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MILITARY SPECIFICATION

METAL MATRIX COMPOSITES (MMC):
ALUMINUM REINFORCED WITH SILICON CARBIDE PARTICLES OR WHISKERS

This amendment forms a part of MIL-M-46196A, dated 7 April 1993, and is approved for use by all Departments and Agencies of the Department of Defense.

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3.6, third sentence in the paragraph: Delete and substitute: "The material should also be free from porosity, foreign matter, banding, dye penetrant, microcracks, or any other internal defect that would negatively affect the properties of the material."

3.6, fourth sentence in the paragraph: Delete "The material shall be free of delamination."

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Table II: In the 2009 Aluminum Alloy Matrix column under Mechanical Properties delete and substitute the following values:

	Delete	Substitute
Tensile Strength		
"L	88.0 (607)	91.5 (631)
LT	71.0 (490)	75.3 (519)
Yield Strength		
L	64.0 (441)	63.9 (441)
LT	52.0 (359)	51.2 (353)
Elongation		
L	3.3	2.9
LT	5.1	4.3
Modulus of Elasticity		
L	14.3 (98.6)	14.9 (103)
LT	12.9 (89)	. . . . ."

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Note e: Delete and substitute:

"e The mechanical properties for 6061 Al/SiC/40p in the initial version of this specification were retained in this revision. For the rest of the composites, a value was calculated for each property which 99% of the population of values is expected to exceed. This calculation was made as recommended in MIL-HDBK-5, Metallic Materials and Elements For Aerospace Vehicle Structures. It was assumed that the distribution of the data was normal. The number of data values used in the calculations was five, except it was 50 in the case of 2009 Al/SiC/15w and 48 in the case of 6090 Al/SiC/25p. The calculated data are minimum values for procurement acceptance purposes. They are <u>not</u> design allowables. For design guidance, the technical literature should be consulted; e.g., Ketema Inc., SDS Spacecraft Structural Composite Materials Selection Guide, prepared for WPD L502, AFWAL, Materials Laboratory, Wright-Patterson AFB, OH."

Custodians:
Army - MR
Navy - AS
Air Force - 11

Review activities:
Army - MI
Navy - OS

User activity:
Army - AV

Preparing Activity:
Army - MR

Project CMPS-0113