an additional test may be made.

(d) The bending test may be made by pressure or by light blows.

7. For bars less than 7-16 inch and more than ¾ inch nominal diameter or thickness, the following modifications shall be made in the requirements for elongation:

(e) For each increase of ⅛ inch in diameter or thickness above ¾ inch, a deduction of 1 shall be made from the specified percentage of elongation.

(f) For each decrease of 1-16 inch in diameter or thickness below 7-16 inch, a deduction of 1 shall be made from the specified percentage of elongation.

(g) The above modifications in elongation shall not apply to cold-twisted bars.

8. Cold-twisted bars shall be twisted cold with one complete twist in a length equal to not more than 12 times the thickness of the bar.

9. Material must be free from injurious seams, flaws or cracks, and have a workmanlike finish.

10. Bars for reinforcement are subject to rejection if the actual weight of any lot varies more than 5 per cent. over or under the theoretical weight of that lot.

Properties Considered.	Structural Steel Grade. Plain Bars.	Deformed Bars.	Hard Grade. Plain Bars.	Deformed Bars.	Cold-Twisted Bars.
Phosphorus, maximum—					
Bessemer	.10	.10	.10	.10	.10
Open hearth	.06	.06	.06	.06	.06
Ultimate tensile strength, pounds per sq. in.	55/70,000	55/70,000	80,000 min.	80,000 min.	Recorded only
Yield point, minimum, pounds per sq. in.	33,000	33,000	50,000	50,000	55,000
Elongation, per cent. in 8", minimum	1,400,000 T.S.	1,250,000 T.S.	1,200,000 T.S.	1,000,000 T.S.	5%
Cold bend without fracture—					
Bars under ¾" in diameter or thickness	180°d. = 1t.	180°d. = 1t.	180°d. = 3t.	180°d. = 4t.	180°d. = 2t.
Bars ¾" in diameter or thickness and over	180°d. = 1t.	180°d. = 2t.	90°d. = 3t.	90°d. = 4t.	180°d. = 3t.

The Hard Grade Will Be Used Only When Specified.

A CONCRETE CONSTRUCTION PLANT ON A SHORT-TIME JOB.

When the contract for the concrete foundations of the new Boston & Maine R. R. locomotive shops was placed with the Aberthaw Construction Company of Boston, Mass., last November, the stipulation was made that the work should be completed in the very shortest possible time. The contractors therefore decided to erect a complete concrete mixing and handling plant although the entire job contained less than 2,000 yards of concrete.

The resulting costs as well as the speed obtained fully justified the erection of the construction plant although it was in operation only about five weeks. These costs per yard were:—

Labor, mixing and placing	79c.
Rental of plant	39c.
Handling and erecting of plant	18c.
Total	$1.36

It is probably fair to say that it would have been difficult to mix this material for less.

The arrangement of the construction plant was as follows: A single spur track from the railroad was run to the site approaching it at right angles to the buildings and about the middle of same. Some two hundred feet from the building site and on the right hand side of the spur track approaching the work, the mixing platform, mixer, and elevator were placed. The railroad siding was paralleled by an industrial track on the same side as the mixer. The mixer platform and the industrial track were built about on the level with the body of a freight car. Turnouts on the industrial track were provided on either side of the mixed platform for passage of cars and storage for idle ones. The aggregate could be unloaded to the mixer platform direct from the freight cars or into industrial cars which could be dumped direct into the mixer. The cement shed was located about 100 feet from the mixer alongside the industrial track and railroad siding. Cement was unloaded from the freight cars into the cement shed and transferred to the mining platform by wheel barrows or industrial cars.

As the tops of the foundations were several feet above ground level, the track for delivering the concrete was raised so that it could be dumped from the industrial cars direct into the forms. The raising of the industrial track brought the dump cars too high for the mixer to discharge into them so a short elevator tower with an automatic trip bucket was erected. The mixer discharged into this bucket which was hoisted and dumped into the cars. A portable locomotive engine supplied power for the mixer and for a hoist to operate the elevator.

The reinforcing steel and lumber for forms were unloaded on the opposite side of the railroad track from the mixer and nearer the site of the building. The steel was bent and the lumber cut for the forms and carried into place by hand.