Record of Letter Ballot Review by TC Chapter for Procedural Review

Region/Locale: China
Global Technical Committee: Photovoltaic
TC Chapter Cochairs: Dengyuan Song (Dasolar)
Standards Staff: Hailey Yan

	Scheduled in Background Statement	Actual
Date	04/02/2026	04/02/2026
Location	OVTCCM	OVTCCM
Reason for Change of Date and/or Location (if changed)		

Note: Refer to *Regulations* ¶ 9.5 Exceptions for allowable reason to change.

I. Document Number and Title

Document Number	Document Title
7315	New Standard: Test Method for PV modules Intensify Aging in Cold Environmental Conditions

II. Tally

Standards staff to fill in.

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* ¶ 9.6.2.1.1)

Note: Refer to *Regulations* § 3.2.1 for definition of Voting Interest.

Voting Interest:	Returned Votes		Distribution		Return Rate	
Letter Ballot	49	÷	73	=	67.12%	≥60%
Intercommittee Ballot	43					
Voting Interest Reject(s)	1		Total Voters with Rejects			1
Voting Interest Accept(s)	65					

III. Rejects

Voting Interest Reject 1 (Voting Interest Name: PVGuider)

Voter Reject 1 (Voter: Lin, Jay and PVGuider)

Negative 1

Negative	Referenced Section/ Paragraph	*TF/TC Chapter to fill in, including text in the ballot if necessary.			
	Negative Text	*Original complete Negative text (e.g., issue, justification, suggestion) should be copied.			
		7.3.3.1 and 7.3.3.2 "-40℃ or 96 hours depending on severity level", the writing is incorrect, In this sentence, we don't know-40℃for how long. I guess you mean any temperature should be 96 hours, but the temperature depends on the severity. But the writing does not mean this.			
TF input (optional)					
Withdrawal (check one)		X	No Negative withdrawal made by Voter.		GO TO "Related" subsection
			Withdrawal document received by Standards staff on MM/DD/YYYY.		GO TO "Final" subsection → (A)
Related	Motion and Reason (check one)	X	'Related' is mutually agreed upon. (Needs no motion.)		GO TO "Persuasive" subsection
			Negative is not related. (Needs ≥2/3 votes to pass.)		
			Reason	XXXX	
	Motion by/ 2nd by	Name (Company)/Name (Company)			
	Discussion				
	Result of Vote (check one)	XX **Y**-XX **N**; Motion passed/failed.			
			[Negative is not related.] < 2/3		GO TO "Persuasive" subsection
			2/3 ≤ [Negative is not related.]		GO TO "Final" subsection → (B)
Persuasive	Motion and Reason (check one)	X	Negative is related and persuasive. (Needs >1/3 votes to pass.)		
			Negative is related and not persuasive. (Needs ≥2/3 votes to pass.)		
			Reason	XXXX	
	Motion by/ 2nd by	Jingbing Zhu(Sunman (shanghai) Co. Ltd)/ zhen zhang (Shanghai Jiaotong University)			
	Discussion				
	Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.			
		X	[Negative is related and persuasive.] > 1/3	**Is a technical change recommended?** (check one) X **Y**	GO TO "Address by Technical Change Option" subsection

			[Negative is related and not persuasive.] < 2/3		N	GO TO "Final" subsection → (E)
			2/3 ≤ [Negative is related and not persuasive.] < 90%	GO TO "Final" subsection → (C)		
			90% ≤ [Negative is related and not persuasive.]	GO TO "Not Significant Finding Option" subsection		

Address by Technical Change Option

Technical Change Recommendations

Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

Technical Changes — **1**

FROM: Section/Paragraph

7.3.3.1 Conduct Low temperature storage test (-40 ℃ or 96 hours depending on severity level); after testing, restore it for 2-4 hours at an ambient temperature of 23 ± 5 ℃ and a relative humidity of ≤ 75% before characterization.

7.3.3.2 Conduct Low temperature operation test(-40 ℃, or 96 hours according to severity level); after the test is completed, restore it for 2-4 hours under the conditions of ambient temperature of 23 ± 5 ℃ and relative humidity ≤ 75%, and then characterize it.

TO: Section/Paragraph

7.3.3.1 ~~Conduct Low temperature storage test (-40 ℃ or 96 hours depending on severity level); after testing, restore it for 2-4 hours at an ambient temperature of 23 ± 5 ℃ and a relative humidity of ≤ 75% before characterization.~~ Low temperature storage test: The test temperature shall follow the severity level, with a test duration of 96 hours. Upon completion of the test, the test sample shall be subjected to a recovery period of 2–4 hours under the conditions of ambient temperature of 23±5℃ and relative humidity ≤ 75%, before subsequent characterization is conducted.

7.3.3.2 ~~Conduct Low temperature operation test(-40 ℃, or 96 hours according to severity level); after the test is completed, restore it for 2-4 hours under the conditions of ambient temperature of 23 ± 5 ℃ and relative humidity ≤ 75%, and then characterize it.~~ Low temperature operation test: The test temperature and test current shall follow the severity level, with a test duration of 96 hours. Upon completion of the test, the test sample shall be subjected to a recovery period of 2–4 hours under the conditions of ambient temperature of 23±5℃ and relative humidity ≤ 75%, before subsequent characterization is conducted.

Justification (If necessary)

Motion		Negative is addressed by the technical change(s).	
Motion by/2nd by		Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)	
Discussion			
Result of Vote (check one)		11 **Y**-0**N**; Motion passed.	
		X 2/3 ≤ [Negative is addressed by the technical change(s).]	GO TO "Incorporation of the Technical Change" subsection
		[Negative is not addressed by the technical change(s).] < 2/3	GO TO "Final" subsection → (E)
Incorporation of the	**Motion**	To incorporate the technical change(s).	
	Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)	
	Discussion		
		11 **Y**-0 **N**; Motion passed.	

		Result of Vote (check one)	X	90% ≤ [Agree to incorporate.]	**GO TO "Final" subsection → (F)**
				[Disagree to incorporate.]>10%	**GO TO "Final" subsection → (E)**
Final	**(check if applicable)**		**(A)**	Withdrawn **(counted under h in disposition)**	
			(B)	Not related **(counted under i in disposition)**	
			(C)	Related and not persuasive (significant)	
			(D)	Not significant **(counted under j in disposition)**	
			(E)	Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**
		X	**(F)**	Addressed by technical change **(counted under k disposition)**	
	(check if applicable)		*Comment generated.* ***Refer to Section V-(ii) Comment #*** *X.*		

This table is needed for each Negative.

Negative 2

Negative	**Referenced Section/ Paragraph**	***TF/TC Chapter to fill in, including text in the ballot if necessary.**		
	Negative Text	***Original complete Negative text (e.g., issue, justification, suggestion) should be copied.**		
		Why the rest of tests do not set the temperature according to the severity? for example: DMLat -40℃TC and HF standard test low temperature also -40℃.		
TF input (optional)				
Withdrawal (check one)		X	No Negative withdrawal made by Voter.	**GO TO "Related" subsection**
			Withdrawal document received by Standards staff on MM/DD/YYYY.	**GO TO "Final" subsection → (A)**
Related	**Motion and Reason (check one)**	X	'Related' is mutually agreed upon. **(Needs no motion.)**	**GO TO "Persuasive" subsection**
			Negative is not related. **(Needs ≥2/3 votes to pass.)**	
			Reason	XXXX
	Motion by/ 2nd by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check one)	XX **Y**-XX **N**; Motion passed/failed.		
			[Negative is not related.] < 2/3	**GO TO "Persuasive" subsection**
			2/3 ≤ [Negative is not related.]	**GO TO "Final" subsection → (B)**
Persuasive	**Motion and Reason (check one)**	X	Negative is related and persuasive. **(Needs >1/3 votes to pass.)**	
			Negative is related and not persuasive. **(Needs ≥2/3 votes to pass.)**	
			Reason	XXXX

	Motion by/ 2nd by	Jingbing Zhu(Sunman (shanghai) Co. Ltd)/ zhen zhang (Shanghai Jiaotong University)					
	Discussion						
	Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.					
		X	[Negative is related and persuasive.] > 1/3	**Is a technical change recommended? (check one)**	X	**Y**	**GO TO "Address by Technical Change Option" subsection**
			[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
			2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			
			90% ≤ [Negative is related and not persuasive.]	**GO TO "Not Significant Finding Option" subsection**			

Address by Technical Change Option

Technical Change Recommendations
Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

Technical Changes — **1**

FROM: Section/Paragraph

6.3.1 The minimum temperature and applied current for low temperature storage test, low temperature operation test, thermal cycling test, humidity-freeze test, and low temperature mechanical load test indicate the severity level of the tests:

TO: Section/Paragraph

6.3.1 The minimum temperature and applied current for the low-temperature storage test, low-temperature operation test, thermal cycle test, damp heat freeze test, and low-temperature ~~mechanical load test indicate the severity level of the tests:~~ load test shall be determined according to the test severity level. The severity level shall:

Justification (If necessary)

Motion	Negative is addressed by the technical change(s).		
Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		
Discussion			
Result of Vote (check one)	11 **Y**-0**N**; Motion passed.		
	X	2/3 ≤ [Negative is addressed by the technical change(s).]	**GO TO "Incorporation of the Technical Change" subsection**
		[Negative is not addressed by the technical change(s).] < 2/3	**GO TO "Final" subsection → (E)**

Incorporation of the Technical Change

Motion	To incorporate the technical change(s).		
Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		
Discussion			
Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.		
	X	90% ≤ [Agree to incorporate.]	**GO TO "Final" subsection → (F)**
		[Disagree to incorporate.]>10%	**GO TO "Final" subsection → (E)**

F			**(A)**	Withdrawn **(counted under h in disposition)**

	(check if applicable)		(B)	Not related (counted under i in disposition)	
			(C)	Related and not persuasive (significant)	
			(D)	Not significant (counted under j in disposition)	
			(E)	Related and persuasive and not addressed by technical change	DOCUMENT FAILS
		X	(F)	Addressed by technical change (counted under k disposition)	
	(check if applicable)		*Comment generated. Refer to Section V-(ii) Comment # X.*		

This table is needed for each Negative.

Negative 3

Negative	**Referenced Section/ Paragraph**	***TF/TC Chapter to fill in, including text in the ballot if necessary.**		
	Negative Text	***Original complete Negative text (e.g., issue, justification, suggestion) should be copied.**		
		Is it possible to perform DMI at -40°C? if yes, you need aspecial DiL equipment working at low temperature, it should be specified in 6.2 Apparatus.		
TF input (optional)				
Withdrawal (check one)		X	No Negative withdrawal made by Voter.	**GO TO "Related" subsection**
			Withdrawal document received by Standards staff on MM/DD/YYYY.	**GO TO "Final" subsection → (A)**
Related	**Motion and Reason (check one)**	X	'Related' is mutually agreed upon. **(Needs no motion.)**	**GO TO "Persuasive" subsection**
			Negative is not related. **(Needs ≥2/3 votes to pass.)**	
			Reason: XXXX	
	Motion by/ 2nd by	Name (Company)/Name (Company)		
	Discussion			
	Result of Vote (check one)	XX **Y**-XX **N**; Motion passed/failed.		
			[Negative is not related.] < 2/3	**GO TO "Persuasive" subsection**
			2/3 ≤ [Negative is not related.]	**GO TO "Final" subsection → (B)**
Persuasive	**Motion and Reason (check one)**	X	Negative is related and persuasive. **(Needs >1/3 votes to pass.)**	
			Negative is related and not persuasive. **(Needs ≥2/3 votes to pass.)**	
			Reason: XXXX	
	Motion by/ 2nd by	Jingbing Zhu(Sunman (shanghai) Co. Ltd)/ zhen zhang (Shanghai Jiaotong University)		
	Discussion			
		11 **Y**-0 **N**; Motion passed.		

Result of Vote (check one)	X	[Negative is related and persuasive.] > 1/3	**Is a technical change recommended? (check one)**	X	**Y**	**GO TO "Address by Technical Change Option" subsection**
		[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
		2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			
		90% ≤ [Negative is related and not persuasive.]	**GO TO "Not Significant Finding Option" subsection**			

Address by Technical Change Option

Technical Change Recommendations
Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

Technical Changes — **1**

FROM: Section/Paragraph

7.3.1 This sequence applies mechanical loads in a specified order to reveal or mitigate reliability issues caused by cell breakage. For modules designed to be installed directly onto another surface, an assessment shall first be conducted to determine whether this test sequence provides useful information. If not, the sequence may be omitted. Among these, the low-temperature static mechanical load test shall refer to T/CPIA 0053—2023 "Test Method for Snow Load on Crystalline Silicon Photovoltaic Modules at Low Temperature"; the low-temperature dynamic mechanical load test shall refer to the provisions of IEC 61215-2, with the only modification being the change of test environment temperature from ambient to the temperature requirement specified in clause 6.3.1, while all other requirements remain consistent.

TO: Section/Paragraph

7.3.1 This sequence applies mechanical loads in a specified order to reveal or mitigate reliability issues caused by cell breakage. For modules designed to be installed directly onto another surface, an assessment shall first be conducted to determine whether this test sequence provides useful information. If not, the sequence may be omitted. Among these, the low-temperature static mechanical load test shall refer to T/CPIA 0053—2023 "Test Method for Snow Load on Crystalline Silicon Photovoltaic Modules at Low Temperature"; the low-temperature dynamic mechanical load test shall refer to the provisions of IEC 61215-2, with the only modification being the change of test environment temperature from ambient to the temperature requirement specified in clause 6.3.1, ~~while all other requirements remain consistent.~~ The equipment requirements should refer to T/CPIA 0053—2023 Test Method for Low-Temperature Snow Load of Crystalline Silicon PV Modules while all other requirements remain consistent.

Justification (If necessary)
Supplementary Information

Motion	Negative is addressed by the technical change(s).			
Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)			
Discussion				
Result of Vote (check one)	11 **Y**-0**N**; Motion passed.			
	X	2/3 ≤ [Negative is addressed by the technical change(s).]	**GO TO "Incorporation of the Technical Change" subsection**	
		[Negative is not addressed by the technical change(s).] < 2/3	**GO TO "Final" subsection → (E)**	
Incorporation	**Motion**	To incorporate the technical change(s).		
	Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		

		Discussion			
		Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.		
			X	90% ≤ [Agree to incorporate.]	**GO TO "Final" subsection → (F)**
				[Disagree to incorporate.]>10%	**GO TO "Final" subsection → (E)**
Final	**(check if applicable)**		**(A)**	Withdrawn **(counted under h in disposition)**	
			(B)	Not related **(counted under i in disposition)**	
			(C)	Related and not persuasive (significant)	
			(D)	Not significant **(counted under j in disposition)**	
			(E)	Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**
		X	**(F)**	Addressed by technical change **(counted under k disposition)**	
	(check if applicable)		*Comment generated.* ***Refer to Section V-(ii) Comment #*** *X.*		

This table is needed for each Negative.

Negative 4

Negative	**Referenced Section/ Paragraph**	***TF/TC Chapter to fill in, including text in the ballot if necessary.**		
	Negative Text	***Original complete Negative text (e.g., issue, justification, suggestion) should be copied.**		
		Why does the severity include temperature above -40 °C? It is higher than IEC61215 requirement and makes no sense to apply this standard rather than IEC standard.		
TF input (optional)				
Withdrawal (check one)		X	No Negative withdrawal made by Voter.	**GO TO "Related" subsection**
			Withdrawal document received by Standards staff on MM/DD/YYYY.	**GO TO "Final" subsection → (A)**
Related	**Motion and Reason (check one)**	X	'Related' is mutually agreed upon. **(Needs no motion.)**	**GO TO "Persuasive" subsection**
			Negative is not related. **(Needs ≥2/3 votes to pass.)**	
			Reason	XXXX
	Motion by/ 2nd by			
	Discussion			
	Result of Vote (check one)			
			[Negative is not related.] < 2/3	**GO TO "Persuasive" subsection**
			2/3 ≤ [Negative is not related.]	**GO TO "Final" subsection → (B)**
	Motion and Reason	X	Negative is related and persuasive. **(Needs >1/3 votes to pass.)**	

Persuasive	(check one)		Negative is related and not persuasive. **(Needs ≥2/3 votes to pass.)**				
			Reason	XXXX			
	Motion by/ 2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)					
	Discussion						
	Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.					
		X	[Negative is related and persuasive.] > 1/3	**Is a technical change recommended? (check one)**	X	**Y**	**GO TO "Address by Technical Change Option" subsection**
			[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
			2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			
			90% ≤ [Negative is related and not persuasive.]	**GO TO "Not Significant Finding Option" subsection**			

Address by Technical Change Option

Technical Change Recommendations

Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

Technical Changes

1

FROM: Section/Paragraph

NOTE 1: Method for selecting the minimum temperature in the usage region: Select the lowest temperature on record and its corresponding irradiance from the local meteorological bureau.

TO: Section/Paragraph

NOTE 1: Method for Selecting the Minimum Temperature ~~in the usage region: Select the lowest temperature on record and its corresponding irradiance from the local meteorological bureau.~~ of the Application Area: Select the recorded minimum temperature and its corresponding irradiance from the local meteorological authority. If the minimum temperature is higher than -40℃, the test should be performed at -40℃.

Justification (If necessary)

The temperature conditions higher than -40℃ in the severity levels have been removed to further focus on the test requirements for extreme low-temperature scenarios.

2

FROM: Section/Paragraph

6.3.2 Temperature severity level

-65℃;
-55℃;
-50℃;
-40℃;
-33℃;
-25℃;
-20℃;
-10℃;
-5℃;
+5 ℃.

			TO: Section/Paragraph 6.3.2 Temperature severity level -65℃； -55℃； -50℃； -40℃； ~~-33℃；~~ ~~-25℃；~~ ~~-20℃；~~ ~~-10℃；~~ ~~-5℃；~~ ~~+5 ℃~~.		
			Justification (If necessary) **The temperature conditions higher than -40℃ in the severity levels have been removed to further focus on the test requirements for extreme low-temperature scenarios.**		
	Motion		Negative is addressed by the technical change(s).		
	Motion by/2nd by		Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		
	Discussion				
	Result of Vote (check one)		11 **Y**-0 **N**; Motion passed.		
		X	2/3 ≤ [Negative is addressed by the technical change(s).]	**GO TO "Incorporation of the Technical Change" subsection**	
			[Negative is not addressed by the technical change(s).] < 2/3	**GO TO "Final" subsection → (E)**	
	Incorporation of the Technical Change	**Motion**	To incorporate the technical change(s).		
		Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		
		Discussion			
		Result of Vote (check one)	11 **Y**-0 **N**; Motion passed/failed.		
		X	90% ≤ [Agree to incorporate.]	**GO TO "Final" subsection → (F)**	
			[Disagree to incorporate.]>10%	**GO TO "Final" subsection → (E)**	
Final	**(check if applicable)**		**(A)**	Withdrawn **(counted under h in disposition)**	
			(B)	Not related **(counted under i in disposition)**	
			(C)	Related and not persuasive (significant)	
			(D)	Not significant **(counted under j in disposition)**	
			(E)	Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**
		X	**(F)**	Addressed by technical change **(counted under k disposition)**	
	(check if applicable)		*Comment generated.* ***Refer to Section V-(ii) Comment #*** *X.*		

Negative 5

Negative	**Referenced Section/ Paragraph**	***TF/TC Chapter to fill in, including text in the ballot if necessary.**

	Negative Text	***Original complete Negative text (e.g., issue, justification, suggestion) should be copied.**					
		Hail does not appear in very cold temperature environment, on the opposite it need higher temperature to have high convection to generate hails, I don't understand. why hail test is included in this standard.					
TF input (optional)							
Withdrawal (check one)		X	No Negative withdrawal made by Voter.				**GO TO "Related" subsection**
			Withdrawal document received by Standards staff on MM/DD/YYYY.				**GO TO "Final" subsection → (A)**
Related	**Motion and Reason (check one)**	X	'Related' is mutually agreed upon. **(Needs no motion.)**				**GO TO "Persuasive" subsection**
			Negative is not related. **(Needs ≥2/3 votes to pass.)**				
			Reason	XXXX			
	Motion by/ 2nd by	Name (Company)/Name (Company)					
	Discussion						
	Result of Vote (check one)	XX **Y**-XX **N**; Motion passed/failed.					
			[Negative is not related.] < 2/3				**GO TO "Persuasive" subsection**
			2/3 ≤ [Negative is not related.]				**GO TO "Final" subsection → (B)**
Persuasive	**Motion and Reason (check one)**		Negative is related and persuasive. **(Needs >1/3 votes to pass.)**				
		X	Negative is related and not persuasive. **(Needs ≥2/3 votes to pass.)**				
			Reason	The scope of application of this standard is the full-life-cycle reliability evaluation of photovoltaic modules in cold regions. Modules operating in such regions may be exposed to hail impacts caused by severe convective weather in summer after undergoing extreme low-temperature aging conditions in winter. Therefore, the core objective of incorporating the hail test is to verify the hail resistance of modules after low-temperature aging, rather than to evaluate the impact of hail under purely low-temperature environments. After multiple rounds of discussions and solicitation of opinions, the drafting committee holds that the inclusion of the hail test in this standard can better realize a comprehensive assessment of module reliability.			
	Motion by/ 2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)					
	Discussion						
	Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.					
			[Negative is related and persuasive.] > 1/3	**Is a technical change recommended? (check one)**		**Y**	**GO TO "Address by Technical Change Option" subsection**
			[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
			2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			

		X	90% ≤ [Negative is related and not persuasive.]	**GO TO "Not Significant Finding Option" subsection**
Not Significant Finding Option	**This option can be used only "if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (*Regulations* ¶ 9.6.1.4.5.2)**			
	Use of "Not significant finding option" (check one)	X	It is mutually agreed upon to term the Negative "not significant".	**GO TO "Final" subsection → (D)**
			It is mutually agreed upon to term the Negative "significant".	**GO TO "Final" subsection → (C)**
			Whether or not the Negative is "not significant" is decided by a vote.	
	Motion	The Negative is "not significant".		
	Motion by/ 2nd by	Name (Company)/Name (Company)		
	Vote		XX **Y**-XX **N**; Motion passed with simple majority	**GO TO "Final" subsection → (D)**
			XX **Y**-XX **N**; Motion failed with simple majority	**GO TO "Final" subsection → (C)**
Final	**(check if applicable)**		**(A)** Withdrawn **(counted under h in disposition)**	
			(B) Not related **(counted under i in disposition)**	
			(C) Related and not persuasive (significant)	
		X	**(D)** Not significant **(counted under j in disposition)**	
			(E) Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**
			(F) Addressed by technical change **(counted under k disposition)**	
	(check if applicable)		*Comment generated.* ***Refer to Section V-(ii) Comment #*** *X.*	

Negative 6

Negative	**Referenced Section/ Paragraph**	***TF/TC Chapter to fill in, including text in the ballot if necessary.**		
	Negative Text	***Original complete Negative text (e.g., issue, justification, suggestion) should be copied.**		
		The insulation capability usually highly depends on temperature, should we do the insulation and wet leakage at low temperature?		
TF input (optional)				
Withdrawal (check one)		X	No Negative withdrawal made by Voter.	**GO TO "Related" subsection**
			Withdrawal document received by Standards staff on MM/DD/YYYY.	**GO TO "Final" subsection → (A)**
Related	**Motion and Reason (check one)**	X	'Related' is mutually agreed upon. **(Needs no motion.)**	**GO TO "Persuasive" subsection**
			Negative is not related. **(Needs ≥2/3 votes to pass.)**	
			Reason	XXXX
	Motion by/ 2nd by	Name (Company)/Name (Company)		
	Discussion			

	Result of Vote (check one)	XX **Y**-XX **N**; Motion passed/failed.					
			[Negative is not related.] < 2/3				**GO TO "Persuasive" subsection**
			2/3 ≤ [Negative is not related.]				**GO TO "Final" subsection → (B)**
Persuasive	**Motion and Reason** (check one)		Negative is related and persuasive. **(Needs >1/3 votes to pass.)**				
		X	Negative is related and not persuasive. **(Needs ≥2/3 votes to pass.)**				
			Reason	1) We agree with the conclusion that the insulation performance is highly temperature-dependent. This is indeed a topic worthy of in-depth discussion. The core objectives of the insulation test and leakage current test are to evaluate the safety performance of the module under normal operating conditions. 2) However, this standard focuses on verifying the reliability of photovoltaic modules under the combined conditions of extreme low temperatures and long-term outdoor exposure to multiple environmental factors. The test conditions are referenced to IEC61215 and are typically set at room temperature. 3) Therefore, regarding the insulation performance test under low-temperature conditions, our industry survey indicates that such test equipment is not yet available, resulting in a lack of necessary data to support the development of this evaluation method. Furthermore, this issue falls outside the scope of the current version of this standard. Certainly, the insulation and wet leakage current tests under low-temperature conditions can be designated as a dedicated research topic. We will consider incorporating this content into the revised version of the standard once sufficient test data have been accumulated.			
	Motion by/ 2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)					
	Discussion						
	Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.					
			[Negative is related and persuasive.] > 1/3	**Is a technical change recommended?** (check one)		**Y**	**GO TO "Address by Technical Change Option" subsection**
			[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
			2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			
		X	90% ≤ [Negative is related and not persuasive.]	**GO TO "Not Significant Finding Option" subsection**			
Not Significan	**This option can be used only "if the TC Chapter finds a Negative not persuasive by a vote equal to or greater than 90% of the persons voting on the action". (*Regulations* ¶ 9.6.1.4.5.2)**						
		X	It is mutually agreed upon to term the Negative "not significant".				**GO TO "Final" subsection → (D)**

	Use of "Not significant finding option" **(check one)**		It is mutually agreed upon to term the Negative "significant".		**GO TO "Final" subsection → (C)**
			Whether or not the Negative is "not significant" is decided by a vote.		
	Motion	The Negative is "not significant".			
	Motion by/ 2nd by	Name (Company)/Name (Company)			
	Vote		XX **Y**-XX **N**; Motion passed with simple majority		**GO TO "Final" subsection → (D)**
			XX **Y**-XX **N**; Motion failed with simple majority		**GO TO "Final" subsection → (C)**
Final	**(check if applicable)**		**(A)**	Withdrawn **(counted under h in disposition)**	
			(B)	Not related **(counted under i in disposition)**	
			(C)	Related and not persuasive (significant)	
		X	**(D)**	Not significant **(counted under j in disposition)**	
			(E)	Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**
			(F)	Addressed by technical change **(counted under k disposition)**	
	(check if applicable)		*Comment generated.* ***Refer to Section V-(ii) Comment #*** *X.*		

IV. Other Technical Issues

Note: TC Chapter may choose to address a technical issue that is not part of a Negative received on a Letter Ballot (i.e., a Comment or a reason not addressed by a Vote response) by handling it as a Negative and finding it related and technically persuasive. The TC Chapter may then fail the Document or address such technical issue by using the procedure defined in *Regulations* § 9.6.1.4.3 to make a technical change to the Document. (*Regulations* ¶ 9.6.1.4.2.5)

Technical Issue	**Origin**	***TF/TC Chapter to choose** Comment # (Voter: Name and company) / A reason not addressed by a Vote response **Tong Wang and Sipai New Energy**
	Referenced Section/ Paragraph	***TF/TC Chapter to fill in including text in the ballot as appropriate.**
	Reason	***Original Comment text, if applicable, and problem statement, including justification and suggestion, should be copied.**
		Considering that the dimensional deformation of modules after extreme low-temperature storage (e.g., width deviation up to ±6 mm) may affect subsequent installation and testing, it is recommended to add explanatory notes in the standard to emphasize that visual inspection shall be performed prior to testing following prolonged cold storage.

Handle technical issue identified above as a Negative.

Related	**Motion and Reason** **(check one)**	x	'Related' is mutually agreed upon. **(Needs no motion.)**	**GO TO "Persuasive" subsection**
			Negative is not related and assigned to TF. **(Needs ≥2/3 votes to pass.)**	
			Negative is not related and placed on agenda of current TC Chapter meeting as new business. **(Needs ≥2/3 votes to pass.)**	
			Reason	XXXX

	Motion by/ 2nd by	Name (Company)/Name (Company)					
	Discussion						
	Result of Vote (check one)	XX **Y**-XX **N**; Motion passed/failed.					
			[Negative is not related.] <2/3				**GO TO "Persuasive" subsection**
			2/3 ≤ [Negative is not related] and assigned to TF.				**GO TO "Final" subsection → (B)**
			2/3 ≤ [Negative is not related] and placed on agenda of current TC Chapter meeting as new business.				
Persuasive	**Motion and Reason (check one)**	x	Negative is related and persuasive. **(Needs >1/3 votes to pass.)**				
			Negative is related and not persuasive. **(Needs ≥2/3 votes to pass.)**				
			Reason	XXXX			
	Motion by/ 2nd by	Jingbing Zhu(Sunman (shanghai) Co. Ltd)/ zhen zhang (Shanghai Jiaotong University)					
	Discussion						
	Result of Vote (check one)	11 **Y**-0 **N**; Motion passed.					
		x	[Negative is related and persuasive.] > 1/3	**Is a technical change recommended? (check one)**	x	**Y**	**GO TO "Address by Technical Change Option" subsection**
			[Negative is related and not persuasive.] < 2/3			**N**	**GO TO "Final" subsection → (E)**
			2/3 ≤ [Negative is related and not persuasive.] < 90%	**GO TO "Final" subsection → (C)**			

Address by Technical Change Option

Technical Change Recommendations

Original section/paragraph number and at least one full sentence are required in "FROM" and "TO" fields.

Technical Changes	**1**	**FROM:** 7.3.3.2 Conduct Low temperature operation test(-40 ℃, or 96 hours according to severity level); after the test is completed, restore it for 2-4 hours under the conditions of ambient temperature of 23 ± 5 ℃ and relative humidity ≤ 75%, and then characterize it.
		TO: 7.3.3.2 ~~Conduct Low temperature operation test(-40 ℃, or 96 hours according to severity level); after the test is completed, restore it for 2-4 hours under the conditions of ambient temperature of 23 ± 5 ℃ and relative humidity ≤ 75%, and then characterize it.~~ Low temperature operation test: Follow the severity level for the test temperature and test current, with a test duration of 96 hours. After the test, recover the test specimen for 2–4 hours under ambient temperature 23±5℃ and relative humidity ≤ 75%, then conduct subsequent characterization. NOTE 3: The above recovery time of 2-4 hours may be extended according to actual conditions, and the module temperature shall recover to 23±5℃.
		Justification (If necessary)

Motion	Negative is addressed by the technical change(s).

	Motion by/2nd by		Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		
	Discussion				
	Result of Vote (check one)		11 **Y**-0**N**; Motion passed.		
		x	2/3 ≤ [Negative is addressed by the technical change(s).]	**GO TO "Incorporation of the Technical Change" subsection**	
			[Negative is not addressed by the technical change(s).] < 2/3	**GO TO "Final" subsection → (E)**	
	Incorporation of the Technical Change — **Motion**		To incorporate the technical change(s).		
	Motion by/2nd by		Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)		
	Discussion				
	Result of Vote (check one)		11 **Y**-0 **N**; Motion passed.		
		x	90% ≤ [Agree to incorporate.]	**GO TO "Final" subsection → (F)**	
			[Disagree to incorporate.] >10%	**GO TO "Final" subsection → (E)**	
Final	(check one)		**(B)**	Not related	
			(C)	Related and not persuasive	
			(E)	Related and persuasive and not addressed by technical change	**DOCUMENT FAILS**
		x	**(F)**	Addressed by technical change	
	(check if applicable)		Comment generated. Refer to Section V-(ii) Comment # X.		

V. Comments

V- (i) Voters' Comments

Commenter 1 (Lin, Jay and PVGuider) - Comment 1

Comment	***TF/TC Chapter to fill in section/paragraph #, if necessary.**		
	"times Imp-BSI" you miss "1"		
Action	**The TC Chapter agreed to do one of the following actions.**		
	***No motion is required in this step.**		
		Already addressed by Commenter #, Comment #	
		No further action was taken by the TC Chapter.	
		Refer to the TF for more consideration.	
		New Business	
	X	Editorial Change	
	Options for editorial		**Case 1: No vote in this section:**
			To be included and voted on as a group in § VI. *Editorial Changes Other than Those Voted on in § V.*
		X	**Case 2: Voted in this section:**

	change (check one)		**Original section number and at least one full sentence are required in "FROM" and "TO" fields.**
Editorial Changes	**1**	**FROM: Section/Paragraph** 6.3.3 Current 0.2 times Imp-BSI ; 0.4 times Imp-BSI ; 0.6 times Imp-BSI ; 0.8 times Imp-BSI ; times Imp-BSI ; 1.2 times Imp-BSI .	
		TO: Section/Paragraph 6.3.3 Current 0.2 times Imp-BSI ; 0.4 times Imp-BSI ; 0.6 times Imp-BSI ; 0.8 times Imp-BSI ; 1.0 times Imp-BSI ; 1.2 times Imp-BSI .	
		Justification (If necessary) **Clarification**	

Motion	To approve above editorial change(s)
Motion by/2nd by	Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang (Shanghai Jiaotong University)
Discussion	
Vote	*11* ***Y****-0* ***N****; Motion passed.*

This table is needed for each Comment accompanied a Vote

Commenter 2 (Kennis Ko, CERTIE) - Comment 1

Comment	***TF/TC Chapter to fill in section/paragraph #, if necessary.**	
	Thank you for the work. Based on the documents, the overall generic information seems align the IEC standard. I assumed TF reviewed the details and derived methodology from IEC with careful discussion.	
Action	**The TC Chapter agreed to do one of the following actions.**	
	***No motion is required in this step.**	
		Already addressed by Commenter #, Comment #
	x	No further action was taken by the TC Chapter.
		Refer to the TF for more consideration.
		New Business
		Editorial Change

Commenter 3 (He Liang, Ronma Solar) - Comment 1

Comment	*TF/TC Chapter to fill in section/paragraph #, if necessary.	
	Accept	
Action	**The TC Chapter agreed to do one of the following actions.**	
	*No motion is required in this step.	
		Already addressed by Commenter #, Comment #
	x	No further action was taken by the TC Chapter.
		Refer to the TF for more consideration.
		New Business
		Editorial Change

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* ¶ 9.6.2.1.2)

APPROVAL CONDITION 2: At least 90% of the sum of valid Voting Interest Accept and Voting Interest Reject Votes must be Accept. (*Regulations* ¶ 9.6.2.1.3)

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

		Accepts		(Accepts + Valid Rejects)				
Approval Rate	=	65		65	=	100%		≥90%

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

Note: Refer to *Regulations* § 9.6.2 for further information.

	Globally Approved (No Ratification Ballot needed): **The Letter Ballot meets the Letter Ballot approval conditions for the global technical committee.**
X	**Need a Ratification Ballot:** **The Letter Ballot meets the Letter Ballot approval conditions for the TC Chapter and a Ratification Ballot will be issued to validate technical changes.**

VIII. Safety Check

Note: Refer to *Regulations* § 15 for further information.

Motion		
	X	**This is not a Safety Document**, when all safety-related information is removed, the Document is still technically sound and complete. (*Regulations* ¶ 8.7.1)
		This is a Safety Document, when all safety-related information is removed, the Document is not technically sound and complete. (*Regulations* ¶ 8.7.2)
		Safety Checklist (*Regulations* ¶ 15.3) is complete and has been included with the Document throughout the balloting process. (*Regulations* ¶ 15.1.2)
Motion by/2nd by		Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhiwei Li (Trinasolar)
Discussion		
Vote		11 **Y**-0 **N**; Motion passed

IX. Intellectual Property (IP) Check

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

X	The TC Chapter meeting chair asked those participating, if they were aware of any patented technology that might be relevant (refer to *Regulations* ¶ 16.3.1.1) to the Standard or Safety Guideline; or, any copyrighted items or trademarks that are used/reproduced (refer to *Regulations* ¶ 16.4.1.2) in the Standard or Safety Guideline. (Also refer to *Regulations* § 8.8)					
	X	The question is NOT answered in affirmative (No potentially material patented technology or use/reproduction of copyrighted items/trademarks is known.)	**GO TO SECTION X.**			
		The question is answered in affirmative	Is any of the known IPs a patented technology?		**Yes, at least one of them is a patented technology**	**GO TO IX (a) "Patented Technology" subsection**
					No	**GO TO IX (b) "Copyright items" subsection**

IX(a) Patented Technologies subsection

IX(a1) Total numbers of Patented Technologies to be dealt with

# **Fill number**	**(l)** Known Patented Technology that might be relevant to the Standard/Safety Guideline	**#** **Fill number**	**(m)** Number of patented technologies first became known to the TC Chapter on or after the day of the issuance of this Letter Ballot	**Postpone assessment of such patented technologies to be performed at the next scheduled TC Chapter meeting.**
		# **Fill number**	**(n)** Number of patented technologies first became known to the TC Chapter before the day of the issuance of this Letter Ballot	**GO TO IX (a2)**

IX(a2) Assessment of disclosed patented technologies

Disclosed patented technology #1 (***Brief description, e.g., patent title and number***):			**Date of Assessment** **(If different from the date of Letter Ballot adjudication)** MM/DD/YYYY			
Is disclosed patented technology #1 found to be "might be material" to the Standard/Safety Guideline?		YES (It is a PMPT)	Is the use of this PMPT technically justified?		**YES**	**PROCEED to assess NEXT one, or if this is the last one, GO TO IX(a3)**
					NO	**The Document is failed and returned to the TF**
		NO	No further action is needed for patented technology #1			

This table is needed for each disclosed patented technology.

IX(a3) LOA status check of PMPT of which inclusion assessed to be justified

LOA Status of PMPT #1						
Has an LOA for this patented technology been received from every owner ?		YES	**PROCEED to check NEXT one, or if this is the last one, GO TO IX(b)**			
		NO	MOTION		Ask ISC for special permission to publish.	
					Quit activity.	**The Document is failed and returned to the TF**
					Wait for LOA	**PROCEED to check NEXT one, or if this is the last one, GO TO IX(b1)**
			Motion by/ 2nd by		Name (Company)/Name (Company)	
			Discussion		XXXX	
			Vote		XX **Y**-XX **N**; Motion passed (or failed)	

This table is needed for each PMPT of which inclusion assessed to be justified.

IX(b1) Total numbers of copyrighted items to be dealt with

# **Fill number**	**(o)** Known copyrighted items that are used or reproduced to the Standard/Safety Guideline		**o > 0** There is at least one known copyrighted items that might be relevant to the Standard/Safety Guideline	**GO TO IX (b2)**
			o = 0 There is no disclosed copyrighted item	**GO TO IX (c)**

IX(b2) Assessment of disclosed copyrighted items

Disclosed copyrighted item #1 (***Brief description of its use in the Document***):						
Is disclosed copyrighted item #1 used or reproduced in the Standard/Safety Guideline?		YES	Is the use/reproduction of this copyrighted item technically justified?		YES	**PROCEED to assess NEXT one, or if this is the last one, GO TO IX(b3)**
					NO	**The Document is failed and returned to the TF**
		NO	No further action is needed for copyrighted item #1			

This table is needed for each disclosed copyrighted item.

IX(b3) Copyright release status check of copyrighted item of which inclusion assessed to be justified

Copyright release Status of copyrighted item #1					
Has the copyright release been received from its owner ?.		YES	**PROCEED to assess NEXT one, or if this is the last one, GO TO IX(c)**		
		NO	MOTION		Ask ISC for special permission to publish.

					Quit activity.	**The Document is failed and returned to the TF**
					Wait for copyright release letter	**PROCEED to check NEXT one, or if this is the last one, GO TO IX(c)**
			Motion by/ 2nd by			Name (Company)/Name (Company)
			Discussion			XXXX
			Vote			XX **Y**-XX **N**; Motion passed (or failed)

This table is needed for each copyrighted item of which use/reproduction assessed to be justified.

IX(c) Assessment of disclosed (identified) trademark

Is there any trademark in the Standard/Safety Guideline?		YES	Is every instance of trademark use technically justified?		YES	**GO TO** IX(d)
					NO	**The Document is failed and returned to the TF**
		NO	**GO TO IX(d)**			

IX(d) IP check completion condition check

The co-chair checks if any Patented Technologies first become known to the TC Chapter on or after the day of the issuance of this Letter Ballot? i.e., m>0 in IX(a1)		YES	**Sections IX(a2) and IX(a3) shall be completed and recorded for such patented technologies at next scheduled meeting of the TC Chapter. Until then, the TC Chapter shall NOT go to X** (making motion to pass/fail this Document) **(refer to *Regulations* ¶16.4.1.2)** **Until then this Letter Ballot Review is on hold.**
		NO	**GO TO X**

X. Action for This Document

Motion		This Document passed TC Chapter review as balloted and will be forwarded to the ISC A&R SC for procedural review.
		This Document passed TC Chapter review with editorial changes and will be forwarded to the ISC A&R SC for procedural review.
	X	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.
		This Document failed TC Chapter review and will be returned to the TF for rework.
		This Document failed TC Chapter review and work will be discontinued.
Motion by/ 2nd by		Jingbing Zhu(Sunman(shanghai)Co.Ltd)/zhen zhang(Shanghai Jiaotong University)
Discussion		
Vote		11 **Y**-0 **N**
Final Action	X	Motion passed
		Motion failed

Note: If the use of PMPT or copyrighted item is justified by the TC Chapter, LOA or release form must be received before publication can proceed.