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Solceller – Datablad och produktinformation för skivor av kristallint kisel för tillverkning av solceller

Solar wafers –

Data sheet and product information for crystalline silicon wafers for solar cell manufacturing

Som svensk standard gäller europastandarden EN 50513:2009. Den svenska standarden innehåller den officiella engelska språkversionen av EN 50513:2009.

Standarder underlättar utvecklingen och höjer elsäkerheten

Det finns många fördelar med att ha gemensamma tekniska regler för bl a säkerhet, prestanda, dokumentation, utförande och skötsel av elprodukter, elanläggningar och metoder. Genom att utforma sådana standarder blir säkerhetskraven tydliga och utvecklingskostnaderna rimliga samtidigt som marknadens acceptans för produkten eller tjänsten ökar.

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**Solar wafers -
Data sheet and product information for crystalline silicon wafers
for solar cell manufacturing**

Tranches de silicium solaires -
Fiche technique et information produit
sur les tranches au silicium cristallin
pour la fabrication de cellules solaires

Solarscheiben -
Datenblattangaben und Produktinformation
für kristalline Silizium-Scheiben
zur Solarzellenherstellung

This European Standard was approved by CENELEC on 2008-12-01. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CENELEC member.

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CENELEC members are the national electrotechnical committees of Austria, Belgium, Bulgaria, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: avenue Marnix 17, B - 1000 Brussels

Foreword

This European Standard was prepared by the Technical Committee CENELEC TC 82, Solar photovoltaic energy systems.

The text of the draft was submitted to the Unique Acceptance Procedure and was approved by CENELEC as EN 50513 on 2008-12-01.

The following dates were fixed:

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| – latest date by which the EN has to be implemented at national level by publication of an identical national standard or by endorsement | (dop) | 2009-12-01 |
| – latest date by which the national standards conflicting with the EN have to be withdrawn | (dow) | 2011-12-01 |
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1 Scope

This document describes data sheet and product information for crystalline silicon (Si) – solar wafers and measurement methods for wafer properties.

The document intends to provide the minimum information required for an optimal use of crystalline silicon wafers in solar cell manufacturing. Clauses 5 to 7 describe the data sheet information with technical specifications of the silicon solar wafer with all essential characteristics.

The product information concerns packaging, labelling and storage, and implies the commitment to inform about major changes of the product and in the manufacturing process. This data is needed for the processing of silicon solar wafers to solar cells. Clauses 8 to 16 describe measurement methods for the characteristic properties specified in the data sheet.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 50461, Solar cells – Datasheet information and product data for crystalline silicon solar cells

EN ISO/IEC 17025, General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025)

DIN 5043-2, Radioactive luminescent pigments – Method of measurement and designation

DIN 50431, Testing of semiconductor materials – Measurement of the resistivity of silicon or germanium single crystals by means of the four probe/direct current method with collinear array

DIN 50432, Testing semi-conducting inorganic materials – Determining conduction type for silicon or germanium using a standard test or thermosonde probe (withdrawn)

DIN 50434, Testing of materials for semiconductor technology – Detection of crystal defects in mono-crystalline silicon using etching techniques on [111] and [100] surfaces (ASTM F 47)

DIN 50438-1, Testing of materials for semiconductor technology – Determination of impurity content in silicon by infrared absorption – Part 1: Oxygen

DIN 50438-2, Testing of materials for semiconductor technology – Determination of impurity content in silicon by infrared absorption – Part 2: Carbon

DIN 50441-1, Testing of materials for semiconductor technology – Determination of the geometric dimensions of semiconductor wafers – Part 1: Thickness and thickness variation

DIN 50441-5, Testing of materials for semiconductor technology – Determination of the geometric dimensions of semiconductor wafers – Part 5: Terms of shape and flatness deviation

DIN 4760, Form deviations – Concepts – Classification system

DIN 4768, Identification of roughness characteristics R_a , R_z , R_{max} with electrical testing machines – terms, conditions of measurement

DIN 879-1, Verification of geometrical parameters – Dial indicator for linear measurement – Part 1: With mechanical indication

DIN 4774, Measurement of wave depth with electrical contact stylus instruments