

**Advanced LIGO Music Wire Specification**

AUTHOR(S)	DATE	Document Change Notice, Release or Approval
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1 Scope

This document defines the requirements for music wire to be used in the Advanced LIGO suspension systems.

2 Requirements**2.1 General**

- The wire shall be manufactured per ASTM A 228/A 228M, including, but not limited to, the chemical, mechanical, and metallurgical requirements.
- Diameter tolerance (inches): +/-0.0001 for wire ≤ 0.011 inches, +/-0.0002 for wire > 0.011 and ≤ 0.02 inches, and +/-0.0005 for wire > 0.02 and ≤ 0.032 inches.
- Minimum 12 inch cast at 12 inch length.

2.2 Processing

- Clean gloves must be worn at all times. (No bare hands touching the wire)
- Wire must be fresh drawn within 2 weeks of shipment
- Wire must be free of oil and grease and must not be used during the manufacturing process

2.3 Inspection and Documentation

- Wire must be free of rust, scale, corrosion, spotting artifacts, die marks, pits, and scratches visible at 10X magnification
- Provide Material Certifications
- Provide Certificate of Conformance to Purchase Order requirements

2.4 Packaging

- Wire shall be wound on 12 inch diameter spools
- Wire shall be tightly wrapped with anti-corrosion paper and taped
- Desiccant shall be added inside plastic shipping bag
- Purge plastic shipping bag with inert gas before sealing
- Double bag