Conformity Assessment for Photovoltaic Systems

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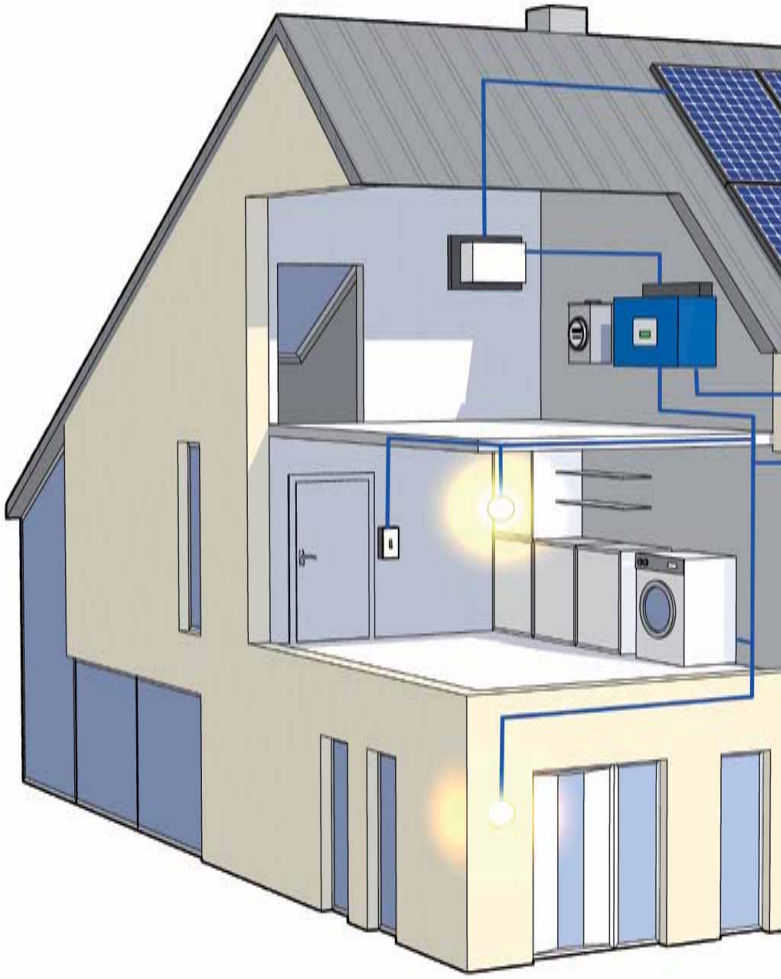
Where the sum of the individual parts is just as importa



Photovoltaic Modules

There are two main types of Photovoltaic modules, Crystalline silicon and thin film Amorphous silicon. While all of these technologies are used to generate electricity from solar energy, there are some differences that exist in their manufacturing process, and these differences affect the performance of the modules. We also conduct conformity assessments for the mechanical load of the frame (wind, hail and snow) and the stability of the module once mounted using the designated method.

Conformity Assessment

Manufacturers achieve a smooth entry into Europe and other markets by marking the module with the TUVdotCOM ID and DIN mark. The following standards are applicable:
IEC/EN 61215; Crystalline silicon terrestrial photovoltaic modules- Design qualification and type approval.
IEC/EN 61730; Photovoltaic module safety qualification.
IEC/EN 61646; Thin film terrestrial photovoltaic modules.

Photovoltaic Junction Box

The primary function of the Photovoltaic junction box is to distribute the power output from the Photovoltaic module. It is imperative that the heat generated is sufficiently dissipated through the diodes.

Conformity Assessment

Testing for the junction box includes harsh environmental testing with exposure to high temperature and high humidity as well as Ultra Violet radiation. Other tests conducted include Ingress Protection tests and a High Voltage Impulse test to make certain that it is water tight to ensure a good insulation.

Introducing The DIN Mark For The Complete Photovoltaic System

Show your innovation and dedication to safety and quality with the world renowned German certification mark.

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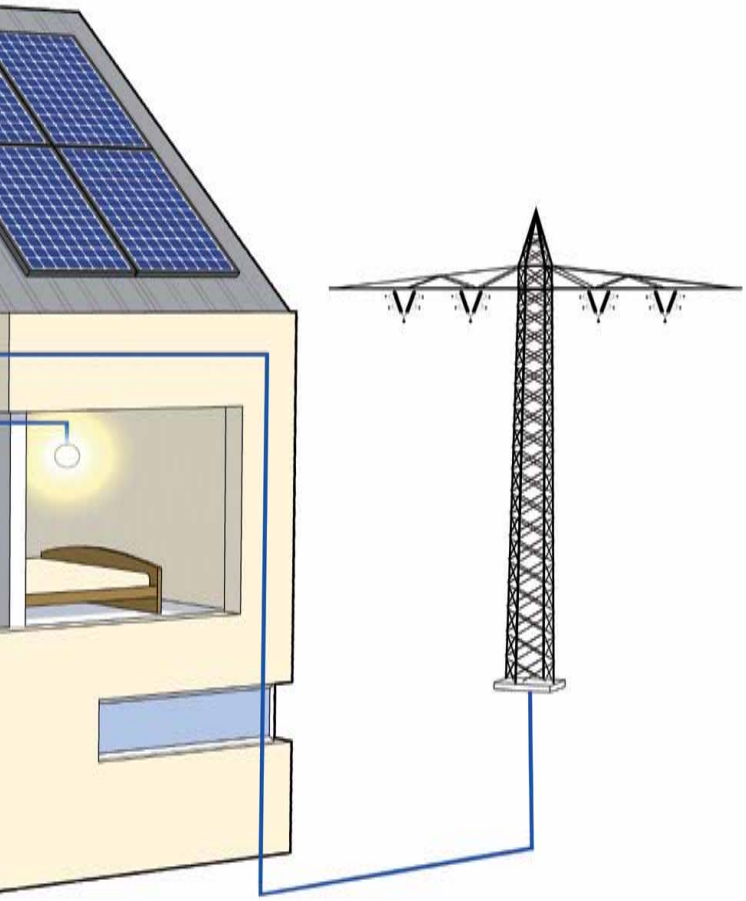

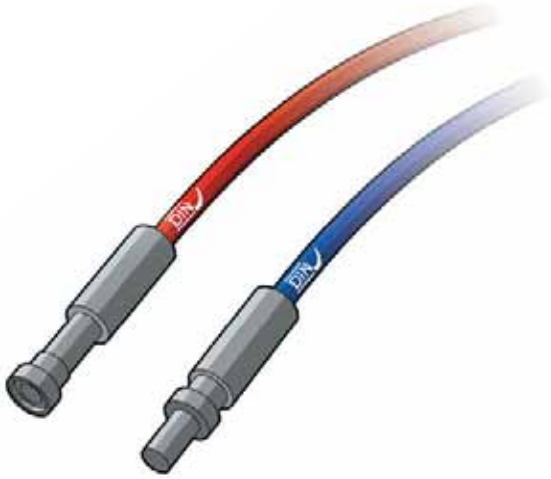

Photovoltaic Cables and Connectors

The Photovoltaic cables and connectors carry the power output from the junction box to the inverter and must therefore ensure a safe insulation so that no hazardous electric shock could occur. The insulation must be designed so that it can withstand an over voltage surge.

Conformity Assessment

These components are tested together with the junction box as they form one set and are also exposed to the harsh environmental test conditions.

Photovoltaic Inverters

Taking the electricity generated from the Photovoltaic modules and converting it into use for the electrical grid, or to be used for stand alone applications, is the main purpose of the inverter. Protection against electric shock, Energy hazards, output harmonic distortion and automatic disconnection are some of the main considerations for testing the Photovoltaic inverters.

Conformity Assessment

The TÜV Rheinland Group provides complete conformity assessments for inverters. The test requirements for the PV Inverter involve testing the automatic disconnection device between the generator and the public low-voltage grid. TÜV Rheinland's test programs are based on the latest development of draft standards.

As The Global Market Leader In PV Testing, You Know You Can Trust Us

Depending on your own preferences and premises, we offer you two choices. Firstly, conformity assessments at your own production site following the International Laboratory Accreditation Cooperation (ILAC) procedures. Secondly, fully comprehensive conformity assessment centers that cover all the environmental outdoor exposure and EMC testing. Our GTAC (Global Technology Assessment Center) facilities offer you a one-stop solution. TÜV Rheinland is a global leader in this area of certification.

Our Extended Services for PV Systems Make Us: Precisely the Right Choice

We offer you numerous other value-adding services.

Brand Risk Management

A service that protects your brand and ensures the authenticity of your PV systems

The problem facing the PV industry is the selling of counterfeit modules and components within the first and second hand markets. TÜV Rheinland's Product Authentication Platform provides authenticity assurance through tracking and tracing. Our Platform allows you to not only check the path the product has taken, but allows you to look forward and ensure a secure trail. Highly secure authentication codes verify the origins and validity of your PV module, as well as ensure personalization; in other words that the received product is the one intended for the consumer. The code can be scanned with mobile phones or entered manually into our website, where it is verified, thus removing the threat of stolen or counterfeited goods being sold and reassuring customers of the authenticity of the PV systems.

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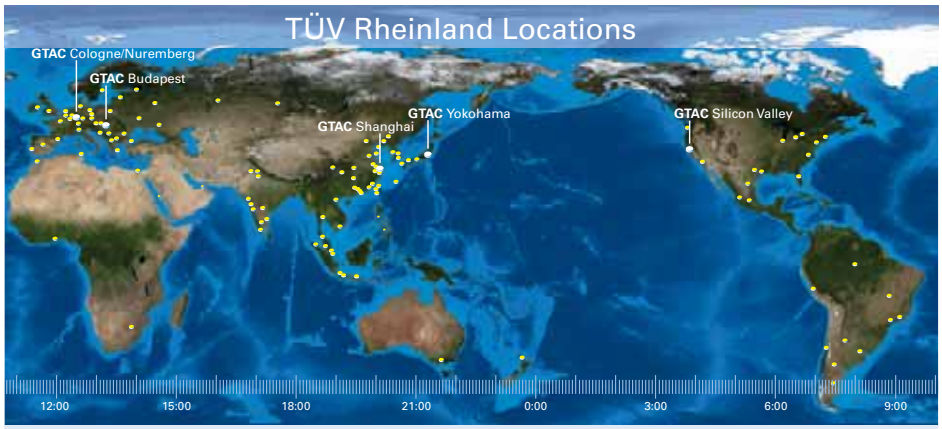
TUVdotCOM

The mark that speaks to customers about the benefits of your PV panels

Every PV module is different and every PV module has certain qualities that make it better. The TUVdotCOM service differentiates your products from the competition by highlighting its benefits through the use of keywords which are displayed with the TUVdotCOM ID, allowing consumer to see your points of differentiation. TUVdotCOM products receive a unique ID number allowing users to search for the PV panel on our website and see which tests were performed, assuring quality and safety. Let us help you stand out from the competition.

www.tuvdotcom.com



5 Global Technology Assessment Centers (GTAC)
Our network provides 24-hour access to all TÜV Rheinland Group services & capabilities

Office & Laboratory Location

- Represented worldwide with more than 12,000 employees in more than 60 countries at over 340 locations.
- Our business portfolio includes: Industrial Services, Mobility, Products, Life Care as well as Education & Consulting and Systems.
- The goal and guiding principle of the corporation – the sustainable development of safety and quality – is achieved through a strong commitment to Corporate Social Responsibility and ethical values.
- TÜV Rheinland Group has more than 130 years of experience.

For contact details please visit
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