Finished bars must be thoroughly welded during the rolling, and free from injurious seams, blisters, buckles, cinder spots, and imperfect edges.

For all tension members the muck bars shall be rolled into flats, and again cut, piled, and rolled into finished sizes.

They shall stand the following tests. Full-sized pieces of flat, round, or square iron, not over four and a half (4 3/4) square inches in sectional area, are to have an ultimate strength of fifty thousand (50,000) pounds per square inch, and are to stretch twelve and a half (12 1/4) per cent of their whole length.

Bars of a larger sectional area than four and a half (4 3/4) square inches are to be allowed a reduction of one thousand (1,000) pounds per square inch for each additional square inch of section, down to a minimum of forty-six thousand (46,000) pounds per square inch.

Specimens of a uniform section of at least one (1) square inch, taken from bars of four and a half (4 3/4) square inches section, and under, are to have an ultimate tensile strength of fifty-two thousand (52,000) pounds per square inch, and are to stretch eighteen (18) per cent in eight (8) inches.

Similar specimens from bars of a larger section than four and a half (4 3/4) square inches are to be allowed a reduction of five hundred (500) pounds per square inch for each additional square inch of section, down to a minimum of fifty thousand (50,000) pounds per square inch.

Similar sections from angle and other shaped iron are to have an ultimate strength of fifty thousand (50,000) pounds per square inch, and are to stretch fifteen (15) per cent in eight (8) inches.

All iron for webs of plate girders is to have an ultimate strength of not less than forty-six thousand (46,000) pounds per square inch of area of test-piece, and is to have a minimum elongation of ten (10) per cent in eight (8) inches.

Rivets are to be of the best quality of double refined iron.

The cast-iron must be of the best quality of soft gray iron.

Test of Structure. — On the completion of the entire structure, any bridge, after being in constant use for one day, may be tested by a load equal to that for which it was designed.