

## FEDERAL SPECIFICATION

# MAGNESIUM ALLOY, SAND CASTINGS

*This amendment, which forms a part of Federal Specification QQ-M-56b, dated October 24, 1960, was approved by the Commissioner, Federal Supply Service, General Services Administration for the use of all Federal agencies.*

Page 1, paragraph 1.2.1, following  
 "HZ32A" insert "QE22A."

Page 4, table I: Add "QE22A" to the table with the following composition:

Composition	Magnesium	Copper	Nickel	Silver	Rare Earth	Zirconium	Total other elements, maximum
	Percent	Percent	Percent	Percent	Percent	Percent	Percent
QE22A	Remainder	0.10 max.	0.01 max.	2.0-3.0	1.80-2.5	0.40-1.0	0.30

<sup>2</sup> Rare earth shall be present as Didymium.

Page 5, table II: Add the following mechanical properties for QE22A, for separately cast bars.

Alloy and Temper	Tensile strength, minimum	Yield strength at 0.2 percent offset, or at extension indicated		Elongation in 2 inches, minimum
		Minimum	Extension under load	
QE22A:	P.s.i.	P.s.i.	Inch per inch	Percent
T6 room temperature	35,000	25,000	0.0058	2
T6-600°F.	18,000	10,000	—	—

Page 6, table III: Add the following mechanical properties for QE22A, for specimens cut from castings.

Alloy and temper	Tensile strength		Yield strength at 0.2 percent or at extension indicated			
	Average	Minimum	Average	Minimum	Extension under load	
					for average	for minimum
QE22A:	P.s.i.	P.s.i.	P.s.i.	P.s.i.	Inch per inch	Inch per inch
T6 room temperature	32,300	28,000	23,000	20,000	0.0055	0.0051
T6-600°F.	15,000	10,000	11,000	8,000	—	—

**QQ-M-56b**

Page 6, table III: To footnote 1 add the following:", except for QE22A-T6 the elongation shall be 2 percent minimum at room temperature."

Page 7, paragraph 3.8.4, line 2: Delete "and HZ32A" and insert "HZ32A and QE22A."

Page 7, paragraph 3.9, line 6: Add "(See 6.3)".

Page 11, paragraph 6.1: Add. "Alloy QE22A-T6 displays the best combination of room and elevated temperature properties. Applications in excess of 600°F. are possible.

Water quenching is recommended to assure good mechanical properties."

Page 13, paragraph 6.3: Add new subparagraph as follows:

6.3.5. Dichromate treatment is not recommended for use on magnesium alloys containing manganese or rare earth metals.

**MILITARY CUSTODIANS:**

Army—MR

Navy—Wep

Air Force—MOA