



ENGINEERING MATERIAL SPECIFICATION

ALUMINUM BRAZING SHEET - TUBE STOCK

WSH-M2A145-A
WSH-M2A145-A2

1. SCOPE

The material defined by these specifications is an aluminum sheet clad with brazing alloy on one side.

2. APPLICATION

These materials were released originally for fabrication of core tubes in automotive radiators.

3. REQUIREMENTS

3.0 STANDARD REQUIREMENTS FOR PRODUCTION MATERIALS

Material suppliers and part producers must conform to the Company's Standard Requirements For Production Materials (WSS-M99P1111-A).

3.2 CHEMICAL COMPOSITION PERCENTAGE (See Sec. 5)

WSH-M2A145-	A/A2	A	A2
	Core	Braze Clad	Braze Clad
Silicon	0.40 max	9.2 - 10.2	9.1 - 10.1
Iron	0.50 max	0.5 max	0.50 max
Copper	0.20 - 0.40	0.10 max	0.10 max
Magnesium	0.35 - 0.55	1.25 - 1.75	0.10 - 0.30
Manganese	1.00 - 1.25	0.10 max	0.10 max
Bismuth	-	0.05 - 0.15	-
Titanium	0.10 max	-	-
Zinc	0.15 max	0.10 max	0.10 max
Each Other Element	0.05 max	0.05 max	0.05 max
Total Other Elements	0.15 max	0.15 max	0.15 max
Aluminum	Balance	Balance	Balance

3.3 BRAZE CLAD THICKNESS

10 +/- 2% of total material thickness specified on Engineering Drawing

3.4 MECHANICAL PROPERTIES (Material as Supplied) (ASTM B 557M)

H-24 Temper

Ultimate Tensile Strength	179 - 227 MPa
Yield Strength	144 - 186 MPa
Elongation, min	9%

Note: These properties apply only to material thicknesses from 0.30 - 0.43 mm.

Date	Action	Revisions
2003 09 18	Revised	Para 3.0 inserted; para 3.1, 3.5 and 4 deleted
1991 03 07	CE00E101092-15	Revised 3.2 & 5
1989 10 27	RD885100-278	Released



5. GENERAL INFORMATION

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

The chemical composition values shown in section 3.2 are mandatory, however, suppliers should aim to meet the desired target values for the elements shown below. These target values give rise to optimum conditions:

WSH-M2A145-	A/A2	A	A2
	Core	Braze Clad	Braze Clad
Silicon	0.04 - 0.08	9.8	9.8
Iron	0.18 - 0.22	-	-
Copper	0.30	-	-
Magnesium	0.45	1.5	0.20
Manganese	1.10	-	-
Bismuth	-	0.08	-