

COMMONWEALTH AIRCRAFT CORPORATION
 Proprietary Limited
 MELBOURNE



MATERIAL SPECIFICATION

CA 203
 ISSUE D

ALUMINIUM ALLOY SAND AND PERMANENT MOULD CASTINGS.
 5.0 Si. As Cast.

1. DESCRIPTION

This specification covers sand, permanent mould and pressure die castings. The castings are pressure tight and give maximum resistance to corrosion.

This alloy has poor mechanical properties but has excellent castability and is suitable for intricate castings. This alloy is also weldable.

2. INSPECTION AND TESTING PROCEDURE

The castings shall be inspected and testing in accordance with the relevant requirements of the current issue of B.S.L101, section one, and section three or four, and/or as specified on the relevant drawing(s), and qualified in accordance with the requirements of CA.799.

3. IDENTIFICATION OF CASTINGS

All castings shall be identified in accordance with the requirements of Section 1, Clause 12 of the current issue of B.S.L101, and by raised letters and numerals as specified on the relevant drawing(s).

The drawing shall specify the material, and the type of casting as follows:-

Sand Mould Castings	CA.203-1
Permanent Mould Castings	CA.203-2
Pressure Die Castings	CA.203-3

ISSUE	DATE	WRITTEN	APPROVED			CA.203 ISSUE D SUPERSEDES CA.203 ISSUE C
			C.A.C.	R.A.A.F.	Q.C.B.	
D	May '68.	R.L.L.				
REV.						

SPECIFICATION CA.203
ISSUE D

4. CHEMICAL COMPOSITION

The castings shall have the following chemical composition:-

ELEMENT	SAND & PERMANENT MOULD CASTINGS PERCENT		PRESSURE DIE CASTINGS PERCENT	
	Min	Max	Min	Max
Silicon	4.5	6.0	4.5	6.0
Copper	-	0.1	-	0.6
Iron	-	0.8	-	2.0
Magnesium	-	0.05	-	0.1
Manganese	-	0.3	-	0.3
Zinc	-	0.3	-	0.5
Titanium	-	0.2	-	-
Nickel	-	-	-	0.5
Tin	-	-	-	0.1
Other each	-	0.05	-	-
Impurities Total	-	0.15	-	0.25
Aluminium	Remainder.		Remainder.	

5. HEAT TREATMENT

The castings do not require heat treatment, and shall be supplied in the "as cast" condition.

6. MECHANICAL PROPERTIES

The mechanical properties obtained from test bars shall be as given in the following table:-

TYPE OF CASTING	TENSILE STRENGTH tons/sq.inch. minimum.	ELONGATION % minimum ($4\sqrt{S_0}$)
Sand Mould	7.6	3
Permanent Mould	9.4	5
Pressure Die	14.7*	9*

* Typical properties only. Not a specification requirement.

6. MECHANICAL PROPERTIES (Cont'd.)

Where the need to test a casting arises, the properties shown by test pieces machined from the casting shall be as stated by the appropriate design authority. The properties obtained from a casting should be expected to be lower than the properties obtained from the corresponding separately cast test bar.

7. RELEASE NOTES AND TEST CERTIFICATES

The castings shall be released, under cover of release notes and test certificates in accordance with the requirements of the appropriate inspection authority.

8. SIMILAR SPECIFICATIONS

QQ.A.591d Alloy 43
QQ.A.596d Alloy 43
QQ.A.601c Alloy 43
B.S.1490:1963 LM8
B.S.1490:1963 LM18
DT.716, 722, 727, 735.