

Attachment No. 1

Minutes of the CE-2.1 Subcommittee on Test Procedures 17 – 18 October 2005 Memphis, TN

Subcommittee Chair Carl Fritz welcomed everyone, and said that the meeting would be conducted following the published agenda. It was reported that former CE-2.1 subcommittee chair Bill Peverill has resigned his position, but plan to continue as a member, reviewing and voting on documents.

1. The minutes of the 16 – 17 May 2005 meeting in New Orleans, LA was approved. Moved by John Healey and seconded by Ralph Antonelli.

2. TEST PROCEDURE PROJECTS (BY PROJECT NUMBER)

A. SP-4942-1, TP-60, General Methods for Porosity Testing (John Healy)

- The following approved ballot comments were received from Molex dated 19 July 2005:

Page 3, Paragraph 2.1.2.1 "N/m" should be "N/m²".

Agreed.

Page 5, Paragraph 2.2.1.1 "+/-" did not come out right.

Agreed

Page 10, Paragraph 4.1.1.7 "10 to 15 minutes," s/b "30 to 60 minutes" to correlate with ISO standards.

John Healey recommended a time of 30 ± 5 minutes to comply with ASTM and IPC. The member agreed to this recommendation.

- The following rejected ballot was received from Max Peel dated 20 July 2005:

Par. 4.1.1: Delete in the second sentence "of 0.76 micrometer (30 microinches) thickness or greater"

Reasons. This is counter to the basic purpose of the test. This test was created to detect porosity in any Au/Ni system regardless of thickness. The statement as currently in the document would exclude any evaluation of gold thickness less than 30 microinches where there is concern about porosity particularly with the use of gold flash contacts and thin golds now coming into the US from offshore. This concern has been expressed by several OEM's especially when the applications involve degrading environments which commonly exists. To mask this as a potential problem would be a disservice to industry in general. This is not to say that if one wants to allow a porous surface to exist, they can either ignore the TP or spell out the allowed porosity in their own specs.

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Revise clause 4.1.1 as follows:

FROM:

4.1.1 Method 1, nitric acid vapor

RECOMMENDED APPLICATIONS: gold or gold alloys. Valid for gold or gold alloy (75% or more of gold) surfaces of 0.76 micrometer (30 microinches) thickness or greater applied to the nickel or nickel base alloy contacts. This method not valid for underplates that are inert to nitric acid vapors (e.g., 65-35 tin nickel). This method shall not be used for less noble platings like palladium or palladium-nickel alloys.

TO:

4.1.1 Method 1, nitric acid vapor

RECOMMENDED APPLICATIONS: gold or gold alloys. Valid for gold or gold alloy (75% or more of gold) surfaces applied to the nickel or nickel base alloy contacts. Thin gold or gold alloy surfaces, less than 0.76 micrometer (30 microinches), may be tested even though they are inherently porous. This method not valid for underplates that are inert to nitric acid vapors (e.g., 65-35 tin nickel). This method shall not be used for less noble platings like palladium or palladium-nickel alloys.

In addition to the submitted comments there were 6 approved ballot received by the ballot expiration date of 22 July 2005. It moved by John Healey and seconded by Alan Davis to make the changes noted and recirculate on a second SP ballot with the changes highlighted. The motion was unanimously approved.

B. PN-4945, TP-29, Contact Retention (Max Peel)

Max Peel has agreed to take on this project. He has also requested to change the rate of force application from lb per minute to inches per minute, unless other wise specified in the referencing document. It was moved by John Healey and seconded by Dave Bouzek that Max Peel revise the standard to allow a second method that tests to failure and to change the rate of force application and send out on letter ballot. The motion was unanimously approved.

The following is a correction included by the CE-2.1 subcommittee chairman after the meeting: This project was incorrectly listed as a letter ballot. It was noted in the June 2001 minutes that this standard was approved for SP ballot. A SP ballot was issued on 19 July 2001 with an expiration date of 19 September 2001. Issues related to that ballot were resolved and action for a second SP ballot should have been made at this meeting instead of a letter ballot. Carl Fritz

C. PN-4943, TP-65, MFG (Max Peel)

Carl Fritz reported that a revision being prepared. This project has previously been approved to go out directly on SP ballot.

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D. PN-4981, TP-70B, Temperature Rise Versus Current (Max Peel)

It was reported that a letter ballot was issued 24 Aug 05 with an expiration date of 26 Sep 05. As of 4 October Max Peel has received 5 approved ballots and no comments. He has requested to move to SP at the October 2005 EIA CE-2.0 meeting. It was moved by Ralph Antonelli and seconded by Dave Bouzek that the standard be sent out on SP ballot. The motion was unanimously approved.

E. SP-5061, TP-12A, Restricted Entry (Jeff Toran)**

Carl Fritz reported that this standard was published June 2005.

F. SP-5064, TP-110, Thermal Cycling (Max Peel)

It was approved to incorporate comments received from Dave Bouzek and Jeff Toran. In addition it was requested that the default conditions should be compatible with what is in the thermal cycling as specified in EIA-364-1000.01 and the proposed compliant pin test sequence standards. It was moved by John Healey and seconded by Ralph Antonelli that the revised standard be sent out on second SP ballot. The motion was unanimously approved.

G. SP-5065, TP-11B, Resistance to Solvents (Max Peel)

Carl Fritz reported that this standard was published June 2005.

H. SP-5071, TP-48A, Metallic Coating Thickness (Jeff Toran)**

Carl Fritz reported that the SP ballot expired 19 September 2005. There were 9 approved ballots received and no comments. It was moved by Ralph Antonelli and seconded by Alan Davis to send the standard to EIA for EDEC ballot. It was also requested that the front cover page containing the superseding information be placed on the ECA web site of publicly available documents. The motion was unanimously approved.

I. SP-5083, TP- 5, 7, 8, 24, 25, 27, 37, 40, 44, 79, 85, 87, 88, 93, 94, 97, 98 (J. Toran)**

Carl Fritz reported that there were 5 approved ballots received and no comments by the ballot expiration date of 2 May 2005. It was previously unanimously moved and approved to send a letter to EIA to process the subject standards as reaffirmed if there were no rejections. It was also requested that the subject standards reflect the reaffirmation date on the publicly available standards that are on the ECA web site.

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J. SP-5084, TP-36B, Determination of Gas-Tight characteristics Test for Electrical Connectors and or Contact Systems (Jeff Toran)**

Carl Fritz reported that this standard was sent to EIA for 5-year review and the SP ballot expired on 29 September 2005. There were 8 approved ballots and one rejection received from Bill Upstone as follows:

- The following rejected ballot was received from Bill Upstone dated 12 August 2005:

Paragraph 1.1:

There are several issues with this paragraph.

- 1) The cautionary note does not provide the same degree of warning as revision A.
- 2) A portion of the scope is mixed in with the limited cautionary note.
- 3) It states it “utilizes nitric acid vapors and is considered the more severe of the two.” More severe than the two what? I suggest paragraph 1.1 and the cautionary note be rewritten as follows:

1.1 Scope

The following paragraph is unchanged:

This procedure is to determine the integrity of contacting surfaces (at the mating and/or termination areas) by assessment of the gas tight characteristics of the contacting surfaces. The gas tight characteristic simulates the ability of the contacting surfaces to prevent harsh environments from penetrating between them and forming oxides and/or films that will degrade electrical performance.

The following paragraph was Revision B cautionary note:

The method, as described herein, utilizes nitric acid vapors. It is recommended for contacts and/or connector (socket) assemblies directly exposed to outside environments or those that are in uncontrolled environments (internal or external to electronic packaging).

The following is the same as in Revision A:

CAUTION—This procedure may involve hazardous materials, operations and equipment. This procedure does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of the standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

Carl Fritz noted that this cautionary note is now part of the boilerplate of every standard and listed in the NOTICE on the inside cover of this standard

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It was agreed to revise clause 1.1 to the following:

1.1 Scope

This procedure is to determine the integrity of contacting surfaces (at the mating and/or termination areas) by assessment of the gas tight characteristics of the contacting surfaces. The gas tight characteristic simulates the ability of the contacting surfaces to prevent harsh environments from penetrating between them and forming oxides and/or films that will degrade electrical performance. It is recommended for contacts and/or connector (socket) assemblies directly exposed to outside environments or those that are in uncontrolled environments (internal or external to electronic packaging).

CAUTION — The method, as described herein, utilizes nitric acid vapors. This procedure may involve hazardous materials, operations and equipment. This procedure does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of the standard to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

Paragraph 4.4, Cautionary note:

Change from: All exposure shall be performed in and exhaust hood.

To: All exposure shall be performed under and exhaust hood.

Reason: Exhaust hood do not necessarily contain or enclose the item under test.

It was agreed to accept this change.

Paragraph 6, Test documentation:

Add the following to the list of details to be indicated on the data sheet:

- Sample class (see table 1)
- Failure criteria
- Test current and open circuit voltage (if different than specified in EIA-364-23)

Reason: This information is required to demonstrate compliance with the details specified in paragraph 5.

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Carl Fritz noted that clause 5.2, 5.3 and 5.4 already contained this information in the details to be specified. Clause 6 only list items other than indicated in clause 5 that are already required to be included in the report.

Carl Fritz indicated that he objected to boiler plate statement that was under clause 6 that indicated that all the items in clause 5 be included in clause 6. The rational was that the documentation should only contain what is required to be reported and not include things that are required in the referencing document. The committee voted 4 to 1 to retain the statement as it now is, with Carl Fritz objecting.

However, there was further discussion to remove the clause 5.4 "Failure criteria" from clause 5 since the test facility does not need the failure criteria to run the test, nor does it report pass-fail. The test facility reports the results of the test. The requestor is responsible for determining if his requirements were met. The committee voted 4 to 1 in favor of deleting clause 5.4 "failure criteria, with Alan Davis objecting to this change.

It was moved by John Healey and seconded by Ralph Antonelli to revised the standard based on the review at this meeting and circulate on a second SP ballot. The motion was unanimously approved.

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K. SP-5085, TP-46B, Microsecond Discontinuity Test Procedure for Electrical Connectors, Contacts and Sockets (Jeff Toran)**

- The following rejected ballot was received from Bill Upstone dated 29 July 2005:
Clause 2.1.2 change power supply regulation response time from “1.1 microseconds” to “0.1 microseconds” (reason typo).
Clause 4.3 change last word in clause from “occur” to “recur” (reason typo).
Clause 5.2 change word “Specification” to “Specimen” (reason typo”).

- The following approved ballot with comments was received from Bob Druckenmiller dated 9 September 2005:

Clause 5.4 change as follows: Add “4.1 and” before 4.2. Reason: clause 4.1 also specifies the number of contacts to be tested.

In addition to the comments from Bill Upstone and Bob Druckenmiller there were 7 approved ballot received by the ballot expiration date of 28 September 2005. The members present viewed the rejection from Bill Upstone as editorial. It was moved by Alan Davis and seconded by Dave Bouzek to approve the editorial comments and send to EIA for EDEC ballot. The motion was unanimously approved. It was noted that the comments from Bill Upstone should not have been cause for rejection.

It was further noted that it was previously approved to place this standard on the ECA web site of publicly available documents in addition to EIA-364-87 (Nanosecond Event Detection) on behalf of the military, as previously requested by Max Peel.

L. SP-5086, TP-89, Test Procedures for Electrical Connectors for Space Applications (Jeff Toran)**

- The following rejected ballot was received from Bill Upstone dated 2 August 2005:

NASA NHB 8060.1C has been superseded by NASA-STD-6001 dated 9 February 1998. The listed test numbers remain the same in the new document.

In addition to the rejection from Bill Upstone there were 9 approved ballot received by the ballot expiration date of 3 October 2005. The members present viewed the rejection from Bill Upstone as editorial. It was moved by John Healey and seconded by Ralph Antonelli to approve the editorial comment and send to EIA for EDEC ballot. It was also requested that the front cover page containing the superseding information be placed on the ECA web site of publicly available documents. The motion was unanimously approved.

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M. SP-5089, TP-55, Current Cycling (Bob Druckenmiller)**

- The following rejected ballot was received from Max Peel dated 8 August 2005:
 - 1) Par.3.2 - There are several problems associated with this paragraph and associated sub paragraphs.
 - a) These paragraphs reference crimp termination's only. This test is now being used for soldered, compliant pin and IDC termination's as well. Connectors with the latter termination's are being tested more often than crimp particularly in backplanes which use power planes for power distribution. High density connectors with power modules are particularly popular with current levels up to 40 amps (sometimes more). This paragraph has to be expanded to include the above application.
 - b) Par.3.2.2- The 18 inch length between contacts seems excessive for most applications. This should be deleted leaving the EIA 364, TP70 reference in place.
 - c) Par.3.2.4- This may be acceptable for crimp applications but it's not practical for solder termination or pcb type connector since some soldering is always required. Cleaning is always required to remove residual flux.
 - d) There appears to be a conflict between Par.3.2.3 and 4.1. Par.3.2.3 makes it optional (contingent on the detail specification). Par.4.1 makes it mandatory. This should be resolved.
 - 2) Par.4 - These paragraphs refer to "wired" samples. A strict interpretation would indicate crimp or IDC type termination's. These paragraphs should be changed using the term "the terminated sample---".
 - 3) Par.4.4 and 4.5 are conflicting or ambiguous at best. What do they mean and how do they interact?
 - 4) Par.4.6 refers to Table 2 but does not refer to Table 1. I have no problem with Table 1 but somewhere there has to be a reference to it.
 - 5) I do have a problem with Table 2 and take strong objection to it as it could lead to undertesting and obtaining false positive results. I would recommend substituting the following paragraph.

"The test current to be used shall be characterized to determine the time for thermal equilibrium to be achieved when the test sample is energized and de-energized."

The cycle time shall include the above mentioned times plus a minimum of 15 minutes minimum of operation at the energized side and 5 minutes minimum at the de-energized side after equilibrium has been achieved.

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Said cycle time and data shall be included in the test report.

In essence, this TP is unacceptable in its present form and should be rewritten.

- The following rejected ballot was received from John Healey by e-mail on 12 August 2005:

Here's my ballot. I cannot approve this standard. To make it simple, I have the same reservations as Max Peel previously documented concerning the omission of IDC, soldered, and compliant pin terminations.

- The following favorable ballot with comments was received from Bill Upstone:

Recommend the following technical change to paragraph 3.2.3:

From: Voltage connections for resistance or thermocouples, or both, for temperature readings may also be utilized if specified in the referencing document.

To: Unless otherwise specified in the referencing document, voltage connections for resistance measurements shall be made as specified in EIA-364-06. Wire of minimum practical diameter shall be used for voltage connections to avoid heat sinking the specimens. If specified in the referencing document, thermocouples may also be attached for temperature readings. Fine wire thermocouples are recommended to avoid heat sinking the specimens.

Reason: As presently written, this paragraph implies that one could make voltage connections OR attach thermocouples for this test. It also incorrectly implies that both voltage connections and thermocouples are required for temperature readings. Revising as suggested makes it clear that voltage connections are required to make the resistance measurements specified in paragraph 4.1 and thermocouples may be used as specified for measuring temperature. It also provides some guidance on making voltage connections and attaching thermocouples to avoid heat sinking the specimen.

<p>In addition to the rejections from Max Peel, John Healey and the favorable ballot with comments from Bill Upstone there were 7 approved ballot received by the ballot expiration date of 16 August 2005. After review of the comments it was moved by John Healey and seconded by Ralph Antonelli to revise the standard based on the comments and recirculate on a second SP ballot. The motion was unanimously approved.</p>

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N. SP-5103, EIA-364-10D, Fluid Immersion (Carl Fritz)

- The following approved ballot with comments was received from Bob Druckenmiller dated 9 September 2005:

Test condition K, change “room ambient” to “25” (25° C). Reason: 25° C appears to be used in the table for other fluids being tested at “ambient temperature”. If you leave “room temperature” a test could be run at whatever temperature the “room” is at. For example, tested in a non-heated area in the winter time could be below 0° C, or in a non-airconditioned area in the summer temperature could exceed 40° C.

Add a note 2 to table 1 and reference it under “room ambient” as follows:

2 Temperature, 15 °C to 35 °C; atmospheric pressure, 650 millimeters of mercury to 800 millimeters of mercury; relative humidity, 20% to 80%.

In addition to the comment from Bob Druckenmiller there were 8 approved ballots received. It was moved by John Healey and seconded by Ralph Antonelli to make the submitted change for clarification and send to EIA for EDEC ballot. The motion was unanimously approved.

O. SP-5105, EIA-364-23B, Low Level Contact Resistance (Carl Fritz for Contech Research)

There were 8 approved ballots received and no rejections by the ballot expiration date of 20 September 2005. It was moved by Ralph Antonelli and seconded by John Healey to send the standard to EIA for EDEC ballot. The motion was unanimously approved.

P. SP-5106, EIA-364-06B, Contact Resistance (Carl Fritz for Contech Research)

There were 9 approved ballots received and no rejections by the ballot expiration date of 11 September 2005. It was moved by Ralph Antonelli and seconded by John Healey to send the standard to EIA for EDEC ballot. The motion was unanimously approved.

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Q. SP-5107, EIA-364-1002, Compliant Pin Contact Document (Max Peel)

- The following rejected ballot was received from John Healey dated 10 October 2005:

Here's my ballot. I cannot approve this test standard (first attachment). For connector assemblies, I do not understand why appropriate test sequences in EIA-364-1000.01 cannot be used. This standard does not include durability (pre-conditioning), temperature life (pre-conditioning), thermal disturbance, or reseating in the test sequences. It references a different vibration test procedure, a different thermal shock test procedure, a different temperature life test procedure, and it calls for humidity cycling rather than cyclic temperature and humidity. Also, there is no thermal cycling, unless thermal shock is thought to fulfill this requirement. Furthermore, I'm not clear on the meaning of hole conditioning and the intent of note 3 of the flow diagram. Where is full connector rework covered? Why is EIA-364-23 not referenced for measuring compliant pin resistance?

- The following was received from Frank Ruffino via e-mail on 10 October 2005 with regard to John Healey's comment.

I thought that this was a letter ballot. I do not think it is ready for SP. As John has indicated, there is much to discuss within the committee first. I'm not sure if Molex sent in a Ballot. If we haven't we would also vote no. We have a world wide review system that I suspect is not working.

It was reported that there were 6 approvals and one rejection from John Healey as well as the above e-mail from Frank Ruffino received by the ballot expiration date of 10 October 2005. Carl Fritz indicated the Max Peel has discussed the changes with John Healey and will revise the standard based on his comments. It was moved by Alan Davis and seconded by John Healey to revise the standard and circulate on a second SP ballot. It was also moved and approved to send to EIA for EDEC ballot if there are no rejections or technical comments received on the second SP ballot. The motion was unanimously approved.

R. SP-5108, TP- 2, 3, 9, 13, 14, 26, 28, 35, 38, 42, 50, 54, 95, 99, 100, 102 and 103 (C. Fritz)**

It was reported that there were 8 approved ballots and no comments received by the ballot expiration date of 11 September 2005. It was moved by John Healey and seconded by Ralph Antonelli to send the standards to EIA for EDEC ballot for reaffirmation. It was also requested that the subject standards reflect the reaffirmation date on the publicly available standards that are on the ECA web site. The motion was unanimously approved.

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S. SP-5109, TP-18B, Visual Inspection (Carl Fritz)**

- The following rejected ballot was received from Max Peel dated 13 September 2005:

The following are my reasons for the negative ballot.

1) Paragraph 2.1.2: Add "When specified" to the beginning of the sentence.

Reason: See reason in Comment No. 3.

Comment approved.

2) Paragraph 4.1: There is no definition of "workmanship marking or finish". For example what does the term "finish" mean? Is it the surface finish of the contact or is it the plating system? Or the aesthetic luster of the plastic? Marking - do we look to see if it's legible? In the right location? Right part no?

Possible rewording of second clause in 4.1 is as follows:

Visual inspection such as workmanship, marking, finish, etc. shall be as specified in the referencing document.

After discussion it was agreed that the referencing document needs to specify what specific workmanship, finish and marking requirements that have to be addressed. Possibly such a statement can be included in clause 5.

3) Paragraph 4.2.1: Change the first sentence to read "When specified the initial dimensional inspection shall be performed".

Delete 2nd sentence

3rd sentence OK

Delete 4th sentence.

Reason: To clarify the first part of the paragraph. The implication that it is "generally performed" is not true except for military qualification which are very specific in their requirements. Very rarely is it included in public sector specs.

Delete the final two statements and substitute the following: "When required, a drawing shall be included in the detail specification and the dimensions to be inspected shall be indicated."

Delete 4.2.2 in its entirety.

Reason: to be more specific and to establish the dimensions to be inspected.

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Replace all 4.2.1 and 4.2.2 under clause 4.2 with the following:

When specified dimensional inspection shall be performed. Representative samples from the lots of specimens shall be randomly selected for the dimensional inspection. When required, a drawing shall be included in the referencing document and the dimensions to be inspected shall be indicated.

4) Paragraph 5.4: Delete

Reason: This paragraph has nothing to do with visual or dimensional inspection. Physical testing of materials, etc. is beyond the scope of this test procedure and requires separate documentation if required.

Agreed

It was reported that there were 6 approved ballots and one rejection received from Max Peel. The ballot expiration date is 18 October 2005. It was moved by John Healey and seconded by Alan Davis that the standard be revised and be circulated on a second SP ballot with the discussed changes, if no additional comments are received. The motion was unanimously approved.

T. SP-5110, TP-15A, Contact Strength (Carl Fritz)**

- The following approved ballot with comment was received from Dave Bouzek dated Aug. 18, 2005

Page 1, paragraph 3.1 should read:

“A test specimen shall consist of a pin contact, unless otherwise specified in the referencing document”.

Existing paragraph reads: “A test specimen shall consist of a pin contact, unless than otherwise specified in the referencing document”)

It was reported that there were 7 approved ballots and one approved ballot with comment from Dave Bouzek. The ballot expiration date is 18 October 2005. The editorial comment from Dave Bouzek was accepted. It was moved by Ralph Antonelli and seconded by Alan Davis to make the editorial change and send to EIA for EDEC ballot, if no other comments are received by the ballot expiration date.

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U. SP-5111, TP-59A, Low Temperature (Carl Fritz)**

- The following rejected ballot with comment was received from Bill Upstone (ITT Cannon) dated 22 August 2005.

1) Paragraph immediately following 2.1.2 should be identified as 2.1.3 (as shown)

Change from: The chamber size or capacity

Change to: 2.1.3 The chamber size or capacity

Reason: Editorial

Agreed

2) Paragraph 3.1

Change from: A specimen shall consist of mated assembly, ...

Change to: A specimen shall consist of a mated assembly, ...

Reason: Editorial / grammar

Agreed

3) Paragraph 4.2, add paragraph heading as follows:

Change from: 4.2 The specimen shall ...

Change to: 4.2 Test duration

The specimen shall ...

Reason Editorial change to be consistent with Paragraph 4.1

Agreed

4) Between paragraphs 4.3.4 and 4.3.5, add the following and renumber subsequent paragraphs:

4.3.5 At the end of this period, the electrical load (if used) shall be disconnected, the specimens shall be left in the chamber and the temperature shall be gradually increased to room ambient temperature. The rate of temperature change within the chamber shall not exceed 1° C per minute, averaged over 5 minutes.

Reason: This paragraph was 3.3.6 in the previous revision of TP-59. It should be included in this revision so users understand what to do with the electrical load (if used) and how to gradually ramp the temperature to ambient conditions.

Agreed

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5) Paragraph 4.3.5

Change from: The test specimens shall be removed from the chamber.

Change to: The test specimens shall be removed from the chamber. If necessary, the specimens may be carefully shaken by hand, blotted with a towel or gently blasted with clean air to remove water droplets that may have condensed on the exterior surfaces.

Reason: Users should be given instructions on how to deal with condensation that may be on the samples. The previous release of TP-59 contained similar verbiage in Paragraph 3.3.7.

Members present agreed with the intent, however the language may need to be changed. Need to check on similar language in other standards.

- The following approved ballot with comments was received from Bob Druckenmiller dated 9 September 2005:

Add the following clause as a new one in clause 6 as follows: Test results, measurement, observation, where applicable. No reason given.

(Carl Fritz observation is: This is not required since it is already mentioned in clause 5.6, and clause 6 already indicates that it should contain all the details specified in clause 5, with any exceptions. However, Max objects to this statement from an audit perspective.)

Agreed to delete clause 5.6 and no need to reference in clause 6.

- The following rejected ballot was received from Max Peel dated 13 September 2005:

1) Paragraph 3.2:

Add to the first sentence "Unless otherwise specified." Add to the second sentence "The method of fixturing, when specified, shall be -----".

Reason: To add flexibility. In many tests, fixturing is not required or necessary. The same may be true for the first sentence as well. Without these changes, it becomes mandatory.

Agreed

2) Paragraph 4.1 and 4.2:

Both sentences imply these are the only temperatures or durations allowed. Recommend changing as follows:

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4.1 to read: "The specimens shall be subjected to the test temperature as specified in the referencing document. Tables 1 and 2 are recommended test temperatures and durations which may be specified. Paragraph 4.2 should be deleted.

Agreed to change 4.1 to the following: The specimens shall be subjected to the test temperature as specified in the referencing document. Table 1 gives recommended test temperatures that may be specified.

Agreed to change 4.2 to the following: The specimens shall be subjected to the test durations as specified in the referencing document. Table 2 gives recommended test durations that may be specified.

3) Add a caution note as follows (after Table 2)

Materials (plastic and plating systems) used in the connector system shall be rated and compatible to the test temperatures.

Comment rejected. Deemed not necessary.

4) Paragraph 4.3.3: Change the second sentence to read "Unless otherwise specified, the rate of temperature change of the chamber shall not exceed an average of 1° C per minute."

Reason: Do not know what the term "1° C per minute, averaged over 5 minutes". Also, to establish the ramp rate specifically of the chamber.

Only add: "Unless otherwise specified" shall be placed in front of the second sentence in 4.3.3

5) Paragraph 4.3.5: If there's a ramp rate from room ambient to cold, should there be a ramp rate from cold to room ambient as well?

Comment withdrawn

6) Paragraph 4.3.6: Change to read "Variable measurements shall be performed as specified after the test specimens have recovered to room ambient conditions plus 1.0 hr.

Reason: The 2.0 hr. max. may not be long enough in the event of fixture requirements or in the event heat sinks are used, etc.

Comment withdrawn

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It was reported that there were 5 approved ballots and 3 rejections from Bill Upstone, Bob Druckenmiller and Max Peel received. The ballot expiration date is 18 October 2005. It was moved by Alan Davis and seconded by John Healey to revise the standard and circulate on a second SP ballot, if no additional comments are received. It was also moved and approved to send to EIA for EDEC ballot if there are no rejections or technical comments received on the second SP ballot. The motion was unanimously approved.

V. PN-5113, TP-75, Lightning Strike (Carl Fritz)

It was reported that to date there have been 4 approved ballots and 1 abstention received. The ballot expiration date is 24 October 2005. It was moved Ralph Antonelli and seconded by Alan Davis to send to EIA for reaffirmation if no rejections are received by the ballot expiration date. The motion was unanimously approved.

** Past due for 5-year review

3. TEST PROCEDURES AWAITING PROJECT NUMBERS (BY TP NUMBER)

A. TP-17B, Temperature Life (Max Peel)

Carl Fritz reported that Max Peel is revising this standard. This project has been previously moved and approved for SP ballot.

B. TP-31B, Humidity (Max Peel)

Carl Fritz reported that Max Peel is revising this standard. This project has been previously moved and approved for SP ballot.

C. TP-32C, Thermal Shock (Max Peel)

Carl Fritz reported that Max Peel is revising this standard. This project has been previously moved and approved for SP ballot. It was also noted that efforts by Carl Fritz to obtain previously submitted comments from Frank Hungate (Deutsch) have been fruitless. The comment from Bill Upstone suggesting that the note in table 1 be changed to: "When step one consists of cryogenic immersion of specimen in liquid nitrogen, as specified in table 3, exposure time shall be as specified in table 1 or the amount of time necessary to obtain thermal stability of the test specimen." has been noted in the previous minutes.

D. TP-41C, Cable Flexing (Max Peel)

Carl Fritz reported that Max Peel is revising this standard. This project has been previously moved and approved for SP ballot.

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4. STG REPORT

STG-29-2.1 Performance Criteria (SP-5038-1, EIA-364-1000.01)-John Healy and Max Peel

There were 8 approved ballots received and no comments by the ballot expiration date of 15 August 2005. It was moved by John Healey and seconded by Ralph Antonelli to send the standard to EIA for EDEC ballot. The motion was unanimously approved.

5. OTHER BUSINESS

A. PN-3787, EIA-364-1000.02 (EIA-364-1001 new designation) Current Rating Verification Procedure (Frank Ruffino and John Healey)

No report

B. EIA-364-105, Altitude, Low Temperature (Bill Upstone)

No report. However, the project had been previously approved for letter ballot at the June 2005 meeting.

C. Review of MIL-PRF-39012 comments from the military (Ralph Antonelli)

Carl asked John Healey to ask Jay Deipenbrack to review items 7, 8 and 9. Ralph also reported that CE-4.0 is also looking at these standards.

D. Ionic contamination (John Healey)

John indicated that he was working on seeing if EIA-364-82 can detect the problem. If it does there is no need for a new standard. If not he it has been moved and approved to create a new standard and obtain a project number at the June 2005 meeting. John has also requested that anyone experiencing this type of problem to get in touch with him.

6. NEW BUSINESS

A. TP-86, Polarizing/coding key overstress and TP-92, Wire bending for insulation displacement contacts are past due for reaffirmation. It was moved by Alan Davis and seconded by John Healey to obtain a project number and send out on SP ballot for reaffirmation. The motion was unanimously approved.

Attachment No. 1

B. TP-25C, Probe damage

Carl Fritz reported that there is a need to resolve the issue of clause 4.3.2 the conflict with minimum depth in EIA-364-25 and nominal depth in MIL-STD-1344. It was determined that individual slash sheets for MIL-C-39029 specifically list the bore depth valve as a minimum dimension. Therefore the EIA-346-25C clause 4.2.2 is indeed correct in showing the “B” dimension as a minimum. The fact that MIL-STD-1344 calls this out as “nominal dimension” was incorrect. Reference MIL-C-39029 /5 for an example.

C. TP-56, Resistance to Soldering Heat

Carl Fritz reported that he had received the following note from Vince Pascucci at Tyco. I was reading EIA/ECA-364-56B, Resistance To Solder Heat and found what appears to be an error in paragraph 2.1.3.1. It states that for procedure 3, the solder pot method (representative of wave solder applications), all holes of the mounting board (PC Board) should have plated through holes. This is not correct, as it would not allow for the removal of the test specimen after the solder exposure. It seems that the spec has it backwards. The board with the plated through holes could be used for procedures 5 and 6 and that for procedure 3, it should be no circuitry or copper surfaces. This should be brought to the attention of EIA. It was moved by Alan Davis and seconded by John Healey to obtain a project number and send out on SP ballot. The motion was unanimously approved.

All actions taken by the subcommittee were moved and unanimously approved by the EIA CE-2.0 committee. The meeting adjourned at 4:39 PM on 18 October 2005.

Respectfully,

Carl Fritz, Chairman CE-2.1