

## VALUE OF STANDARD SPECIFICATION

In closing it might be of interest to say a word briefly on the question of specification for steel tubes. Several years ago there were in use in America twenty or thirty specifications for locomotive boiler tubes, all differing slightly but sufficiently to require special attention to each individual order going through the mill. This of course increased the cost to the manufacturer and consumer, with no corresponding benefit in the quality of product.

The author endeavored to arouse interest in this matter in a paper before the American Society for Testing Materials, June 27th, 1911, after which a committee was appointed, consisting the majority of railroad engineers through whose work the first Standard American Tube Specification was adopted in 1912. In the following year this committee, in conjunction with another of the American Master Mechanics' Association, who had been laboring along the same line adopted a combined specification for tubes in June, 1913, which is reprinted on another page for reference. (See page — )

Whatever your personal views may be on the question of specifications this one should receive your careful study and consideration before deciding to write any other. It was only adopted after years of discussion and investigation on every item by engineers representing large manufacturers and users of tubes, and their recommendations were accepted without change by two of the largest engineering societies of the country. The National Tube Company also have a number of specifications for special products, such as steel shipping containers for compressed gases and liquids, trolley poles, signal pipe, etc. Whenever standard specifications are agreed upon, it has been our practice to accept these as our standard of manufacture.

The motion pictures showing welded pipe manufacture, and lantern slides showing the principles of the manufacture of products from seamless tubes, a few of which are reproduced, give a fairly complete view of the industry as a whole.

*Standard specifications for Lap-welded and Seamless Steel Boiler Tubes, Safe Ends and Arch Tubes (including superheater tubes) as revised jointly, 1913, by the American Railway Master Mechanics Association and the American Society for Testing Materials.*

## I. MANUFACTURE

1. *Process.* The steel shall be made by the open-hearth process.