

NEW ZEALAND GOVERNMENT RAILWAYS MECHANICAL BRANCH	MANUFACTURE OF BOLTS, NUTS AND THREADED BARS	CODE No. 52	
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1. MATERIAL

1.1 Stores held Steel Stock

Bar material accepted from stores for the manufacture of bolts and nuts must be colour coded in accordance with Code 72.

1.2 Steel Stock Grades

- 1.2.1 General Engineering bolts, nuts, studs and threaded bars shall be made from material conforming to B.S. 970, Part 1 - Grade 070, M20 or equivalent.
- 1.2.2 Bolts, nuts, studs and threaded bars for bridges and general construction, manufactured for Ways and Works Branch shall be made from material conforming to Grade 070, M20, or equivalent.
- 1.2.3 Track and crossing bolts and nuts shall be made from material conforming to B.S. 970, Part 1 - Grade 080, M40, or equivalent.

2. DIMENSIONS AND TOLERANCES

2.1 Metric Bolt Heads and Nuts (external geometric dimensions)

- 2.1.1 Black (heavy) hex; must conform to B.S. 4190 or I.S.O. 4016.
- 2.1.2 Black countersunk square; must conform to B.S. 4933.
- 2.1.3 Black cup square; must conform to B.S. 4933.
- 2.1.4 Precision hex; must conform to B.S. 3692 or ISO 4014.

2.2 Imperial Bolt Heads and Nuts (external geometric dimensions)

- *2.2.1 Black (heavy) hex; must conform to B.S. 1769.
- 2.2.2 Black countersunk square; must conform to B.S. 325.
- 2.2.3 Black cup square; must conform to B.S. 325.
- 2.2.4 Precision hex; must conform to B.S. 1768.

*Note: all imperial hex heads to have S.A.E., A.F. dimensions.

2.3 Thread Form

- 2.3.1 Metric thread form must conform to B.S. 3643 Parts I and 2 or I.S.O. 965, Parts 1, 2 and 3.
- 2.3.2 Unified thread form; must conform to B.S. 1580.
- 2.3.3 Whitworth thread form; must conform to B.S. 84.

3. IDENTIFICATION MARKS

3.1 Non Metric Bolts

All non metric bolts shall be stamped with a symbol corresponding to the thread form e.g. B.S.W, B.S.F, N.C, N.F.

3.2 Non Standard Pitches

All non standard pitched nuts, bolts, studs and threaded bars not covered by section 2.3 shall be stamped with the thread pitch dimension.

3.3 Track and Crossing Bolts and Nuts

Track and crossing bolts and nuts shall be identified as or if requested by the Way and Works Branch.

3.4 Strength Grade Designation, Identification Marks

Special bolts studs and threaded bars which do not comply with section 1.2 must be marked to indicate their strength grade as laid down in B.S. 3692, Clause 13 or I.S.O. 898, Part (1).

4. TESTING

Testing of bar material or manufactured bolts and nuts will only be carried out at the request of the Chief Mechanical Engineer.

5. STORING

All bolts manufactured in Workshops are to be received by Stores Branch and stored in bins suitably marked to indicate type, diameter and length. The bins must be free from moisture.