INTERNATIONAL STANDARD ISO 3335

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Extruded solid profiles in aluminium-zinc-magnesium alloy Al Zn4,5 Mg1 (7020) — Chemical composition and mechanical properties

Profilés pleins en alliage aluminium-zinc-magnésium Al Zn4,5 Mg1 (7020) — Composition chimique et caractéristiques mécaniques

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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 3335 was developed by Technical Committee ISO/TC 79, *Light metals and their alloys*, and was circulated to the member bodies in February 1977.

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

Belgium	Italy	South Africa, Rep. of
Chile	Japan	Sweden
Czechoslovakia	Mexico	Switzerland
Egypt, Arab Rep. of	Netherlands	Turkey
France	Norway	United Kingdom
Germany	Poland	U.S.A.
India	Portugal	Yugoslavia
Ireland	Romania	

No member body expressed disapproval of the document.

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Extruded solid profiles in aluminium-zinc-magnesium alloy Al Zn4,5 Mg1 (7020) — Chemical composition and mechanical properties

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the chemical composition and the minimum mechanical properties of extruded solid profiles made in aluminium-zinc-magnesium alloy corresponding to the designation Al Zn4,5 Mg1, in agreement with ISO/R 2092. (The designation 7020 is also commonly used for this alloy.)

2 REFERENCES

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

ISO/R 2092, *Light metals and their alloys — Code of designation.*

ISO/R 2107, *Light metals and their alloys — Temper designations.*

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

ISO 5191, *Light metals and their alloys — General inspection and delivery requirements.* [1]

3 REQUIRED CHARACTERISTICS

3.1 Chemical composition

The chemical composition shall be as given in table 1.

3.2 Mechanical properties

The minimum values of the mechanical properties, for products in the temper conditions as defined in ISO/R 2107, are given in table 2.

TABLE 1 — **Chemical composition, %**

	Si	Fe	Cu	Mn	Mg	Cr	Zn	Zr	Ti + Zr	Other elements		Al
										individual	total	
min.	—	—	—	0,05	1,0	0,10	4,0	0,08	0,08	—	—	balance
max.	0,35	0,40	0,20	0,50	1,4	0,35	5,0	0,20	0,25	0,05	0,15	

TABLE 2 — **Longitudinal mechanical properties**

Shape	Temper	Thickness mm	R_m N/mm²	$R_{p0,2}$ N/mm²	A % min. on $5,65\sqrt{S_o}$	A % min. on 50 mm (2 in)
Solid profiles	TF, TE	3,0 to 30	350	290	10	8

R_m : tensile strength

$R_{p0,2}$: 0,2 % proof stress

A : elongation

S_o : original cross-sectional area

TF : solution heat treated and precipitation treated

TE : cooled from an elevated temperature shaping process and precipitation treated.

1) In preparation.

4 SAMPLING

The selection of specimens and test pieces used for the determination of the chemical composition and mechanical characteristics shall be carried out in agreement with ISO/R 2142.

5 METHODS OF TEST

5.1 Chemical composition

The methods used for the determination of the elements listed in table 1 shall be in agreement with the relevant ISO standards.

If there are no existing ISO standards on the question, the methods to be used shall be the subject of an agreement between the interested parties.

5.2 Tensile test

The tensile test shall be carried out by methods which are in conformity with ISO/R 190.

6 DIMENSIONAL TOLERANCES

In the absence of ISO standards, the dimensional tolerances for Al Zn4,5 Mg1 solid profiles shall be the subject of an agreement between the interested parties.

7 GENERAL CONDITIONS FOR INSPECTION AND DELIVERY

The materials shall comply with general inspection and delivery requirements as specified in ISO 5191.