

# Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: **China**

Global Technical Committee: Photovoltaic

TC Chapter Cochairs: Guangchun Zhang/ CESI, Jun Liu/CESI

Standards Staff: **Sophia Huang/SEMI China**

	Scheduled in Background Statement	Actual
Date	4/18/2017	4/18/2017
Location	Evergreen Laurel Hotel Shanghai, No.1136 Zuchongzhi Road, Pudong District, Shanghai, China	Evergreen Laurel Hotel Shanghai, No.1136 Zuchongzhi Road, Pudong District, Shanghai, China
Reason for Change of Date and/or Location (if changed)		

Note: See Regulations ¶ 9.5 Exception for allowable reason to change.

## I. Document Number and Title

5926	<b>NEW STANDARD: TEST METHOD FOR BENDING PROPERTY OF FLEXIBLE THIN FILM PV MODULES</b>
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## II. Tally

**Voting Tally: As-cast tally after close of voting period**

Note: A minimum of 60% of the Voting Interests that have TC Members within the global technical committee that issued the Letter Ballot must return Votes. (Regulations ¶ 9.7.1.1)

Voting Tally (with example values):

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	87	÷	145	=	60.0%	≥60%
Intercommittee Ballot	17					
Voting Interest Reject(s)	0		Total Voters with Rejects		0	
Voting Interest Accept(s)	51					

Note: See Regulations § 3.2.1 for definition of Voting Interest.

## III. Rejects None

## IV. Other Technical Issues

None

## V. Comments

### V- (i) Voters' Comments

Commenter 1 ([George Kelly/ BP Solar](#)) - Comment 1

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	The scope needs to remain clear to avoid conflict with work already in progress in IEC TC82.	
Action	<b>The TC Chapter agreed to do one of the following actions.</b>	
	*No motion is required in this step.	
	<input type="checkbox"/>	Already addressed by Commenter #, Comment #
	<input checked="" type="checkbox"/>	No further action was taken by the TC Chapter. <a href="#">See Discussion below.</a>
	<input type="checkbox"/>	Refer to the TF for more consideration.
	<input type="checkbox"/>	New Business
<input type="checkbox"/>	Editorial Change	
Discussion	<p><b>TF:</b> Thank you for your comment on standard 5926 "Test Method for Bending Property of Flexible Thin Film PV Modules". You commented that "This duplicates work already in progress in IEC".</p> <p>But even we focus on IEC standard and the updates, we are still not sure which IEC standard the content of 5926 standard overlaps with. Is that IEC 61215 Part 1-5 "Special requirements for testing of flexible terrestrial photovoltaic (PV) modules" ? If not, please tell us a specific name.Thanks a lot!</p> <p><b>George Kelly:</b> As secretary of TC82, my primary concern is that we do not waste valuable resources by writing standards that are overlapping or conflicting. This view has been supported in the recent meeting with TC82 Michio Kondo and Mr. James Amano of SEMI.</p> <p>You are correct that the requirements for flexible modules were planned to be addressed in IEC 61215-1-5; but after recent discussions in WG2 it has been decided to include these in a more general amendment to the entire 61215 series.</p> <p>However, the bending test proposed for 61215 is not very detailed, and it seems that you do have a reasonable technical approach to writing a Test Method that could complement the TC82 project that Mr. Paul Robusto is leading.</p> <p>Hi Paul,</p> <p>You may already be aware of the effort to coordinate activities between IEC and SEMI so we don't develop duplicate or conflicting standards. I think it might be helpful if you or somebody else from the project team could discuss details with the experts at Hanergy.</p> <p><b>TF:</b> We asked Paul Robusto about the content of the IEC 61215-1-5, the differences in the content of two standard decided the application object is different, as follows:</p>	

	<p>1、 In IEC 61215-1-5 the bend test recommended relies on manufacturers recommended bend radius, and our standard rules on Specific bending parameters, belong to stricter project.</p> <p>2、 IEC 61215-1-5 is more industry representative, all products are need to meet the test method, and our approach is given to determine test requirements for different products, for more specific application object.</p> <p><b>George Kelly:</b> I have reviewed the details of your proposal and compared them to the work underway in IEC TC82. After discussion with the relevant experts, we are satisfied that the scope of both standards are sufficiently clear to avoid any confusion in their proper application.</p> <p>So I am happy to change my negative vote; please let me know if there is anything else I need to do.</p>
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**Committer 2 (Bengt Jäckel, Underwriters Laboratories Inc.) - Comment 1**

<b>Comment</b>	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	please ensure consistency with the work that is done in IEC. There is a project working on flexible modules led by Paul Robusto.	
<b>Action</b>	<b>The TC Chapter agreed to do one of the following actions.</b>	
	*No motion is required in this step.	
	<input type="checkbox"/>	Already addressed by Committer #, Comment #
	<input checked="" type="checkbox"/>	No further action was taken by the TC Chapter. <a href="#">See Discussion below.</a>
	<input type="checkbox"/>	Refer to the TF for more consideration.
	<input type="checkbox"/>	New Business
<input type="checkbox"/>	Editorial Change	
<b>Discussion</b>	<p><b>TF:</b> Dear Bengt. Jaeckel,</p> <p>Thank you for your comment on standard 5926 "Test Method for Bending Property of Flexible Thin Film PV Modules". You commented that " please ensure consistency with the work that is done in IEC. There is a project working on flexible modules led by Paul Robusto."</p> <p>we have discussed this problem with Paul Robusto, George Kelly and 近藤道雄, details see below, the scope of both standards are sufficiently clear to avoid any confusion in their proper application .</p> <p>I hope you can satisfied with my answer, thanks a lot.</p> <p><b>Bengt Jäckel :</b> If George/Paul are OK. That's fine with me. I think it's important to have an open discussion and in any case avoid duplications. And that will still remain my concern. But OK. Please proceed.</p>	

**Commenter 3 (Larry D. Hartsough / U.A. Associates) - Comment 1**

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	The report section leaves room for a lot of variation in the content and format of what is reported. This will make it very difficult to compare test results.	
Action	<b>The TC Chapter agreed to do one of the following actions.</b>	
	*No motion is required in this step.	
	<input type="checkbox"/>	Already addressed by Commenter #, Comment #
	<input checked="" type="checkbox"/>	No further action was taken by the TC Chapter. <a href="#">See Discussion below.</a>
	<input type="checkbox"/>	Refer to the TF for more consideration.
	<input type="checkbox"/>	New Business
	<input type="checkbox"/>	Editorial Change
Discussion	<p>TF: Thank you for your comment on standard 5926 "Test Method for Bending Property of Flexible Thin Film PV Modules". You commented that " The report section leaves room for a lot of variation in the content and format of what is reported. This will make it very difficult to compare test results." Due to the Spring Festival holiday, reply to you now, I'm so sorry. We modified the report part carefully: Do you have any better suggestions? looking forward to your reply <a href="#">Larry D. Hartsough</a>: I did not keep a copy of 5926 and do not remember how many types of test or what range of test condition variables is allowed. Some TEST METHOD standards do add an Appendix with a detailed test report form that, for instance, has a list for each test listing the test parameters and places to record their value for each test. This helps to assure more uniformity of testing and reporting, enhancing comparisons. TF: I am sorry that I forgot to add attachments. A detailed test report form is not defined, We tend to give freedom in the form of the laboratory report, But the content of the report is detailed.</p>	

**Commenter 4 (Rafael Vargas-Bernal / Instituto Tecnológico Superior de Irapuato) - Comment 1**

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	In subsection 6.4, '170mm/s' separate values of units. In Subsection 11.1.4 'testedCharacterization' must be separated.	
Action	<b>The TC Chapter agreed to do one of the following actions.</b>	
	*No motion is required in this step.	
	<input type="checkbox"/>	Already addressed by Commenter #, Comment #
	<input type="checkbox"/>	No further action was taken by the TC Chapter.
	<input type="checkbox"/>	Refer to the TF for more consideration.
	<input type="checkbox"/>	New Business
	<input checked="" type="checkbox"/>	Editorial Change
	Options for editorial	<p><b>Case 1: No vote in this section:</b> <b>To be included and voted on as a group in § VI. Editorial Changes Other than Those Voted on in § V.</b></p>

	change (check one)	x	<b>Case 2: Voted in this section:</b>
			Original section number and at least one full sentence are required in "FROM" and "TO" fields.
Editorial Changes	1	FROM: Section/Paragraph 6.4 170mm/s	
		TO: Section/Paragraph 6.4 170 mm/s	
		Justification (If necessary) Formatting errors, inserting space	
	2	FROM: Section/Paragraph 11.1.4 testedCharacterization	
		TO: Section/Paragraph 11.1.4 tested Characterization	
		Justification (If necessary) Formatting errors, inserting space	
Motion		I move that committee approve above editorial changes.	
Motion by/2 <sup>nd</sup> by		Xiuyun Ding (Hanergy)/Zhixin Li (Linton)	
Discussion		None	
Vote		56 Y-0 N; Motion passed	

## V-(ii) Comments Created by Handling Negative None

## VI. Editorial Changes Other than Those Voted on in § V None

## VII. Approval Conditions Check

### VII. - (i). Approval Rate

**APPROVAL CONDITION 1:** All Negatives have been discussed and were withdrawn, found not related, found not persuasive, or addressed by a technical change. (*Regulations* ¶ 9.7.1.2)

**APPROVAL CONDITION 2:** At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.7.1.3)

**Note:** If both approval conditions are not satisfied, the Document fails.

		Accepts		(Accepts + Valid Rejects)					
Approval Rate	=	51	/	51	=	100.0%		≥	90%

## VII. – (ii) Approval Level (check one)

Note: See *Regulations* § 9.7.2 for further information.

<input checked="" type="checkbox"/>	<p><b>Globally Approved (No Ratification Ballot needed):</b> The Letter Ballot meets the Letter Ballot approval conditions for the global technical committee.</p>
<input type="checkbox"/>	<p><b>Need a Ratification Ballot:</b> The Letter Ballot meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.</p>

## VIII. Safety Check

Note: See *Regulations* § 15 for further information.

<b>Motion</b>	<input checked="" type="checkbox"/>	<b>This is not a Safety Document</b> , when all safety-related information is removed, the Document is still technically sound and complete. ( <i>Regulations</i> ¶ 8.7.1)
	<input type="checkbox"/>	<b>This is a Safety Document</b> , when all safety-related information is removed, the Document is not technically sound and complete. ( <i>Regulations</i> ¶ 8.7.2)
	<input type="checkbox"/>	Safety Checklist ( <i>Regulations</i> ¶ 15.3) is complete and has been included with the Document throughout the balloting process. ( <i>Regulations</i> ¶ 15.1.2)
<b>Motion by/2<sup>nd</sup> by</b>		Xiuyun Ding (Hanergy)/Zhixin Li (Linton)
<b>Discussion</b>		None
<b>Vote</b>		56Y-0N; Motion <u>passed</u>

## IX. Intellectual Property (IP) Check

Note: This Letter Ballot may cover all or part of a Standard or Safety Guideline. This IP check applies to the entire Standard or Safety Guideline. See *Regulations* § 16 for further information.

<input checked="" type="checkbox"/>	The TC Chapter meeting chair asked those participating, if they were aware of any potentially material patented technology or copyrighted items* in the Standard or Guideline. ( <i>Regulations</i> ¶ 8.8.1)
<input checked="" type="checkbox"/>	No potentially material patented technology or reproduction of copyrighted items is known.
<b>GO TO SECTION X.</b>	

\* Note: Such potentially material patented technology or copyrighted items might have become known since the Standard or Safety Guideline was last reviewed, or might become relevant due to this Letter Ballot.

## X. Action for This Document

<b>Motion</b>	<input type="checkbox"/>	This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.
	<input checked="" type="checkbox"/>	This Document passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.
	<input type="checkbox"/>	This Document passed TC Chapter review with technical changes and with or without editorial changes and will be forwarded to the ISC A&R SC for procedural review. A Ratification Ballot will be issued to verify the technical changes.
	<input type="checkbox"/>	This Document failed TC Chapter review and will be returned to the TF for rework.
	<input type="checkbox"/>	This Document failed TC Chapter review and work will be discontinued.
<b>Motion by/ 2<sup>nd</sup> by</b>	Xiuyun Ding (Hanergy)/Zhixin Li (Linton)	
<b>Discussion</b>	None	
<b>Vote</b>	56 Y-0 N	
<b>Final Action</b>	<input checked="" type="checkbox"/>	Motion passed
	<input type="checkbox"/>	Motion failed

Standards staff to record the result of the A&R procedural review here:

<b>A&amp;R</b>	<input type="checkbox"/>	Approved for publication
	<input type="checkbox"/>	Approved pending acceptance of the Ratification Ballot
	<input type="checkbox"/>	Not approved
	<b>Reason:</b>	