Registration Department
Bureau of Indian Standards

Our Ref: Reg/Solar PV Modules **27 March 2025**

Subject: Guidelines for Implementation of Revised QCO for Solar Photovoltaic (PV) Modules

General:

1. Ministry of New and Renewable Energy has notified the "Solar Systems, Devices and Components Goods Order, 2025" notified by MNRE which supersedes the Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017. The new Quality Control Order (QCO) implements the revised Standards on Solar Photovoltaic (PV) Modules as follows:

Sl No	Goods or articles	Existing IS number under certification	Revised Standard notified in new QCO	Indian Standard / Product
i.	Crystalline Silicon Terrestrial Photovoltaic (PV) modules (Si wafer based)	IS 14286: 2010/ IEC 61215: 2005	IS 14286 (Part 1) : 2023/ IEC 61215 – 1 : 2021	Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval Part 1 Test Requirements
			IS 14286 (Part 1/Sec 1) : 2023/ IEC 61215-1-1 : 2021	Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval: Part 1 Test Requirements: Sec 1 Special requirements for testing of **crystalline silicon photovoltaic (PV) modules.**
		IS/IEC 61730 – 1 : 2004	IS/IEC 61730 – 1 : 2016	Photovoltaic (PV) Module Safety Qualification Part 1 Requirements for Construction
		IS/IEC 61730 – 2 : 2004	IS/IEC 61730 – 2 : 2016	Photovoltaic (PV) Module Safety Qualification Part 2 Requirements for Testing
ii	Thin-Film Terrestrial Photovoltaic (PV) Modules [CdTe, a-Si, $Cu(In,Ga)(S,Se)_2$]	IS 16077: 2013/ IEC 61646 : 2008	IS 14286 (Part 1) : 2023/ IEC 61215 – 1 : 2021	Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval Part 1 Test Requirements
			IS 14286 (Part 1/Sec 2) : 2023/ IEC 61215-1-2 : 2021	Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval Part 1 Test Requirements Section 2 Special requirements for testing of **thin-film cadmium telluride (CdTe) based photovoltaic (PV) modules**
			IS 14286 (Part 1/Sec 3) : 2023/ IEC 61215-1-3 : 2021	Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval Part 1 Test Requirements Section 3 Special requirements for testing of **thin-**

				film amorphous silicon based photovoltaic (PV) modules
			IS 14286 (Part 1/Sec 4) : 2023/ IEC 61215-1-4 : 2021	Terrestrial Photovoltaic (PV) Modules – Design Qualification and Type Approval Part 1 Test Requirements Section 4 Special requirements for testing of **thin-film Cu (In,Ga)(S,Se)2 based photovoltaic (PV) modules**
		IS/IEC 61730 – 1 : 2004	IS/IEC 61730 – 1 : 2016	Photovoltaic (PV) Module Safety Qualification Part 1 Requirements for Construction
		IS/IEC 61730 – 2 : 2004	IS/IEC 61730 – 2 : 2016	Photovoltaic (PV) Module Safety Qualification Part 2 Requirements for Testing

2. The Standards IS 14286 (Part 1) : 2023/ IEC 61215-1 : 2021 cover the general requirements of all the types of Solar PV modules covered in IS 14286 series of Indian Standards. Further, this Indian Standard is referred in all the Indian Standards published as various sections under IS 14286 (Part 1): 2023.

3. In addition, MNRE has also introduced in the new QCO a condition to set minimum efficiency (@ Standard Test Conditions i.e., STC) criteria for the purpose of Grant of License. Accordingly, the maximum PV output of the module (in W), area of the module (in m^2) and the calculated Efficiency (@ STC in %) as per Cl 10 of the QCO shall be reported by the Laboratories under Description of module construction.

4. All manufacturers are required to implement the revised Standards and QCO within the within the timeline as laid down in the new QCO.

5. Major changes observed in the revised Standards w.r.t. the existing Standards are listed in the Annexure 1.

6. Guidelines for implementation of revised IS 14286, IS/IEC 61730-1& 2 latest versions are given below.

A, Existing licencees of Solar PV Modules

a. As per IS 14286 (Part 1): 2023, the series formation and consideration of changes in BOM i.e. changes in material selection, components and manufacturing process which can affect product qualification shall be as per Cl 4 of IS 14286 (Part 1) and IS/IEC TS 62915 respectively.
For product family with single BOM
Licensee shall group all the existing models in their scope and select the models as per the criteria given in Cl 4 of IS 14286 (Part 1) for testing. Complete testing as per IS 14286 (Part 1/Sec 1) : 2023 (or IS 14286 (Part 1/Sec 2) : 2023 or IS 14286 (Part 1/Sec 3) : 2023 or IS 14286 (Part 1/Sec 4) : 2023 as applicable), IS/IEC 61730-1 : 2016, IS/IEC 61730-2 : 2016 is required for representative models and applicable retests as per IS/IEC TS 62915 is required for series models.
For product family with existing multiple BOMs

Licensee shall group all the existing models in their scope and select the models as per the criteria given in Cl 4 of IS 14286 (Part 1) for testing. Complete testing as per IS 14286 (Part 1/Sec 1) : 2023 (or IS 14286 (Part 1/Sec 2) : 2023 or IS 14286 (Part 1/Sec 3) : 2023 or IS 14286 (Part 1/Sec 4) : 2023 as applicable), IS/IEC 61730-1 : 2016, IS/IEC 61730-2 : 2016 is required for representative models and applicable retests as per IS/IEC TS 62915 is required for series models. Changes in BOM shall be addressed by retesting as per IS/IEC TS 62915.

b. Existing licensees of Solar PV Modules shall implement the QCO within the stipulated timeline for the existing models in their scope by applying online through the "Standard Revision/ Amendment/ Essential Requirement" module along with complete test reports issued by Third Party Testing Laboratory through online portal following due procedure.

c. For new models conforming to the revised set of Standards, they shall apply online through the "Inclusion" module.

d. On successful implementation of the revised Standards, BIS shall issue a letter indicating all the model(s) for which the compliance has been successfully established.

e. After the stipulated timeline, non-compliant models i.e. models as per IS 14286: 2010 or IS 16077: 2013, IS/IEC 61730 – 1 : 2004 and IS/IEC 61730 – 2 : 2004 shall be deleted from the scope of License. If the Licensee fails to take necessary action within the stipulated timeline or if none of the models are complying, License shall be liable for expiry.

B. For New Applicants of Solar PV Modules

a. New applications for Solar PV Modules may be submitted along with test report for IS 14286 (Part 1/Sec 1) : 2023 (or IS 14286 (Part 1/Sec 2) : 2023 or IS 14286 (Part 1/Sec 3) : 2023 or IS 14286 (Part 1/Sec 4) : 2023 as applicable), IS/IEC 61730-1 : 2016, IS/IEC 61730-2 : 2016.

b. Processing of Applications as per old set of Standards i.e. as per IS 14286: 2010 or IS 16077: 2013, IS/IEC 61730 – 1 : 2004 and IS/IEC 61730 – 2 : 2004 shall be permitted only upto 27 July 2025 and for such cases Applicant shall give a declaration that they will implement the revised QCO before the end of their validity.

c. Beyond 27 July 2025 no new Licence for Solar PV Modules shall be granted without compliance to the new QCO.

C. Change in Scope of License

a. Inclusion applications for Solar PV Modules may be submitted along with test report for IS 14286 (Part 1/Sec 1) : 2023 (or IS 14286 (Part 1/Sec 2) : 2023 or IS 14286 (Part 1/Sec 3) : 2023 or IS 14286 (Part 1/Sec 4) : 2023 as applicable), IS/IEC 61730-1 : 2016, IS/IEC 61730-2 : 2016.

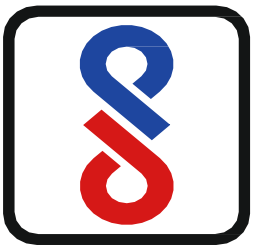
b. It may be noted that inclusion of series model as per new Standard will not be permitted unless revised standards have been implemented for the representative model.

c. Processing of Inclusions with test report as per the old standards shall be permitted only upto 27 July 2025 and for such cases Applicant shall give a declaration that they will implement the revised QCO before the end of their validity.

d. Existing Licensees shall not use the Inclusion module to apply for implementation of revised Standard of registered models. Instead they may use the module as already mentioned in 6(A)(a).

7. The Standard Mark for Crystalline Silicon Terrestrial Photovoltaic (PV) modules (Si wafer based)/ Thin-Film Terrestrial Photovoltaic (PV) Modules [CdTe/ a-Si/ Cu(In,Ga)(S,Se)2] based is given below for reference:

IS 14286 (Part 1/Sec x)/ IEC 61215-1-x
IS/IEC 61730-1
IS/IEC 61730-2



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8. All existing Licencees and applicants shall take timely actions for implementation of the revised QCO as per the above guidelines.

Aurosmita Kabiraj
Sc.-D & Joint Director

Head (Registration)
DDG(Certification)

Annexure

Major changes observed in revised IS 14286 (Part 1) : 2023/ IEC 61215 – 1 : 2021 and IS 14286 (Part 2) : 2023/ IEC 61215 – 2 : 2021 with respect to existing IS 14286 : 2010/ IEC 61215: 2005 and IS 16077: 2013/ IEC 61646: 2008:

a) New standard series structure consistent with other IEC standards: Part 1 lists general requirements, Part 1-x specifics for each PV technology and Part 2 defines testing. All tests defined in Part 2 are MQTs (module quality tests).
b) Sampling procedure rewritten (Clause 4).
c) Marking requirements better defined for name plate and general documentation.
d) Pass/fail criteria have been divided into two "gates". Gate No. 1 compares the measured electrical quantities with the nameplate and Gate No. 2 compares the measured power before and after stress. Further component requirements and the requirements of each MQT (summarized in Table 3 and Figure 2) are also to be verified.
e) Revised hot-spot endurance test (MQT 09).
f) Revised insulation test (MQT 03)
g) Update of the other tests to be consistent with changes in IEC 61646.
h) Removal of the method for measuring temperature coefficients and reference to IEC 60891.
i) Rewriting of the robustness of termination test (MQT 14) to include evaluation of both cables and junction boxes.
j) Stabilization of PV modules implemented MQT 19. This replaces either light soaking procedure from IEC 61646 or preconditioning from IEC 61215.
k) Addition of cyclic (dynamic) mechanical load test taken from IS/IEC TS 62782 MQT 20;
l) Addition of potential induced degradation test taken from IS 17210 (Part 1) : 2019/ IEC TS 62804-1: 2015 MQT 21;
m) Addition of test methods required for flexible modules. This includes the addition of the bending test (MQT 22);
n) Addition of definitions, references and instructions on how to perform the IS 14286 design qualification and type approval on bifacial PV modules;
o) Clarification of the requirements related to power output measurements;
p) Addition of weights to junction box during 200 thermal cycles MQT 11;
q) Requirement that retesting be performed according to IS/IEC TS 62915 : 2018;
r) A procedure for stress specific stabilization – BO LID (MQT 19.3) is added;
s) A final stabilization procedure for modules undergoing PID testing is added;
t) A test for detection of potential-induced degradation (MQT 21) is added; and
u) Bending test (MQT 22) for flexible modules is added.

Annexure

Major changes observed in IS/IEC 61730-1 : 2016 with respect to IS/IEC 61730-1 : 2004:

a. Adaption of horizontal standards and inclusion of IEC 60664 and IEC 61140.
b. Implementation of insulation coordination, overvoltage category, classes, pollution degree (PD), and material groups (MG).
c. Implementation of component qualification e.g. compliance with applicable standards for junction boxes (IS 16911/ IEC 62790), cables (IS 17293 or IEC 62930) and connectors (IS 16781/ IEC 62852).
d. IEC Guide 108 Guidelines for ensuring the coherency of IEC publications – Application of horizontal standards.
e. Definition of creepage (cr), clearance (cl) and distance through insulation.

Major changes observed in IS/IEC 61730-2 : 2016 with respect to IS/IEC 61730-2 : 2004:

a) Rearrange test sequences.
b) MST 01: Visual inspection: added nameplate requirement and modified pass criteria.
c) Added sharp edge test MST 06.
d) Added insulation thickness test MST 04.
e) MST 11: Accessibility test: defined force for test finger.
f) MST 12: Cut susceptibility test: defined blade radius for cut test.
g) MST 14: removed preconditioning requirement TC200 from Figure 1.
h) MST 15: Partial discharge test removed.
i) Renamed dielectric breakdown test MST 16 to insulation test.
j) MST 21: Temperature test: rewritten test procedure; removed short circuit mode; allow alternative indoor test method.
k) MST 23: Fire test: sub-clause rewritten; fire test requirements related to national building codes; moved optional test description to informative annex.
l) Added ignitability test MST 24.
m) MST 26: Reverse current overload test: changed specification of wooden board.
n) MST 32: Module breakage test: defined new dimensions of impactor to allow other filling compounds; consider variety of mounting techniques for glass breakage test; reduced impact height to only 300 mm; corrected diameter of opening according to referenced standard (65 cm^2 instead of 6.5 cm^2).
o) Added screw connection test MST 33.
p) Added peel test MST 35 for proof of cemented joints.
q) Added lap shear strength test MST 36 for proof of cemented joints.
r) Added materials creep test MST 37.
s) Added PV module test sequence with moisture and UV to stress polymers to Figure 1.
t) Added new sequence for Pollution Degree (PD) testing (sequence B1).
u) Added annex: Recommendations for testing of PV modules from production

रजिस्ट्री सं. डी.एल.- 33004/99 REGD. No. D. L.-33004/99

भारत का राजपत्र
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असाधारण
EXTRAORDINARY

भाग II—खण्ड 3—उप-खण्ड (ii)
PART II—Section 3—Sub-section (ii)

प्राधिकार से प्रकाशित
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नवीन एवं नवीकरणीय ऊर्जा मंत्रालय

आदेश

नई दिल्ली, 27 जनवरी, 2025

का.आ. 492(अ).—भारतीय मानक ब्यूरो अधिनियम, 2016 (2016 का 11) की धारा 17 और धारा 25 की उप-धारा (3) के साथ पठित धारा 16 की उप-धारा (1) तथा (2) द्वारा प्रदत्त शक्तियों का प्रयोग करते हुए और सौर फोटोवोल्टेइक प्रणालियां, उपकरण और संघटक माल (अनिवार्य रजिस्ट्रीकरण के लिए आवश्यकताएं) आदेश, 2017 के अधिक्रमण में, ऐसे अधिक्रमण से पूर्व किए गए या लोपित विषयों को छोड़कर, भारतीय मानक ब्यूरो से परामर्श के पश्चात, केन्द्रीय सरकार का यह मत है कि जनहित में ऐसा करना आवश्यक या उचित है, एतद्द्वारा निम्नलिखित आदेश जारी करती है:

2. **संक्षिप्त शीर्षक और प्रारंभ** - (1) इस आदेश का नाम "सौर प्रणालियां, उपकरण तथा संघटक माल आदेश, 2025" होगा।

(2) यह सरकारी राजपत्र में इसके प्रकाशन की तिथि से 180 दिनों की समाप्ति पर प्रवृत्त होगा।

3. **परिभाषाएं**- (1) इस आदेश में, जब तक कि संदर्भ से अन्यथा अपेक्षित न हो -

(क) **"अधिनियम"** से भारतीय मानक ब्यूरो अधिनियम, 2016 (2016 का 11) अभिप्रेत है।

(ख) "समुचित प्राधिकारी" का अर्थ है सचिव, नवीन एवं नवीकरणीय ऊर्जा मंत्रालय, भारत सरकार द्वारा प्राधिकृत नवीन एवं नवीकरणीय ऊर्जा मंत्रालय या उसके अधीनस्थ या संबद्ध कार्यालयों से कोई भी अधिकारी, जो निदेशक या वैज्ञानिक 'ई' स्तर से कम का न हो।

(2) इन शब्दों और पदों को, जो यहां प्रयुक्त हैं और परिभाषित नहीं हैं परंतु उस आधार पर बनाए गए अधिनियम और विनियमों में परिभाषित हैं, का क्रमशः वही अर्थ होगा जो इसके अंतर्गत बनाए गए अधिनियम और विनियमों में है।

4. **मानक से अनुरूपता और मानक चिह्न का अनिवार्य उपयोग** - नीचे दी गई तालिका के कॉलम (2) में निर्दिष्ट माल या वस्तु उक्त तालिका के कॉलम (3) में दिए गए संगत भारतीय मानक के अनुरूप होंगे और भारतीय मानक ब्यूरो (अनुरूपता मूल्यांकन) विनियम, 2018 की योजना-II के अनुसार ब्यूरो से लाइसेंस के तहत 'मानक चिह्न' धारण करेंगे:

बशर्ते कि इस आदेश में कुछ भी माल या वस्तु पर लागू नहीं होगा, जैसा कि निर्यात के लिए उक्त तालिका के कॉलम (2) में निर्दिष्ट है।

5. **प्रमाणन और प्रवर्तन** - उक्त तालिका के कॉलम (2) में निर्दिष्ट माल या वस्तु के संबंध में, ब्यूरो, प्रमाणन और प्रवर्तन प्राधिकारी होगा। उक्त तालिका के कॉलम (2) में उल्लिखित मानक चिह्न धारित माल या वस्तु के लिए भारतीय मानक से अनुरूपता सुनिश्चित करने के लिए बाजार निगरानी ब्यूरो अथवा ब्यूरो द्वारा नवीन एवं नवीकरणीय ऊर्जा मंत्रालय के परामर्श से अधिसूचित एजेंसियों द्वारा की जाएगी।

6. **सौर फोटोवोल्टेइक, प्रणालियां, उपकरण और संघटक माल (अनिवार्य पंजीकरण के लिए आवश्यकताएं) आदेश, 2017 के साथ समवर्ती प्रचलन** - यह आदेश सौर फोटोवोल्टेइक, प्रणालियां, उपकरण और संघटक माल (अनिवार्य पंजीकरण के लिए आवश्यकताएं) आदेश, 2017 के प्रावधानों के अनुसार वैध लाइसेंस वाले मौजूदा माल या वस्तुओं के लाइसेंस की वैधता को प्रभावित नहीं करेगा तथा मानक चिह्न के उपयोग के लिए लाइसेंस का नया पंजीकरण या मंजूरी तथा उनकी संबंधित वैधता अवधि की समाप्ति के बाद पंजीकरण का नवीकरण, इस आदेश के प्रावधानों के अंतर्गत किया जाएगा।

7. **उल्लंघन पर जुर्माना** - कोई भी व्यक्ति, जो इस आदेश के प्रावधानों का उल्लंघन करता है, उक्त अधिनियम के प्रावधानों के तहत दंडनीय होगा।

8. **निदेश जारी करने की शक्ति** - समुचित प्राधिकारी, इस आदेश के प्रयोजनों को पूरा करने के लिए आवश्यक समझी जाने वाली जानकारी देने के लिए माल या वस्तुओं के विनिर्माण, आयात, वितरण, बिक्री, किराये, पट्टे, भंडारण, माल या वस्तुओं की बिक्री के लिए प्रदर्शन में संलिप्त किसी भी व्यक्ति को निर्देश जारी कर सकता है।

9. **निदेशों का अनुपालन** - प्रत्येक व्यक्ति, जिसे इस आदेश के अधीन कोई निदेश जारी किया जाता है, वह ऐसे निदेश का अनुपालन करेगा।

10. **लाइसेंस प्रदान करना** - इस आदेश के तहत लाइसेंस प्रदान करने के प्रयोजन के लिए, (@मानक परीक्षण शर्तें अर्थात् एसटीसी) मानदंड को निर्धारित करने अर्थात मोनो क्रिस्टेलाइन सिलिकॉन टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल (एसआई वेफर आधारित) प्रौद्योगिकी एवं थिन-फिल्म टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल [Cd, Te, a-Si, Cu(In, Ga) (S, Se)2] प्रौद्योगिकी के लिए 18% की दक्षता (@ एसटीसी) तथा पोली क्रिस्टेलाइन सिलिकॉन टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल (एसआई वेफर आधारित) प्रौद्योगिकी के लिए 17% की दक्षता (@ एसटीसी) न्यूनतम दक्षता के लिए शर्त लागू की गई है। सौर पीवी मॉड्यूल की दक्षता (@ एसटीसी % में) की गणना "मॉड्यूल के अधिकतम पीवी आउटपुट के फोटोवोल्टेइक मॉड्यूल के आगे की सतह के क्षेत्रफल के अनुपात के रूप में की जाएगी जैसा कि इसके बाहरी किनारों (m2 में) और 1000, अर्थात दक्षता (@ एसटीसी % में)=[Pmax (वाट में)/{1000xA (m^2 में)}] x100 द्वारा परिभाषित किया गया है"। मॉड्यूल के अधिकतम पीवी आउटपुट और क्षेत्रफल को एसटीसी में आईएस 14286 में गणना के अनुसार उल्लिखित किया जाएगा।

तालिका

क्रम सं.	माल या वस्तु	भारतीय मानक	भारतीय मानक का शीर्षक
(1)	(2)	(3)	(4)
1.	क्रिस्टेलाइन सिलिकॉन टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल (एसआई वेफर आधारित)	IS 14286 (भाग-1): 2023/IEC 61215-1: 2021	टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल – डिजाइन योग्यता और प्रकार अनुमोदन भाग 1 परीक्षण आवश्कताएं
		IS 14286 (भाग-1/खंड-1): 2023/IEC 61215-1-1: 2021	टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल – डिजाइन योग्यता और प्रकार अनुमोदनः भाग 1 परीक्षण की आवश्यकताएं: क्रिस्टेलाइन सिलिकॉन फोटोवोल्टेइक (पीवी) मॉड्यूलों के परीक्षण के लिए खंड 1 विशिष्ट आवश्यकताएं
		IS/IEC 61730-1: 2016	फोटोवोल्टेइक (पीवी) मॉड्यूल सुरक्षा योग्यता भाग 1 निर्माण के लिए आवश्कताएं
		IS/IEC 61730-2: 2016	फोटोवोल्टेइक (पीवी) मॉड्यूल सुरक्षा पात्रता भाग 2 (परीक्षण के लिए) आवश्यकताएं
2.	थिन फिल्म टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल [CdTe, a-Si, Cu (In,Ga) $(S,Se)_2$]	IS 14286 (भाग-1): 2023/ IEC 61215-1: 2021	टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल - डिजाइन योग्यता और प्रकार अनुमोदन: भाग 1 परीक्षण आवश्यकताएं
		IS 14286 (भाग-1/खंड-2): 2023/ IEC 61215-1-2: 2021 + Amd-1:2022	टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल - डिजाइन योग्यता और प्रकार अनुमोदन भाग-1 परीक्षण आवश्यकताएं खंड-2 थिन-फिल्म कैडमियम टेल्यूराइड (CdTe) आधारित फोटोवोल्टेइक (पीवी) माड्यूलों के परीक्षण के लिए विशेष आवश्यकताएं
		IS 14286 (भाग-1/खंड-3): 2023/ IEC 61215-1-3: 2021 + Amd-1:2022	टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल - डिजाइन योग्यता और प्रकार अनुमोदन भाग 1 परीक्षण आवश्यकताएँ खंड-3 थिन फिल्म एमोर्फस सिलिकॉन आधारित फोटोवोल्टेइक (पीवी) मॉड्यूलों के परीक्षण के लिए विशेष आवश्यकताएं
		IS 14286 (भाग-1/खंड-4): 2023/ IEC 61215-1-4: 2021 + Amd-1:2022	टेरेस्ट्रियल फोटोवोल्टेइक (पीवी) मॉड्यूल - डिजाइन योग्यता और प्रकार अनुमोदन भाग 1 परीक्षण आवश्यकताएं खंड-4 थिन-फिल्म Cu(In,Ga)(S,Se)2 आधारित फोटोवोल्टेइक (पीवी) मॉड्यूलों के परीक्षण के लिए विशेष आवश्यकताएं
		IS/IEC 61730-1: 2016	फोटोवोल्टेइक (पीवी) मॉड्यूल सुरक्षा योग्यता भाग 1 निर्माण के लिए आवश्यकताएं
		IS/IEC 61730-2: 2016	फोटोवोल्टेइक (पीवी) मॉड्यूल सुरक्षा योग्यता भाग 2 परीक्षण के लिए आवश्यकताएं
3.	भंडारण बैटरी	IS 16270: 2023	सौर फोटोवोल्टेइक अनुप्रयोग के लिए सेकन्डरी सेल और बैटरियां - सामान्य आवश्यकताएं और परीक्षण के तरीके
4.	फोटोवोल्टेइक विद्युत प्रणाली में उपयोग के लिए विद्युत इन्वर्टर	IS 16221 (भाग-2): 2015/ IEC 62109-2: 2011	फोटोवोल्टेइक विद्युत प्रणालियों में उपयोग के लिए विद्युत कन्वर्टरों की सुरक्षा भाग 2 इन्वर्टरों के लिए विशेष आवश्यकताएं

		IS/IEC 61683: 1999	फोटोवोल्टेइक प्रणालियां - पावर कंडीशनर - दक्षता मापने के लिए प्रक्रिया
5.	यूटिलिटी–इंटरकनेक्टड फोटोवोल्टेइक इन्वर्टर	IS 16221 (भाग-2): 2015/ IEC 62109-2: 2011	फोटोवोल्टेइक विद्युत प्रणालियों में उपयोग के लिए विद्युत कन्वर्टरों की सुरक्षा भाग 2 इन्वर्टरों के लिए विशेष आवश्यकताएं
		IS 16169: 2019/ IEC 62116: 2014	यूटिलिटी–इंटरकनेक्टड फोटोवोल्टेइक इनवर्टरों के लिए आइलैंडिंग रोकथाम उपायों की परीक्षण प्रक्रिया
		IS 17980: 2022/IEC 62891:2020	ग्रिड-कनेक्टड फोटोवोल्टेइक इन्वर्टरों की अधिकतम पावर पोइंट ट्रेकिंग दक्षता

टिप्पणी: तालिका के प्रयोजनार्थ, भारतीय मानक के नवीनतम संस्करण, जिसमें जारी किए गए और ब्यूरो द्वारा समय-समय पर अधिसूचित संशोधन शामिल हैं, ऐसी अधिसूचना के प्रकाशन की तिथि से लागू होंगे।

[फा. सं. 313-12/5/2022-एस एंड क्यूसी]

डॉ. ए. के. त्रिपाठी, सलाहकार/वैज्ञानिक-जी

MINISTRY OF NEW AND RENEWABLE ENERGY

ORDER

New Delhi, the 27th January, 2025

S.O. 492(E).—In exercise of the powers conferred by sub-sections (1) and (2) of section 16 read with section 17 and sub-section (3) of section 25 of the Bureau of Indian Standards Act, 2016 (11 of 2016) and in supersession of the Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017, except as respects things done or omitted to be done before such supersession, the Central Government after consulting the Bureau of Indian Standards, is of the opinion that it is necessary or expedient so to do in the public interest, hereby makes the following Order, namely:-

2. Short title and commencement- (1) This Order may be called the "Solar Systems, Devices and Components Goods Order, 2025".

(2) It shall come into force on the expiry of one hundred and eighty days from the date of its publication in the Official Gazette.

3. Definitions- (1) In this Order, unless the context otherwise requires –

(a) "Act" means the Bureau of Indian Standards Act, 2016 (11 of 2016);

(b) "appropriate authority" means any officer, not below the rank of Director or Scientist 'E' of the Ministry of New and Renewable Energy or its sub-ordinate or attached offices, authorised by the Secretary, Ministry of New and Renewable Energy, Government of India;

(2) Words and expressions used herein and not defined but defined in the Act and Regulations made thereunder, shall have the meanings respectively assigned to them in the Act and Regulations.

4. Conformity to the standard and compulsory use of standard mark- Goods or article specified in column (2) of the Table below shall conform to the corresponding Indian Standard given in column (3) of the said Table and shall bear the 'Standard Mark' under a licence from the Bureau as per the Scheme-II of the Bureau of Indian Standards (Conformity Assessment) Regulations, 2018:

Provided that nothing in this Order shall apply to goods or article, as specified in column (2) of the said Table meant for export.

5. Certification and enforcement- In respect of the goods or article specified in column (2) of the said Table, the Bureau shall be the certifying and enforcing authority. The market surveillance to ensure the conformity to Indian Standard for goods or article bearing Standard Mark mentioned in column (2) of the said Table shall be conducted by the Bureau or Agencies notified by the Bureau in consultation with the Ministry of New and Renewable Energy.

6. Concurrent running with the Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017- This Order shall not affect the validity of the licence of existing goods or article having valid licence as per the provisions of Solar Photovoltaics, Systems, Devices and Components Goods (Requirements for Compulsory Registration) Order, 2017 and the fresh registration or grant of licence to use standards mark and renewal of registration after expiry of their respective validity period shall be done under the provisions of this Order.

7. Penalty for contravention- Any person who contravenes the provisions of this Order shall be punishable under the provisions of the said Act.

8. Power to issue directions- The appropriate authority may issue directions to any person engaged in the manufacture, import, distribution, sale, hire, lease, storage, or exhibit for sale of the goods or articles to give information as deemed necessary, for carrying out the purposes of this Order.

9. Compliance of directions- Every person to whom any direction is issued under this Order shall comply with such direction.

10. Grant of licence-For the purpose of grant of licence under this Order, a condition is introduced to set minimum efficiency (@ Standard Test Conditions i.e., STC) criteria, i.e., efficiency (@STC) of 18% for Mono Crystalline Silicon Terrestrial Photovoltaic (PV) modules (Si wafer based) technology & Thin-Film Terrestrial Photovoltaic (PV) Modules [Cd Te, a-Si, Cu(In, Ga)(S, Se)2] technology and efficiency (@STC) of 17% for Poly Crystalline Silicon Terrestrial Photovoltaic (PV) modules (Si wafer based) technology. The efficiency (@ STC in %) of Solar PV module shall be calculated as "ratio of maximum PV output of the module to the Area of the front surface of a photovoltaic module as defined by its outer edges (in m2) and 1000 i.e., $Efficiency$ (@ STC in %) = [$Pmax$ (in Watt)/{1000×A (in m^2)}] ×100." The maximum PV output and area of the module shall be referred as calculated in IS 14286 at STC.

Table

S. No.	Goods or articles	Indian Standard	Title of Indian Standard
(1)	(2)	(3)	(4)
1.	Crystalline Silicon Terrestrial Photovoltaic (PV) modules (Si wafer based)	IS 14286 (Part 1) : 2023/ IEC 61215-1 : 2021	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval Part 1 Test Requirements
		IS 14286 (Part 1/Sec 1) : 2023/ IEC 61215-1-1: 2021	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval: Part 1 Test Requirements: Sec 1 Special requirements for testing of crystalline silicon photovoltaic (PV) modules.
		IS/IEC 61730-1 : 2016	Photovoltaic (PV) Module Safety Qualification Part 1 Requirements for Construction
		IS/IEC 61730-2 : 2016	Photovoltaic (PV) Module Safety Qualification Part 2 Requirements for Testing
2.	Thin-Film Terrestrial Photovoltaic (PV) Modules [CdTe, a-Si, $Cu(In,Ga)(S,Se)_2$]	IS 14286 (Part 1) : 2023/ IEC 61215-1 : 2021	Terrestrial Photovoltaic (PV) modules - Design qualification and type approval: Part 1 test requirements.
		IS 14286 (Part 1/Sec 2): 2023/ IEC 61215-1-2: 2021 + Amd-1:2022	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval Part 1 Test Requirements Section 2 Special requirements for testing of thin-film cadmium telluride (CdTe) based photovoltaic (PV) modules
		IS 14286 (Part 1/Sec 3) : 2023/ IEC 61215-1-3 : 2021 + Amd-1:2022	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval Part 1 Test Requirements Section 3 Special requirements for testing of thin-film amorphous silicon based photovoltaic (PV) modules
		IS 14286 (Part 1/Sec 4): 2023/ IEC 61215-1-4: 2021 + Amd-1:2022	Terrestrial Photovoltaic (PV) Modules - Design Qualification and Type Approval Part 1 Test Requirements Section 4 Special requirements for testing of thin-film Cu (In,Ga)(S,Se)2 based photovoltaic (PV) modules
		IS/IEC 61730-1: 2016	Photovoltaic (PV) Module Safety Qualification Part 1 Requirements for Construction
		IS/IEC 61730-2: 2016	Photovoltaic (PV) Module Safety Qualification Part 2 Requirements for Testing
3.	Storage Battery	IS 16270: 2023	Secondary Cells and Batteries for Solar Photovoltaic Application — General Requirements and Methods of Test
4.	Power inverters for use in photovoltaic power system	IS 16221 (Part 2): 2015/ IEC 62109-2: 2011	Safety of Power Converters for Use in Photovoltaic Power Systems Part 2 Particular Requirements for Inverters
		IS/IEC 61683: 1999	Photovoltaic systems - Power conditioners -

			Procedure for measuring efficiency
5.	Utility-Interconnected Photovoltaic Inverters	IS 16221 (Part 2): 2015/ IEC 62109-2: 2011	Safety of Power Converters for Use in Photovoltaic Power Systems Part 2 Particular Requirements for Inverters
		IS 16169: 2019/ IEC 62116: 2014	Test Procedure of Islanding Prevention Measures for Utility-Interconnected Photovoltaic Inverters.
		IS 17980: 2022/IEC 62891:2020	Maximum Power Point Tracking Efficiency of Grid Connected Photovoltaic Inverters

Note: For the purpose of the Table, the latest version of Indian Standard including the amendments issued thereof and notified by the Bureau from time to time, shall apply from the date of such notification.

[F.No. 313-12/5/2022-S AND QC]
Dr A. K. TRIPATHI, Adviser/Scientist-G

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