

Eyebolt - Carbon Steel

1. **A Signed Certificate of Compliance is required which validates the eyebolts meet the following requirements:** (See Contract Data Requirements List (DI-MISC-81356) Certificate of Compliance)
 - 1.1 **Specification** – Eyebolts shall be manufactured in accordance with ASME B30.26.
 - 1.2 **Material** – Eyebolts shall be forged steel and meet the minimum requirements for material composition of ASTM A489, Standard Specifications for Carbon Steel Lifting Eyes.
 - 1.3 **Surface Treatment** – None, eyebolts shall have NO surface treatments such as paint, galvanization, or other coatings.
 - 1.4 **Minimum Factor of Safety** – Eyebolts shall have a minimum breaking strength that is 5 times the manufacturer's rated safe working load.
 - 1.5 **Thread Relief** – Thread relief is not permitted on non-shouldered eyebolts. Shouldered eyebolts may have thread relief. The minimum diameter shall not be less than the thread minor diameter, unless it is designed by the manufacturer to be less than the thread minor diameter to prevent binding. The thread relief will have a smooth radius to the bottom of the shoulder equal to $\frac{1}{2}$ (thread major diameter minus the thread minor diameter).
 - 1.6 **Marking** – Eyebolts shall be permanently marked with manufacturer's identification and safe working load or designed rated special purpose capacity to provide traceability of the item to the manufacturer.
2. **A Data Report is required, which provides the information in items 2.1 and 2.2 below:**
 - 2.1 **Defect Removal** - The manufacturer shall authorize defect removal by grinding (excluding threaded shank), provided that such grinding does not reduce the cross-sectional diameter to less than 95% of the original/nominal diameter. Grinding shall longitudinally follow the contour of the eyebolt and be contoured with a 3:1 taper. (See Contract Data Requirements List (DI-MISC-80678) Defect Removal Authorization)
 - 2.2 **Periodic Load Testing** - The manufacturer shall authorize periodic load testing between 150% (+5%, -0%) of the manufacturer's rated capacity or if the manufacturer does not authorize a periodic load test between 150% (+5%, -0%) of the rated capacity, the manufacturer shall specify the recommended maximum periodic test load. (See Contract Data Requirements List (DI-MISC-80678) Period Load Test)
3. **A Signed Certificate of Proof Test for each eyebolt for the following test and inspections:**
 - 3.1 **Proof Static Load Test** (See Contract Data Requirements List (DI-NDTI-80809) Static Load Test) - Eyebolts shall be proof tested for ten minutes to 150% (+5%, -0%) of the manufacturer's safe working load limit based on certified weights or as indicated on load indicating devices.
 - 3.2 **Visual Inspection** (See Contract Data Requirements List (DI-NDTI-80809) Visual Inspection) – Following the proof load test, the manufacturer shall visually inspect the eyebolts for damage such as nicks, gouges, cracks, bending or elongation and thread damage or other defects that could affect the use or installation of the eyebolts.
 - 3.3 **Magnetic Particle (MT) Inspected** (See Contract Data Requirements List (DI-NDTI-80809) Magnetic Particle Test) - After proof testing, the accessible surface area of the eyebolts shall be 100% MT Inspected per NAVSEA Technical Publication T9074-AS-GIB-010/271, (TP-271), requirements for Non-Destructive Testing Methods. Acceptance criteria shall be per MIL-STD-2035A. MT inspections performed in accordance with ASTM 275, Standard Test Method for Magnetic Particle Examination of Steel Forgings, are acceptable provided the TP-271 requirements are met for:
 - a) Arc Strikes – Arc strikes shall be ground out, faired into surrounding material, and re-inspected using the prod or yoke method or visually inspected at not less than 5X magnification. Excavations and

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- remaining wall thickness shall be inspected for, and shall meet, the requirements of the governing specification.
- b) Tolerance on Equipment Ammeters – To check the equipment ammeter, a suitable calibrated ammeter shall be connected in series with suitable shunts and the current through the electrodes measured. The amperage measured by the calibrated ammeter during the test shall simultaneously be compared to that indicated on the meter of the magnetic particle equipment. The equipment meter shall agree (within 5% of full scale) with the current measured by the calibration meter.
 - c) Automated Equipment – Automatic powder blowers or any other form of forced air, other than from a hand-held bulb, shall not be used for the application or removal of dry magnetic particles.
 - d) Surface Preparation – Prior to inspection, surfaces shall be dry and free from any contamination which might interfere with the proper formation or interpretation of the magnetic particle patterns. With the exception of undercuts, which are within specification allowances, the contour of welds shall blend smoothly and gradually into the base metal. Surface irregularities shall be removed to the extent that they will not interfere with interpretation of the test results. The final magnetic particle inspection shall be performed in the final surface and heat-treated conditions for the component.
- 4. The Contractor shall extend to the Government the full coverage of any standard warranty normally offered in a similar sale, provided such warranty is available at no additional cost to the Government. (See Contract Data Requirements List (DI-SESS-81639) Warranty Documentation)
 - 5. Failure to provide the Contract Data Requirement Lists (CDRLs) above shall be cause for rejection of this material.
 - 6. **Changes** to specifications or technical requirements are **NOT ALLOWED** without Shipyard (Code 2370.21) approval via the Administrative Contracting Officer (ACO).