

**Aluminium and aluminium alloys -
Products for structural railway
applications - Technical conditions for
inspection and delivery - Part 4:
Forgings**

Aluminium and aluminium alloys - Products for
structural railway applications - Technical conditions
for inspection and delivery - Part 4: Forgings

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

<p>Käesolev Eesti standard EVS-EN 13981-4:2006 sisaldab Euroopa standardi EN 13981-4:2006 ingliskeelset teksti.</p> <p>Käesolev dokument on jõustatud 21.12.2006 ja selle kohta on avaldatud teade Eesti standardiorganisatsiooni ametlikus väljaandes.</p> <p>Standard on kättesaadav Eesti standardiorganisatsioonist.</p>	<p>This Estonian standard EVS-EN 13981-4:2006 consists of the English text of the European standard EN 13981-4:2006.</p> <p>This document is endorsed on 21.12.2006 with the notification being published in the official publication of the Estonian national standardisation organisation.</p> <p>The standard is available from Estonian standardisation organisation.</p>
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<p>Käsitlusala:</p> <p>This European Standard specifies requirements for forgings (hand forgings, die forgings) which contribute to the structural properties of the railcar bodyshell and other major structural components. The requirements on welded joints specified in this European Standard are not applicable to welded assemblies and sub-assemblies as they are specified for material qualification purposes only.</p>	<p>Scope:</p> <p>This European Standard specifies requirements for forgings (hand forgings, die forgings) which contribute to the structural properties of the railcar bodyshell and other major structural components. The requirements on welded joints specified in this European Standard are not applicable to welded assemblies and sub-assemblies as they are specified for material qualification purposes only.</p>
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English Version

Aluminium and aluminium alloys - Products for structural railway applications - Technical conditions for inspection and delivery - Part 4: Forgings

Aluminium et alliages d'aluminium - Produits pour applications ferroviaires structurales - Conditions techniques de contrôle et de livraison - Partie 4: Pièces forgées

Aluminium und Aluminiumlegierungen - Erzeugnisse für tragende Anwendungen im Schienenfahrzeugbau - Technische Lieferbedingungen - Teil 4: Schmiedestücke

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Foreword

This document (EN 13981-4:2006) has been prepared by Technical Committee CEN/TC 132 "Aluminium and aluminium alloys", the secretariat of which is held by AFNOR.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2007, and conflicting national standards shall be withdrawn at the latest by May 2007.

Within its program of work, Technical Committee CEN/TC 132 entrusted CEN/TC 132/WG 21 "Aluminium for railway applications" to prepare the following standard:

EN 13981-4, *Aluminium and aluminium alloys — Products for structural railway applications — Technical conditions for inspection and delivery — Part 4: Forgings*.

EN 13981 comprises the following parts under the general title "*Aluminium and aluminium alloys — Products for structural railway applications — Technical conditions for inspection and delivery*":

- *Part 1: Extruded products*
- *Part 2: Plates and sheets*
- *Part 3: Castings*
- *Part 4: Forgings*

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1 Scope

This European Standard specifies requirements for forgings (hand forgings, die forgings) which contribute to the structural properties of the railcar bodyshell and other major structural components.

The requirements on welded joints specified in this European Standard are not applicable to welded assemblies and sub-assemblies as they are specified for material qualification purposes only.

It specifies particular requirements regarding qualification, quality control, material properties and dimensional tolerances. Furthermore, guide-lines for application and use are given.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 515, *Aluminium and aluminium alloys — Wrought products — Temper designations*

EN 571-1, *Non destructive testing — Penetrant testing — Part 1: General principles*

EN 573-3, *Aluminium and aluminium alloys — Chemical composition and form of wrought products — Part 3: Chemical composition*

EN 586-1, *Aluminium and aluminium alloys — Forgings — Part 1: Technical conditions for inspection and delivery*

EN 586-2, *Aluminium and aluminium alloys — Forgings — Part 2: Mechanical properties and additional property requirements*

EN 586-3, *Aluminium and aluminium alloys — Forgings — Part 3: Tolerances on dimensions and form*

EN 895, *Destructive tests on welds in metallic materials — Transverse tensile test*

EN 1011-4:2000, *Welding — Recommendations for welding of metallic materials — Part 4: Arc welding of aluminium and aluminium alloys*

EN 10204:2004, *Metallic products — Types of inspection documents*

EN 12258-1:1998, *Aluminium and aluminium alloys — Terms and definitions — Part 1: General terms*

EN ISO 10042, *Arc-welded joints in aluminium and its alloys — Quality levels for imperfections (ISO 10042:2005)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in EN 12258-1:1998 and the following apply.

3.1

forging lot

quantity of forgings of the same grade or alloy, form, temper, shape, thickness or cross-section, subsequently forged without die change