IPC-WP-116

Guidance for the Development and Implementation of a Foreign Object Debris (FOD) Control Plan

Developed by the Wire Harness Design Task Group (7-31k) and IPC-HDBK-620 Handbook Task Group (7-31h) of the Product Assurance Committee (7-30) of IPC

Users of this publication are encouraged to participate in the development of future revisions.

Contact:

IPC

Table of Contents

Guidance for the Development and Implementation of a Foreign Object Debris (FOD) Control Plan

TECHNICAL BACKGROUND

Most Foreign Object Damage/Foreign Object Debris (FOD) issues can be attributed to poor housekeeping, facilities deterioration, improper maintenance, careless assembly, or inadequate operational practices. An effective FOD Prevention Program (Control Plan) identifies potential problems, corrects negative factors, promotes awareness, provides for effective employee training, and uses ''lessons learned'' for continual improvement. The objective of any FOD Prevention Program should always be zero FOD, to provide visibility to problem areas and trends, provide management and workers with inspection results, incident/mishap reports, and feedback of progress.

1 GENERAL REQUIREMENTS (Figure 1-1)

1.1 Scope This document introduces design concepts, guidelines, procedures, practices, process attributes, and recommendations for the control and mitigation of performance and reliability risks associated with the introduction of Foreign Object Debris (FOD) in electrical and electronic (E/E) assemblies, including optical and metallic cable and wiring harness assemblies, and elements thereof.

Figure 1-1 Foreign Object Debris (FOD) Logo

1.2 Purpose The intent of this document is to provide guidance and a template for the development and implementation of a Foreign Object Debris (FOD) Control Plan.

For purposes of this document:

- The Designer is the design agent for the User.
- The User is the individual, organization, company, contractually designated authority, or agency responsible for the procurement or design of electrical/electronic/electromechanical (EEE) hardware, and having the authority to define the class of equipment and any variation or restrictions to the requirements of this document (i.e., the originator/custodian of the contract detailing these requirements). The User is considered the Design Authority.
- The Supplier is considered the individual, organization or company which provides the Manufacturer (assembler) components (electrical, electronic, electromechanical, mechanical, printed boards, etc.) and/or materials (solder, flux, cleaning agents, etc.).
- The Manufacturer is considered the entity that provides a service or product to the User.

1.3 Applicability This document is targeted for control of Foreign Object Debris (FOD) in areas where both critical and complex work is performed, and to operations involved with designing, developing, manufacturing, assembling, testing, operating, repairing, modifying, refurbishing, and maintaining Class 3 (or higher) hardware to the User specified cleanliness level.

a. The design concepts, guidelines, and procedures presented in this document are for guidance ONLY, and **are not** requirements. As such, the use of the words ''**must**,'' ''**should**'' and ''**shall**'' (and derivations thereof) have no special meaning in this document, and they **do not** indicate a binding criterion.

b. This document **is not** binding, unless separately and specifically included by the applicable contract, approved drawing(s), or purchase order.

1.4 Commercial Off-The-Shelf (COTS) This document **does not** apply to Commercial-Off-The-Shelf (COTS) items. Designers considering the use of COTS hardware for applications described above **are** responsible for identifying and managing risks associated with hardware that was built without a control plan to control and/or reduce the introduction of Foreign Object Debris (FOD) in electrical and electronic (E/E) assemblies, including optical and metallic cable and wiring harness assemblies, and elements thereof.