

CHANGE NOTICE

Date Prepared: 03/12/2001

1. The Boeing Company Post Office Box 58747 Houston, TX 77258		2. <input type="checkbox"/> Proposed <input checked="" type="checkbox"/> Approved	3. Code Ident. 2B945		4. Doc. No. SSP 30245E		
			5. Code Ident. 2B945		6. CDCN No. 010		
7. System Designation ISS		8. Related ECP No./Title SSCN 003690			9. Contract No. NAS15-10000		
		10. Contractual Activity SSCN 003690					
11. Document Title Space Station Electrical Bonding Requirements				12. Effectivity All Units			
THIS NOTICE INFORMS RECIPIENTS THAT THE DOCUMENT IDENTIFIED BY THE NUMBER (AND REVISION LETTER) SHOWN IN BLOCK 4 HAS BEEN CHANGED. THE PAGES CHANGED BY THIS CDCN BEING THOSE FURNISHED HEREWITH AND CARRYING THE SAME DATE AS THIS CDCN. THE PAGES OF THE PAGE NUMBERS AND DATES LISTED BELOW IN THE SUMMARY OF CHANGED PAGES COMBINED WITH NON-LISTED PAGES OF THE ORIGINAL ISSUE OF THE REVISION SHOWN IN BLOCK 4 CONSTITUTE THE CURRENT VERSION OF THIS DOCUMENT.							
13. CDCN No.	14. Pages Changed (Indicate Deletions)				S*	A*	15. Date
010	Revision and History page Page 3-4 Page C-17.				X X X		3/12/2001
	Order of Incorporation DCN 009, 010						
16. Technical Concurrence (Contracting Agency)					Date		

* "S" indicates supersedes earlier page. "A" indicates added page.

REVISION AND HISTORY PAGE

REV.	DESCRIPTION	PUB. DATE
	Draft Revision B – SDR Version “Reference SSCBD 000008”	03-22-94
B	Revision B (Reference SSCBD 000008 R1, Eff. 6-3-94) Revised to Transition from Freedom to ISS. Changes include extensive simplification of requirements and scope.	09-30-94
C	Revision C (SSCD 000263, Eff. 09-04-96) Administration Update	01-29-97
	DCN 001 incorporates ECP 263 (Supplemental Release)	06-06-97
	DCN 002 incorporates SSCN 000588	05-13-98
	DCN 003 incorporates SSCN 000777	07-21-98
D	Revision D incorporates SSCN 001102	07-21-98
	DCN 004 incorporates SSCN 001405	01-12-99
	DCN 005 incorporates SSCN 001462	06-09-99
	DCN 006 incorporates SSCN 001662	06-09-99
	DCN 007 incorporates SSCN 001920	08-25-99
	DCN 008 incorporates SSCN 002107	08-27-99
E	Revision E incorporates SSCD 002345 Eff. 08-06-99	11-22-99
	DCN 009 incorporates SSCD 003213 Eff. 06-28-00	04-13-01
	DCN 010 incorporates SSCD 003690 Eff. 11-08-00	04-13-01

3.2.1.3.4 PIPE AND HOSE BONDING

All conductive pipes, tubes, and hoses that carry fluids shall have a mechanically secure conductive connection to conductive structure that shall measure 1 ohm or less. The pipe, tube, or hose installation shall not be the primary path for electrical power under normal or fault conditions. Nonconductive plumbing installations shall be designed so that the static voltage generated by fluid flow will not exceed 350 volts at any point outside the pipes, tubes, or hoses.

3.2.1.3.5 TRADITIONALLY HOMOGENEOUS STRUCTURAL MATERIALS

The traditionally homogeneous class of structural materials includes glass, quartz, surface coatings, polymers, plastics, etc. These materials cover a wide range of conductivities. In each case where Class S applies (in all cases where none of the other classifications applies), the bond methodology shall assure that no conductive surface area greater than 200 square cm is without a bond path from conductive layer to conductive structure. The bond resistance from the connection point to conductive structure shall be less than 1 ohm. For example, a metalized thermal blanket may have the dielectric surface exposed to the plasma as long as the metalized layers are grounded to conductive structure. See appendix C for exception (EMECCB TIA-0136) to this paragraph.

3.2.1.3.6 MULTILAYER INSULATION

Conductive layers shall be bonded together in at least two locations. The bonding resistance from those locations to structure shall be less than 1 ohm. See appendix C for exceptions (EMECCB TIA-0120 and EMEEP TIA-0236) to this paragraph.

DCN 010

3.3 PROCESSES, METHODS, AND PROCEDURES

3.3.1 SELECTION OF MATERIALS

Materials and parts for electrical bonding shall be as specified herein. Materials specified in this document shall also be selected in accordance with SSP 30233.

3.3.2 STANDARD PARTS

Standard parts (Military Standard (MS), Army Navy (AN), or Joint Army Navy (JAN)) that comply with the requirements of this document shall be used for electrical bonding wherever suitable for the purpose intended and shall be identified on drawings by part numbers. Commercial standard parts such as screws, bolts, washers, nuts, and cotter pins that comply with the requirements of this document shall be permitted for electrical bonding in place of standard parts (MS, AN, or JAN).

Relaxation of the bond requirement between the Acme screw housing and the baseplate to 5 milli-Ohms should provide adequate relief for remaining BCDUs. This is not a common outage. Of the 14 BCDUs which have been tested thus far, this is the only unit which has exhibited this outage. **DCN 009**

EMEP TIA-0236

DCN 010

C.3.2.1.3.6 MULTILAYER INSULATION

DCN 010

Exemption: The S1 and P1 Radiator Junction Box Thermal Blanket Assemblies (CI 222080A, PN 1F81289) are not required to meet the bonding requirements of SSP 30245, paragraph 3.2.1.3.6, using a structure terminating ground strap and are approved as designed. **DCN 010**

Rationale: Because exposed surface of the Radiator Junction Box Thermal Blanket Assembly is made of beta cloth and because it has been shown beta cloth is essentially nonconductive, an accumulated surface charge will not discharge upon contact. The total area of the blanket is 235 square inches or 1.632 square feet. **DCN 010**