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SPECIFICATION FOR STEEL WEAR PLATES

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About This Standard

This specification is based on the TRS 0146.

Version History

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1 Scope

This Specification provides the requirements for flat or formed abrasion resistant steel plates for use on locomotives and rolling stock or similar applications.

2 Manufacture

The plates shall be made in accordance with the dimensions and tolerances shown on the relevant drawings, and may require cutting, forming, machining or welding.

The plates shall be available in thicknesses ranging from 6mm to 16mm.

3 Material

3.1 Type 1 Through-Hardened Steels

These steels shall be of a low alloy type with an equivalent carbon content (C.E.) of not more than 0.52%. They shall be quenched and tempered to a uniform full depth hardness of between 400 and 440 BHN. (e.g.: Bisalloy 360, WR400 or equivalent.)

3.2 Type 2 Through-Hardened Steels

These shall be similar to Type 1, except that the C.E. shall not be more than 0.57% and the hardness shall be between 460 and 520 BHN. (e.g.: Bisalloy 500 Resilflex)

3.3 Type 3 Manganese Steels

These steels shall have a manganese content of between 11% and 14%.

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5 Application

5.1 Type 1

These steels should be used where high abrasion resistance is required and the mating parts are subject to moderate impact loading, such as brake gear "knocker plates" and bogie sidebearer wear plates.

5.2 Type 2

These steels should be used where very high abrasion resistance is required and the mating parts are subject to light impact loading, such as bogie friction snubber wear plates.

5.3 Type 3

These steels should be used where high abrasion resistance is required and the mating parts are subjected to very heavy impact loading, such as bogie centre bearing liners and horncheek liners.

6 Cutting

As per Manufactures specification.

7 Forming

Cold forming may be done provided the minimum bend radius is not less than 8t (eight times the plate thickness) for Type 1, 10t for Type 2 and 3t for Type 3.

Types 1 and 2 may be pre-heated to achieve smaller bend radii, but the temperature must be below the tempering temperature of the steel used.

For hot forming, the bend radius may be as small as practicable, but Types 1 and 2 steels must be fully heat treated after forming.

8 Machining

Normally, the only practicable machining process is grinding. Drilling and counterboring can only be done using a friction drilling process, using specialty drills.