

# International Standard



# 5191

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION • МЕЖДУНАРОДНАЯ ОРГАНИЗАЦИЯ ПО СТАНДАРТИЗАЦИИ • ORGANISATION INTERNATIONALE DE NORMALISATION

## **Wrought aluminium and aluminium alloy products — General conditions for inspection and delivery**

*Produits en aluminium et alliages d'aluminium corroyés — Conditions générales de contrôle et de livraison*

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards institutes (ISO member bodies). The work of developing International Standards is carried out through ISO technical committees. Every member body interested in a subject for which a technical committee has been set up has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work.

Draft International Standards adopted by the technical committees are circulated to the member bodies for approval before their acceptance as International Standards by the ISO Council.

International Standard ISO 5191 was developed by Technical Committee ISO/TC 79, *Light metals and their alloys*, and was circulated to the member bodies in August 1978.

It has been approved by the member bodies of the following countries:

Australia	Hungary	South Africa, Rep. of
Austria	India	Spain
Brazil	Ireland	Sweden
Bulgaria	Italy	Switzerland
Canada	Japan	United Kingdom
Chile	Mexico	USA
Czechoslovakia	Netherlands	USSR
Egypt, Arab Rep. of	Norway	Yugoslavia
France	Romania	

No member body expressed disapproval of the document.

# Wrought aluminium and aluminium alloy products — General conditions for inspection and delivery

## 1 General

### 1.1 Scope

This International Standard defines the general conditions of delivery for wrought aluminium and aluminium alloy products, and the inspection conditions for such products.

### 1.2 Field of application

This International Standard is applicable to wrought products in the as-delivered condition, i.e. before acceptance by the purchaser.

### 1.3 References

ISO/R 190, *Tensile testing of light metals and their alloys.*

ISO/R 952, *Tensile testing of light metal and light metal alloy tubes.*

ISO/R 953, *Drift expanding test on light metal and light metal alloy tubes.*

ISO/R 955, *Flattening test on aluminium and aluminium alloy tubes.*

ISO/R 956, *Tensile test for light metal and light metal alloy wires.*

ISO/R 957, *Simple torsion test for aluminium and aluminium alloy wire.*

ISO/R 958, *Wrapping test for aluminium and aluminium alloy wire.*

ISO/R 2142, *Wrought aluminium and aluminium alloys — Selection of specimens and test pieces.*

## 2 Orders or tenders

The order or tender shall define the product required and shall contain the following details :

- a) the type and form of product :
  - the designation of the aluminium or aluminium alloy,
  - the form of the material (rod, bar, sheet, etc.);

b) the metallurgical temper of the material for delivery (degree of hardness or heat treatment condition) and, if different, the metallurgical temper for use;

c) the standard or specification number, or, where none exists the properties agreed between the supplier and the purchaser;

d) the dimensions and shape of the product (thickness, width, length, diameter) and/or reference to a drawing defining the product;

e) tolerances or the dimensions and shape, with reference to the appropriate standard, if any;

f) quantity (mass or number);

g) any requirements for certificates of conformity, test and/or analysis;

h) any special requirements agreed between the supplier and the purchaser.

## 3 Requirements

### 3.1 Production and manufacturing processes

Unless otherwise specified on the order, the production and manufacturing processes shall be left to the discretion of the producer. No obligation shall be placed on the producer to use the same process for subsequent and similar orders, unless such is explicitly stated on the order.

### 3.2 Quality assurance

The supplier shall be responsible for the performance of all inspection and tests required by the standard or specification prior to shipment of the product. If the purchaser wishes to inspect the product at the supplier's works, he should notify the supplier at the time of placing the order.

### 3.3 Product characteristics

#### 3.3.1 Properties

The chemical composition, mechanical, physical or other properties or characteristics shall be in conformity with those specified in the standards cited on the order, or those agreed between the supplier and the purchaser and stated on the order.

### 3.3.2 Surface finish

The products shall be free from defects detrimental to its use. No operation designed to mask a fault shall be permitted. However, the elimination of a superficial fault shall be allowable provided that the dimensional tolerances continue to be observed.

### 3.3.3 Dimensional tolerances

The tolerances on the dimensions of the product shall be as specified in the standards cited on the order, or those agreed between the supplier and the purchaser and stated on the order. Unless otherwise agreed, the purchaser may reject only those product items having dimensions outside the specified tolerances.

## 4 Inspection and tests

### 4.1 Definitions

The definitions of inspection lot, sample, specimen, test piece and test are given in ISO/R 2142.

### 4.2 Methods of test

#### 4.2.1 Sampling and marking of specimens and test pieces

Specimens and test pieces shall be taken according to the procedures laid down in ISO/R 2142. Samples for checking any special product characteristic shall be taken as required by the relevant material standard or specification or as agreed between the supplier and the purchaser and stated on the order.

#### 4.2.2 Chemical composition

Methods of analysis shall be left to the discretion of the supplier.

If a dispute over composition arises, referee analysis shall be carried out in accordance with the methods specified in the appropriate International Standards and the results obtained by these methods shall be accepted.

#### 4.2.3 Mechanical and physical tests

Mechanical tests shall be carried out as specified in the appropriate International Standards or as agreed between the purchaser and the supplier.

#### 4.2.4 Surface finish

Unless otherwise specified, the surface appearance of products ready for delivery shall be examined without the assistance of any magnifying apparatus.

### 4.2.5 Dimensions

Dimensions shall be measured by means of measuring instruments which ensure that the dimensions and dimensional tolerances are measured with the required accuracy.

All dimensions shall be checked at the ambient temperature of workshops or laboratories and, in the event of any dispute, at a temperature between 15 and 25 °C.

## 5 Retest

### 5.1 Mechanical properties

Should any one of the test pieces first selected fail to pass the mechanical tests, two further samples shall be taken from the same inspection lot, one of them being taken from the same piece of material (i.e. sheet, extrusion, etc.) from which the original test sample was taken, unless that piece of material has been withdrawn by the supplier.

Should the test pieces from both these additional samples pass, the inspection lot represented by the test samples shall be deemed to comply with the requirements of this International Standard.

### 5.2 Other properties

Relevant standards or the conditions of the order should be consulted.

## 6 Conformity with standards

### 6.1 Certificate of conformity

If required on the order, the supplier shall provide a certificate indicating that the material complies with the requirements of the relevant standards and the order.

### 6.2 Certificates of test and/or analysis

If required on the order, the supplier shall issue a certificate detailing the results of the tests and/or analysis stipulated in the specification or standard.

## 7 Marking

Marking of products is only undertaken if specified in the product standard or specification or agreed between the supplier and the purchaser and stated on the order.

## 8 Packing

Unless otherwise specified by standards relating to special products or specified in the order, the method of packing shall be determined by the supplier, who shall take all suitable precautions to ensure that under usual conditions of transportation the products will be delivered in a condition suitable for use.

## 9 Arbitration tests

Unless otherwise agreed, in cases of dispute concerning conformity with the requirements of the material standard or specification cited on the order, testing should be carried out

by an arbitrator chosen by mutual agreement between supplier and purchaser. The arbitrator's decision shall be final. Disposal of the material in question shall be agreed upon between the purchaser and the supplier.

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