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INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 2107

LIGHT METALS AND THEIR ALLOYS

TEMPER DESIGNATIONS

1st EDITION

July 1971

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BRIEF HISTORY

The ISO Recommendation R 2107, *Light metals and their alloys – Temper designations*, was drawn up by Technical Committee ISO/TC 79, *Light metals and their alloys*, the Secretariat of which is held by the Association Française de Normalisation (AFNOR).

Work on this question led to the adoption of Draft ISO Recommendation No. 2107, which was circulated to all the ISO Member Bodies for enquiry in October 1970. It was approved, subject to a few modifications of an editorial nature, by the following Member Bodies :

Austria	New Zealand	Thailand
Canada	Norway	Turkey
Germany	Poland	U.A.R.
Hungary	Portugal	United Kingdom
India	South Africa, Rep. of	U.S.A.
Israel	Spain	U.S.S.R.
Italy	Sweden	
Netherlands	Switzerland	

The following Member Bodies opposed the approval of the Draft :

Belgium
Finland
France
Japan

This Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided to accept it as an ISO RECOMMENDATION.

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INTRODUCTION

Designations in accordance with this ISO Recommendation are primarily for use in ISO Recommendations concerning light metals and their alloys*. Their use in national standards is optional.

1. SCOPE

This ISO Recommendation defines the designation of tempers for light metals and their alloys.

2. BASIS OF CODIFICATION

2.1 The temper designations are based on the sequence of basic treatments used to produce the various tempers.

2.2 The temper designation, which is used for all wrought and cast light metal products except ingots, follows the alloy designation and is separated therefrom by a dash.

2.3 Basic temper designations consist of letters.

Subdivisions of the basic tempers, where required, are indicated by a second letter following the letter of the basic temper. These second letters designate a specific sequence of basic treatments, but only those treatments or operations are recognized which significantly influence the product characteristics.

3. BASIC TEMPER DESIGNATIONS

M – *As manufactured.* Applies to products which acquire some temper from hot shaping processes without special control over any strain hardening or subsequent strain hardening such as flattening or straightening.

O – *Annealed.* Applies to wrought products which are fully annealed to obtain the lowest strength conditions, and to cast products which are annealed to improve ductility and dimensional stability.

H – *Strain hardened* (Wrought products only). Applies to products subjected to the application of cold work after annealing (or hot forming) or to a combination of cold work and partial annealing stabilizing in order to secure the specified mechanical properties.

The **H** is always followed by a second letter indicating the final degree of strain hardening.

T – *Thermally treated to produce tempers other than* **M**, **O** *or* **H**. Applies to products which have their strength increased by thermal treatment, with or without supplementary strain hardening.

The **T** is always followed by a second letter indicating the specific sequence of treatments.

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* The use of, or revision of, these temper designations must be approved by Technical Committee ISO/TC 79.