



BEARING, STEEL BACKED, BRONZE-TFE, Pb IMPREGNATED

ESA-M8A6-B

1. SCOPE

The material defined by this specification is a steel backed, tetrafluoroethylene and lead impregnated porous bronze bushing.

2. APPLICATION

This specification was released originally for material used as strut and shock rod bearings.

3. REQUIREMENTS

3.1 STEEL BACKING

Cold rolled low carbon steel 0.05 - 0.15% carbon.

3.2 LINING INTERLAYER MATERIAL AND THICKNESS

3.2.1 Composition, %

Tin	10.0 - 12.0
Copper	83.0 - 87.0
Lead	3.0 - 5.0
Total Others	0.5 Max.

3.2.2 Average Thickness

0.009-0.013 in
(0.23-0.33 mm)

For initial approval section 30 bearings, mount and at 100 magnifications measure the thickness from the steel backing to highest bronze particle in four areas. Thickness will be the average of 120 readings.

3.3 OVERLAY COMPOSITION AND THICKNESS

3.3.1 Composition (% by volume)

Polytetrafluoroethylene	73.3 - 83.7
Lead	15.5 - 25.5
Aluminum Oxide	0.8 - 1.2

Date	Action	Revisions
2003 10 09	Revised	Para 3.0 inserted; para 3.6 and 4 deleted
1983 04 11		Released PCR CR896101-C





3.3.2 Average Film Thickness

0.0013 +/- 0.0003 in
(0.033 +/- 0.008 mm)

For initial approval use the 30 mounted sections from 3.2.2. At 100 magnifications measure the thickness of PTFE in the four thinnest areas from the bronze particles to outer edge. Thickness will be the average of 120 readings.

3.3.3 Penetration

Lubricant shall penetrate the lining material to a depth of 0.003 in (0.08 mm) min.

3.4 CRUSHING STRENGTH, min

40,000 psi (276 MPa)

Apply load to PTFE-bronze lining. Bronze interlayer must not be collapsed as determined by sectioning or by a 3% maximum change in section thickness as measured before and after loading.

3.5 BOND QUALITY (Steel Backing and Bronze)

No flaking

Test Method: Bend material through 90° around a radius not greater than 9-10 times the nominal steel thickness, with the lining material on the outside of the bend.

5. GENERAL INFORMATION

The information given below is provided for clarification and assistance in meeting the requirements of this specification.

5.1 OVERLAY LEAD COMPOSITION (% by volume)

Lead/Tin Alloy
Difluoro Lead11.0 - 16.0
4.5 - 9.5

Total Lead

15.5 - 25.5