

6th edition, December 2003

Translation

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Technical specification for the supply of spring steel flat bars for parallel leaf or volute springs

*Spécification technique pour la fourniture de barres d'acier à ressorts méplates pour ressorts à lames
parallèles ou en volutes*

Technische Lieferbedingungen für Flachfederstahl für Blatt-Oder Kegelfedern

Leaflet to be classified in Volumes :

V - Rolling Stock

VI - Traction

VIII - Technical specifications

Application :

With effect from 1 July 1977

All Railways in the Union; unlimited exemption is made, however, for the ÖBB.

Record of updates

5th edition, July 1977

6th edition, December 2003

Retyped in FrameMaker and update of references to ISO Standards following changes made between 1977 and 2003.

- ISO 82:1974: Steel - Tensile testing (standard withdrawn on 1.7.1984) is mentioned in the 5th edition of UIC Leaflet 820 dated 1.7.1977. SC03 of the CTR suggests ISO Standard 6892:1998 as replacement document.

- ISO R/404 is mentioned in the 5th edition of UIC Leaflet 820 dated 1.7.1977. SC03 of the CTR suggests ISO Standard 10474: 1991: as replacement document.

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Summary

The present specification defines the materials, as well as the physical, geometrical and mechanical characteristics of flat steel bars used in the manufacture of parallel-leaf or volute springs.

It describes the inspections to be carried out as part of this process.

1 - Scope

1.1 - Type of stock

This specification governs the supply of spring steel flat bars used in the manufacture of parallel leaf or volute springs for tractive and hauled stock.

All details necessary for carrying out the contract, especially those relating to application of points [2.2.1.2 - page 3](#), [2.2.3.2](#), [2.2.4 - page 5](#), [4.1 - page 7](#), [4.2.4.2 - page 8](#) of the present specification, must be indicated in the order itself or in its appended documents.

1.2 - List of reference documents

The following documents are quoted in the present Technical Specification:

- ISO Standards ([see Bibliography - page 13](#)):
 - *ISO 83*
 - *ISO 377*
 - *ISO 683-14*
 - *ISO 6892*
 - *ISO 10474*.

2 - Characteristics

2.1 - Material

The characteristics of steel used in the manufacture of bars must conform with those laid down for steels Nos. 1, 4, 6, 7, 8, 13 and 14 of ISO International Standard 683-14, supplemented with the special particulars contained in the present Specification.

2.2 - Characteristics of the bars

2.2.1 - Physical characteristics

2.2.1.1 - Appearance

Spring steel flat bars must have a smooth surface over their complete length, with no cracks, flaws, burrs, lack of material, folds or defects whatsoever likely to affect their use adversely.

2.2.1.2 - Soundness

Bars must be sound over their complete length.

When, in accordance with the conditions and procedure laid down in point [4.2.5.6 - page 10](#), an ultrasonic inspection is stipulated in orders for bars for the manufacture of springs falling in category 1 of *UIC Leaflet 821* ([see Bibliography - page 13](#)), these bars must not have:

- more than 2 irregularities per meter along the length of the bar, and then only if:
 - these irregularities are more than 150 mm apart,
 - there is no fault echo higher than half the height of the screen,
 - there is no attenuation of the base echoes of over 90%,
 - there is no indication of irregularity lasting for a probe movement of over 10 mm.

The following shall be considered to be irregularities:

- either a fault echo higher than 1/3 of the height of the screen,
- or a 50% (or more) attenuation of successive base echoes.

Whenever a bar reveals an irregularity as defined above, on being tested along two generatrices, it shall undergo additional exploratory tests along two generatrices symmetrical to the previous ones in relation to the longitudinal axis.