
INTERNATIONAL STANDARD



3115

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**Magnesium-zinc-zirconium alloy sand castings —
Mechanical properties**

Alliages magnésium-zinc-zirconium — Pièces moulées en sable — Caractéristiques mécaniques

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FOREWORD

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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 3115 was drawn up by Technical Committee ISO/TC 79, *Light metals and their alloys*, and circulated to the Member Bodies in March 1973.

It has been approved by the Member Bodies of the following countries :

Belgium	Israel	South Africa, Rep. of
Bulgaria	Italy	Spain
Canada	Japan	Switzerland
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Egypt, Arab Rep. of	Norway	Turkey
France	Poland	United Kingdom
India	Romania	U.S.S.R.

The Member Bodies of the following countries expressed disapproval of the document on technical grounds :

Germany
Sweden
U.S.A.

Magnesium-zinc-zirconium alloy sand castings — Mechanical properties

1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the minimum mechanical properties of castings in a series of magnesium-zinc-zirconium alloys; these values may be checked on test pieces made in accordance with ISO 2377.

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 2119, *Magnesium-zinc-zirconium alloy castings — Chemical composition.*

ISO 2377, *Magnesium alloy sand castings — Reference test bar.*

3 MECHANICAL PROPERTIES

The minimum values of the mechanical properties are given in the following table :

Alloy	Temper	0,2 % yield strength, $R_{p0,2}$		Tensile strength, R_m		Elongation, A , on $5,65\sqrt{S_0}$
		N/mm ²	1 000 lbf/in ²	N/mm ²	1 000 lbf/in ²	%
Mg-RE3 Zn2 Zr	TE	95	14.0	140	20.0	2
Mg-Th3 Zn2 Zr	TE	90	13.0	185	27.0	3
Mg-Zn4 RE Zr	TE	135	19.5	200	29.0	2
Mg-Zn6 Th2 Zr	TE	150	22.0	240	35.0	4
Mg-Zn5 Zr	TE	140	20.0	235	34.0	4
Mg-Zn6 Zr	TF	180	26.0	275	40.0	4

NOTE — In French, TR is used to indicate rare earths (RE).

Before comparing them with the limiting values listed above, the measured or calculated values of 0,2 % yield strength, or of tensile strength, should be rounded off to the nearest 1 N/mm² and those of the percentage elongation to the nearest 1 %.