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**INCH-POUND**

MSFC-SPEC-548

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EI42

# SPECIFICATION FOR VACUUM BAKING OF ELECTRICAL CONNECTORS FOR SPACE APPLICATIONS

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Multiprogram/Project Common-Use Document or Program/Project Name EI42		
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	Effective Date: August 1, 2007	Page 2 of 4

### DOCUMENT HISTORY LOG

Status (Baseline/ Revision/ Canceled)	Document Revision	Effective Date	Description
Revision	A	4/22/80	Document rewrite
Revision	B	09/16/80	Document rewrite
Revision	C	08/01/07	Revised document throughout so that all requirements state "shall" to satisfy CAITS action #04-DA01-0387

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	Effective Date: August 1, 2007	Page 3 of 4

## 1. SCOPE

- 1.1 This specification covers the requirements for vacuum baking of electrical connectors to control stress corrosion and outgassing of the materials used in the connectors. Connectors are required to meet MSFC-SPEC-522 and JSC-SP-R-002 for Space applications.

CAUTION: Only those connectors with specified temperatures equivalent to or greater than that in paragraph 3.1 of this specification should be subjected to the vacuum bake.

## 2. APPLICABLE DOCUMENTS

- 2.1 The following documents form a part of this specification to the extent specified herein. Unless otherwise indicated, the issue in effect on the date of application shall apply.

### GEORGE C. MARSHALL SPACE FLIGHT CENTER (MSFC)

MSFC-SPEC-522                      Design Criteria for Controlling Stress Corrosion Cracking

### LYNDON B. JOHNSON SPACE CENTER (JSC)

SP-R-0022                      General Specification, Vacuum Stability Requirement of Polymeric Material for Spacecraft Application

## 3. REQUIREMENTS

- 3.1 Vacuum Bake - The connectors shall be subjected to a vacuum bake cycle consisting of:

Temperature: 340°F + 10°F, -15°F

Vacuum:  $5 \times 10^{-4}$  Torr or better

Time: 48 hours minimum; not to exceed 100 Hours

- 3.2 Identification - Connectors which have been exposed to the vacuum bake as specified in 3.1 shall be identified or documented by one of the following methods:

- 3.2.1 A mark which is clearly visible on each half of the connector. A symbol, "H" should be placed on each half of the connector in the vicinity of the part number identification. Vacuum baked connector accessories and separate pieces should also be marked with the symbol "H". These markings should not obscure or confuse any information on the

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	Effective Date: August 1, 2007	Page 4 of 4

connectors such as part numbers or date codes. The ink used shall meet the outgassing requirements of JSC-SP-R-0022 and all other requirements for Space applications.

3.2.2 Record on the connector's Identification and Record (IR) tag.

3.2.3 Record on the work order, manufacturing instructions or where traceability is maintained and can easily be determined that subject connectors have been vacuum baked.

3.3 Sealed Containers - The connectors shall be kept in their sealed containers (bags) at all times except while undergoing vacuum bake and inspection. The protective plastic caps shall be kept in place except during vacuum bake.

3.4 Handling - When removed from their sealed containers, the connectors should be kept in a clean area and only handled with lint-free gloves.

#### 4. QUALITY ASSURANCE (VERIFICATION)

4.1 Inspection – Planning paper work inspection required pre vacuum bake and visual inspections shall be performed post vacuum bake.

#### 5. PACKAGING

5.1 The connectors shall be in sealed bags and individually packaged during transporting/shipping between MSFC and the user.