

ALUMINUM ALLOY CASTINGS, SAND
4Cu - 2Ni - 1.5Mg - 0.2Cr (Al42-T75)
Solution Treated and Overaged

This specification has been declared "NONCURRENT" by the Aerospace Materials Division, SAE, as of 3-28-79. It is recommended that this specification not be specified for new designs.

This cover sheet should be attached to the "D" revision of the subject specification.

SAE Technical Board rules provide that: "All technical reports, including standards approved and practices recommended, are advisory only. Their use by anyone engaged in industry or trade or their use by governmental agencies is entirely voluntary. There is no agreement to adhere to any SAE standard or recommended practice, and no commitment to conform to or be guided by any technical report. In formulating and approving technical reports, the Board and its Committees will not investigate or consider patents which may apply to the subject matter. Prospective users of the report are responsible for protecting themselves against liability for infringement of patents."

RECEIVED



Documents

Document Sharing Hub

AERONAUTICAL MATERIAL SPECIFICATIONS

AMS 4220D

SOCIETY OF AUTOMOTIVE ENGINEERS, Inc. 485 Lexington Ave., New York 17, N.Y.

Issued 1-1-42
Revised 6-15-59ALUMINUM ALLOY CASTINGS, SAND
4Cu - 2Ni - 1.5Mg - 0.2Cr (Al42-T75)
Solution Treated and Overaged

1. ACKNOWLEDGMENT: A vendor shall mention this specification number and its revision letter in all quotations and when acknowledging purchase orders.

2. APPLICATION: Primarily for air-cooled cylinder heads.

3. COMPOSITION:

Copper	3.7 - 4.5
Nickel	1.8 - 2.3
Magnesium	1.2 - 1.7
Chromium	0.15 - 0.25
Titanium	0.07 - 0.18
Iron	0.8 max
Silicon	0.6 max
Manganese	0.10 max
Zinc	0.10 max
Other Impurities, each	0.05 max
Other Impurities, total	0.15 max
Aluminum	remainder

3.1 If boron is present in the amount of 0.001% or more, the titanium content may be as low as 0.02%.

4. CONDITION: Solution heat treated and overaged.

5. TECHNICAL REQUIREMENTS:

5.1 Casting: Castings shall be produced in lots from metal conforming to Section 3. Metal remelted from previously analyzed ingot may be poured directly into castings. Furnace or ladle additions of small amounts of grain refining elements or alloys are permissible. Unless otherwise agreed upon by purchaser and vendor, molten metal taken from alloying furnaces, with or without additions of foundry operating scrap (gates, sprues, risers, and rejected castings), shall not be poured into castings unless first converted to ingot, analyzed, and remelted or until the composition of a sample taken after the last addition to the melt has been found to conform to Section 3.

5.1.1 A melt shall be the metal withdrawn from a batch furnace charge of 2000 lb or less as melted for pouring castings or, when permitted by purchaser, a melt shall be 4000 lb or less of metal withdrawn from one continuous furnace in not more than 8 consecutive hours.

5.1.2 A lot shall consist of castings poured from a single melt in not more than 8 consecutive hours.

5.1.3 During melting, the metal shall be heated to not over 1450 F. The temperature of metal being poured into the mold shall not exceed 1420 F. Written permission shall be obtained from purchaser by letter or by notation on the drawing before deviating from the requirements of this paragraph.