



AEROSPACE MATERIAL SPECIFICATION

Society of Automotive Engineers, Inc.
485 LEXINGTON AVENUE, NEW YORK, N.Y. 10017

AMS 4291C

Superseding AMS 4291B

Issued 10-1-43

Revised 5-1-68

ALUMINUM ALLOY CASTINGS, DIE 8.5Si - 3.5Cu

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

2. **COMPOSITION:**

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	min	max
Silicon	7.5 - 9.5	
Copper	3.0 - 4.0	
Zinc	-- 3.0	
Iron	-- 1.3	
Nickel	-- 0.50	
Manganese	-- 0.50	
Tin	-- 0.35	
Magnesium	-- 0.10	
Other Impurities, total	-- 0.50	
Aluminum	remainder	

Note. The above composition was previously shown as Composition 2. The former Composition 1 is no longer available. Castings having the above composition shall be supplied whenever either Composition 1 or Composition 2 is specified on the drawing.

3. **CONDITION:** As cast.

4. **TECHNICAL REQUIREMENTS:**

- 4.1 **Casting:** Castings shall be produced in lots from metal conforming to Section 2. Metal remelted from previously analyzed ingot may be poured directly into castings. Furnace or ladle additions 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 2.

- 4.1.1 A melt shall be the metal withdrawn from a batch furnace charge of 2000 lb or less as melted for pouring castings or, when permitted by purchaser, a melt shall be 4000 lb or less of metal withdrawn from one continuous furnace in not more than 8 consecutive hours.

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

- 4.2 **Test Specimens:** Chemical analysis specimens, when required by purchaser, shall be cast from each melt and shall be of size and shape agreed upon by purchaser and vendor.

5. **QUALITY:**

- 5.1 Castings shall be uniform in quality and condition, sound, and free from foreign materials and from internal and external imperfections detrimental to fabrication or to performance of parts. Castings shall have smooth surfaces and shall be well cleaned.

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