



BOLTS, NUTS AND WASHERS MGS-90-04A

1.0 Description. These specifications cover carbon steel bolts, nuts, and washers as specified herein.

2.0 Materials. The materials shall be non-zinc-coated and meet the following provisions.

2.1 Bolts. Bolts shall be hexagon head bolts meeting the requirements of ASTM A 449, Type 1, with threads as specified on the bid sheets.

2.2 Nuts. Nuts shall meet the requirements of ASTM A 563. In addition they shall be Grade B, Hex for bolt sizes 1-1/2 inch and smaller, or Grade A, Heavy Hex for bolt sizes over 1-1/2 inch, with threads as specified on the bid sheets.

2.3 Flat Washers. Flat washers shall be circular washers meeting the requirements of ASTM F 436.

2.4 Lock Washers. Lock washers shall be extra duty helical spring lock washers meeting the requirements of ANSI/ASME B 18.21.1.

3.0 Packaging.

3.1 All bolts, nuts and washers shall be packaged as indicated on the bid sheet.

3.2 Each box shall be labeled showing the quantity, size and description. Boxes shall be of the size to hold the quantity specified. Extra large size boxes will not be accepted.

4.0 Certification.

4.1 The supplier shall furnish a manufacturer's certification, with the shipment, at destination, for each size and type of bolts, nuts, and washers. The certification shall include the latest specific results of mechanical tests performed by the manufacturer for each size and type of bolts, nuts, and washers shipped.

5.0 Sampling and Testing.

5.1 The bolts, nuts, and washers will be randomly sampled and tested for compliance with these specifications at destination. Sampling and testing will not be performed until the required certification has been received.

5.2 If any sample fails, the shipment will be retested and all retest samples shall meet the requirements of these specifications or the entire shipment will be rejected. In addition, if any sample fails, the supplier will be notified and no further shipments will be accepted until the matter is resolved.

6.0 Acceptance.

6.1 Acceptance of the bolts, nuts, and washers will be based upon a satisfactory manufacturer's certification, inspection at destination for marking, dimensions, and workmanship, and upon satisfactory results of any tests performed.

7.0 Ordering.

7.1 The lengths of bolts, threads for bolts and nuts, and size and quantity of all materials are to be specified when ordering.