

CRITICAL ITEMS LIST (CIL)

SYSTEM: Thermal Protection System FUNCTIONAL CRIT: 1
 SUBSYSTEM: Components PHASE(S): b, c
 REV & DATE: K, 6-29-01 HAZARD REF: T.02
 DCN & DATE: 001, 2-7-02
 ANALYSTS: B. Burkes/R. Lauto

FAILURE MODE: Loss of SLA Material
 FAILURE EFFECT: b) Loss of mission and vehicle/crew due to structural failure resulting in severed ullage pressure cabling causing early engine shutdown or fire/explosion.
 Loss of mission and vehicle/crew due to debris impacting orbiter in critical areas.
 TIME TO EFFECT: Seconds
 FAILURE CAUSE(S): A: Material Deficiency
 B: Process Deficiency
 REDUNDANCY SCREENS: Not Applicable
 FUNCTIONAL DESCRIPTION: This ablative material provides insulation for the ET's external cabling system and protects the cable tray assemblies from aerodynamic heating during ascent.

FMEA ITEM CODE(S)	PART NO.	PART NAME	QTY	EFFECTIVITY	
5.8.9.1	80971028417	Segment Assembly, TPS Appl	10 14	ET-61 thru 90 ET-91 & Up	
	80971048490	Cable Tray Closure	9	ET-61 & Up	
	80971048490	Gap Closure, TPS Appl, LO2 C/T	5	ET-91 & Up	
	80971009403	Gap Closure, TPS Appl, LO2 C/T	1	ET-61 thru 90	
	80971048413	Cover, Cable Tray, TPS Appl	10 14	ET-61 thru 90 ET-91 & Up	
	80971009404	Cover-LO2 C/T Fairing, TPS Appl	1	ET-71 thru 90	
	80971048404	Cover-LO2 C/T Fairing, TPS Appl	1	ET-91 & Up	
	80971128418	Aft C/T Fairing, TPS Appl	1	ET-71 & Up	
	80971028423	Segment Assembly, TPS Appl	4	ET-61 thru 90	
	80911017063	Camera Fairing TPS Appl	1	ET-115	
	80911017063	Cover-LO2 C/T TPS Appl	1	ET-115	
	80971017065	LO2 Cable Tray Closeout, Offsite	1	ET-115	
	5.8.10.1	80971028422	Cable Tray Assembly, TPS Appl	12 15	ET-61 thru 66 ET-67 & Up
		80971048448	Cover Assembly, TPS Appl	1	ET-61 & Up
80971048431		Fairing Assembly, LH2 Cable Tray	1	ET-61 & Up	
80971048490		Gap Closure, TPS Appl, LH2 C/T	10 14	ET-61 thru 66 ET-67 & Up	
80971009403		Gap Closure, TPS Appl, LH2 C/T	2	ET-61 thru 6	
80971048425		Cable Tray Cover Assy, TPS Appl	12 15	ET-61 thru 66 ET-67 & Up	
80971028423	Segment Assembly, TPS Appl	3	ET-61 thru 66		

REMARKS: The cable tray SLA applications are grouped as the failure mode, causes and effects are the same.

CRITICAL ITEMS LIST (CIL)
CONTINUATION SHEET

SYSTEM: Thermal Protection System
SUBSYSTEM: Components
FMEA ITEM CODE(S): 5.8.9.1, 5.8.10.1

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RATIONALE FOR RETENTION

STP1506, 1509, 1510, 1520, 1521, 1530, 1531, 3001 and 3003 are applicable to these FMEA Item Codes. See Page 1 for Retention Rationale specified by these STP's. The following additional Retention Rationale is also applicable to these FMEA Item Codes:

DESIGN:

No additional Rationale for Retention is applicable.

TEST:

The Cable Tray related SLA Applications are certified. Reference HCS's MMC-ET-TM08-L-T010 and T505. Refer to the HCS(s) for effectivity data applicable to specific part numbers and material type. TPS applications for the ET Camera are certified per COQ MMC-ET-TM06-127. |

INSPECTION:

No additional Rationale for Retention is applicable for FMEA Item Code 5.8.10.1 |

Launch Site: (FMEA Item Code Code 5.8.9.1 only) |

B: Inspect adhesive thickness per STP1510 (Effectivity ET-115). |

B: Verify density and tensile tests per STP1510 (Effectivity ET-115). |

B: Verify TPS thickness and configuration per engineering drawing (Effectivity ET-115). |

FAILURE HISTORY:

Current data on test failures, unexplained anomalies and other failures experienced during ground processing activity can be found in the PRACA data base.