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ISO METRIC HEXAGON COMMERCIAL BOLTS AND SCREWS

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Steel, Hexagon Head, Commercial Products)

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Bureau of Steel Manufacturers of Australia
Confederation of Australian Industry
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Electricity Supply Association of Australia
Fasteners Institute of Australia
Federal Chamber of Automotive Industries
Institution of Production Engineers
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Petroleum Refinery Engineers Advisory Committee
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**ISO METRIC HEXAGON
COMMERCIAL BOLTS AND SCREWS**

AS 1111-1980

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PREFACE

This standard was prepared by the Association's Committee on Fasteners to supersede the 1972 edition. The latter was intended to cover the anticipated needs of Australian industry under the metric system for metric hexagon bolts and screws. In the interests of international trade and international standardization, the standard at the time was fully aligned with the recommendations of the International Organization for Standardization (ISO), which had emanated from its technical committee TC2.

Since 1972 there have been several important changes introduced in the international standards, also the needs of Australian industry have become more crystallized, and hence a complete revision was necessary to take all factors into account. The changes in the ISO standards have been introduced after a great deal of technical study and research within ISO/TC 2, and were to a large degree initiated by the U.S.A. which, when the metric system was first seriously proposed for adoption in that country, developed a new metric fastener system (The Optimum Metric Fastener System). This system was forwarded to ISO as a U.S.A. proposal for a revision of the relevant standards. In the original submission, a very significant number of changes were proposed for both metric fasteners and metric screw threads. The ensuing discussion within ISO/TC 2 which took place over several years were aimed at reducing the technical changes to existing ISO standards to a minimum consistent with achieving improved performance without significantly increasing product costs.

The most significant changes in ISO standards and in this standard from the user's point of view are in the across-flat hexagon sizes, and attention is drawn to Appendix F where this is fully detailed.

This standard has been based on and is in alignment with the following ISO standards, with the exception that the tolerance on overall length of js16 has been retained:

- ISO 272 Fasteners — Hexagon Products — Widths Across Flats
- ISO/R733 Hexagon Bolts and Nuts — Metric Series — Tolerances on Widths Across Flats, Widths Across Corners

- ISO 885 General Purpose Bolts and Screws — Metric Series — Radii Under the Head
- ISO 888 Bolts, Screws and Studs — Nominal Lengths and Thread Lengths for General Purpose Bolts
- ISO 898 Mechanical Properties of Fasteners
 - Part 1 — Bolts, Screws and Studs
 - Part 3 — Marking of Bolts, Screws, Studs and Nuts
- ISO 4016 Hexagon Head Bolts — Product Grade C
- ISO 4018 Hexagon Head Screws — Product Grade C
- ISO 4759 Tolerances for Fasteners
 - Part 1 — Bolts, Screws and Nuts with Thread Diameters between 1.6 (inclusive) and 150 mm (inclusive) and Product Grades A, B and C.

This standard may require reference to the following Australian standards:

- AS 1110 ISO Metric Hexagon Precision Bolts and Screws
- AS 1112 ISO Metric Hexagon Nuts including Thin Nuts, Slotted Nuts and Castle Nuts
- AS 1214 Hot-dip Galvanized Coatings on Threaded Fasteners (ISO Metric Coarse Thread Series)
- AS 1236 Split Cotter Pins (Metric Series)
- AS 1275 Metric Screw Threads for Fasteners
- AS 1391 Methods for Tensile Testing of Metals
- AS 1544 Methods for Impact Tests on Metals
 - Part 3 — Charpy U-notch and Keyhole Notch
- AS 1654 Limits and Fits for Engineering
- AS 1721 General Purpose Metric Screw Threads
- AS 1815 Method for Rockwell Hardness Test
- AS 1816 Method for Brinell Hardness Test
- AS 1817 Method for Vickers Hardness Test
- AS 1897 Electroplated Coatings on Threaded Components (Metric Coarse Series)

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