

# HED<sup>®</sup> ES#400 Wire And Cable Harness Assembly Standard

## 1.0) Purpose

This document specifies the required wire/cable harness manufacturing, testing, and quality standards.

In the event of requirement conflict, the following is the order of requirement precedence from highest (1) to lowest (6):

- 1) HED<sup>®</sup> Purchase Order
- 2) HED<sup>®</sup> wire/cable harness assembly print (i.e., DWG/BOM)
- 3) ES#400 (this document)
- 4) Connector Manufacturer's Specification
- 5) SAE J1128
- 6) IPC/WHMA-A-620A 2006 standard

## 2.0) Standards Description

2.1 The Supplier's wire/cable harness manufacturing, testing, and quality processes shall conform to IPC/WHMA-A-620A 2006.

2.2 All wires shall be manufactured and conform to SAE J1128 spec and wire color chart.

## 3.0) Testing Requirements

3.1 The Supplier shall perform the following testing for all wire harnesses.

3.1.1 Electrical Test Methods – Continuity shall use IPC/WHMA-A-620A Section 19.5.1 Table 19-2 Class 3.

3.1.2 Electrical Test Methods – Shorts shall use IPC/WHMA-A-620A Section 19.5.2 Table 19-3 Class 2.

3.1.3 Measure overall length of cable harness as specified by the HED<sup>®</sup> wire/cable harness assembly print which invokes this document.

3.2 The Supplier shall perform the following sample testing; at a minimum one sample is tested per production run.

3.2.1 Mechanical Test Methods – Pull force test shall use IPC/WHMA-A-620A Section 19.7.2.1 Table 19-11 Class 3 and Table 19-12.

## 4.0) Connector Requirements

4.1 All connector assemblies shall be installed per the connector's manufacturer specifications.

## 5.0) Documentation Requirements

5.1 A Certificate of Compliance shall accompany each **shipment**.

5.2 Supplier shall fill out an HED<sup>®</sup> approved Certificate of Compliance form and return a signed copy with each wire/cable harness shipment.

5.3 The Supplier may use the attached Certificate of Compliance form (see page 2), or submit an equivalent form to the HED<sup>®</sup> Buyer for approval.

## 6.0) Revision History

Rev.	Date	Sections Affected / Description
A	12/27/08	Initial release.
B	04/21/10	Complete rewrite.
C	06/24/10	Changed "harness" to "shipment" in Documentation Requirements section, and added "Wire/Cable Harness Qty" to C of C.

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## HED<sup>®</sup> Supplier Requirements ES#400 CERTIFICATE OF COMPLIANCE

<b>Supplier Name</b>	
<b>Representative Name</b>	
<b>Representative Address</b>	
<b>Representative Phone</b>	
<b>Representative Fax</b>	
<b>Representative E-Mail</b>	

<b>Wire/Cable Harness P/N</b>	
<b>Wire/Cable Harness Qty</b>	
<b>Wire/Cable Harness Rev</b>	
<b>HED<sup>®</sup> PO Number</b>	
<b>Serial Number(s)</b>	

This is to certify that the above specified wire/cable harness assemblies conform to the HED<sup>®</sup> ES#400 Supplier Requirements.

### Supplier Quality Representative Certification

<b>Printed Name</b>	
<b>Signature</b>	
<b>Date</b>	