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STEEL—SCHEDULE OF TOOL STEEL COMPOSITIONS

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SCHEDULE OF TOOL STEEL COMPOSITIONS]



STANDARDS ASSOCIATION OF AUSTRALIA
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THE FOLLOWING SCIENTIFIC, INDUSTRIAL AND GOVERNMENTAL ORGANIZATIONS and departments were officially represented on the committee entrusted with the preparation of this standard:

Bureau of Steel Manufacturers of Australia
CSIRO, Division of Manufacturing Technology
Manufacturers and distributors of tool steels
Railways of Australia Committee
Society of Automotive Engineers—Australasia
Society of Manufacturing Engineers

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AUSTRALIAN STANDARD

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PREFACE

This edition of this standard was prepared under the direction of the Association's Committee on Iron and Steel by its subcommittee on tool steels, to supersede AS 1239—1973. The standard applies to tool steels normally available to industry in Australia. The tool steels are classified by type in the same manner as the American Iron and Steel Institute (AISI), and grades not purely Australian have been aligned in typical chemical composition with the Steel Products Manual for Tool Steels published by AISI.

In revising AS 1239—1973, consideration was given to producing a standard along the lines of draft International Standard ISO/DIS 4957, Tool Steels, prepared by the International Organization for Standardization. However this was not proceeded with, since the subcommittee considered that the schedule approach adequately met the requirements of industry. Some grades have been deleted, and others added, and attention is drawn to the inclusion of special purpose high speed steels.

These special purpose types, represented by M101 and M102 (Table 9), have been added because of their increased usage both in Australia and overseas. Powder grades have not been included, principally because they are considered special types, but also their usage is low.

Information concerning other alloy steels not included in the schedule may be obtained from the following Australian standards:

AS 1444 Wrought Alloy Steels—AISI-SAE Standard Hardenability (H) and Stainless Series

AS 2506 Wrought Alloy Steels—En Series.

This standard may require reference to the following standard:

ASTM A 600 High Speed Tool Steel.

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STANDARDS ASSOCIATION OF AUSTRALIA

Australian Standard

for

STEEL—SCHEDULE OF TOOL STEEL COMPOSITIONS

1 SCOPE. This standard sets out a schedule of tool steel compositions and applies to the tool steels normally available to industry in Australia, according to type based largely on the application of the steels.

NOTE: Typical compositions only are listed in the tables; the percentages of the elements shown in each type are only for identification purposes and are not to be considered as the means of composition ranges of the elements. Steels of the same type manufactured by various producers may differ in mean analysis from the values listed and may contain elements not listed in the type identification.

2 DESIGNATION.

2.1 General. The designations adopted for the various types of tool steels are based on the AISI system and are made up as follows:

- (a) A letter symbol classifying each major type (see Clause 2.2).
- (b) A suffix number identifying individual steels of the one type.
- (c) A suffix letter 'A' to indicate tool steels to this Australian standard.

Example: 18-4-1 High Speed Tool Steel is T1A.

- (d) A suffix letter 'S' (joined by a dash) to indicate resulfurized grades.

Example: D2A-S.

2.2 Type Classification. For the purpose of this standard, tool steels are classified by type as follows:

Type	Letter	Table No
Water-hardening steels	W	1
Shock-resisting steels	S	2
Cold work steels, oil-hardening types	O	3
Cold work steels, air-hardening, medium alloy types	A	4
Cold work steels, high carbon, high chromium types	D	5
Hot work steels	H	6
High speed steels, tungsten types	T	7
High speed steels, molybdenum types	M	8
High speed steels, special purpose	M	9
Special purpose steels, low alloy types	L	10
Tool steels, mould types	P	11

2.3 Departures from the AISI System. Departures from the AISI system are indicated by the adoption of a series of numbers beginning at 100, e.g. S100A.