



# BIPV - Qualification of building-integrated PV

<b>PV module qualification</b>	<b>Benchmarking</b>	<b>Components</b>
<b>PV module certifications</b>	<b>BIPV</b>	<b>PV plants</b>
<b>Performance characterisation</b>	<b>Mounting systems</b>	<b>Certification of installation firms</b>
<b>Stress tests</b>	<b>Calibration</b>	<b>Solar thermal systems</b>
<b>Quality assurance</b>	<b>R&amp;D and consulting</b>	<b>Other product tests</b>

In order that you combine the different functional requirements of building technique and electrotechnics in your product, we support you with our wide range of services from development testing to qualification and certification and beyond.

## Safety and reliability. That's our specialty.

Building-integrated photovoltaic has been growing in importance for solar energy applications. The system requirements on construction and electrical products are governed by national and international directives and standards. An identical measure of reliability and safety must be provided by building-integrated PV modules and solar-thermal collectors.

The experts from TÜV Rheinland can assist you in this endeavour.

### Your advantages:

- You convey your high safety standards.
- You lower your liability risk through documented safety standards.
- You gain competitive advantages with a neutral test mark.
- You document implementation of the legal requirements. As a constant and active representative in the standardisation and association committees, you stay in touch with the latest trends.
- As a constant and active representative in the standardisation and association committees, we are always in touch with the latest trends.

## Your photovoltaics can do more. We guarantee it.

The integration of two disciplines opens up new applications and markets for photovoltaic in the form of construction and electrical products. TÜV Rheinland will help you find the right measure of safety and reliability for these products and to document these qualities for your customers. We provide approval-relevant testing for the following applications and functions:

- Electrical safety
- Roof and facade integration
- Overhead installation
- Clamp and retaining connections
- Noise and heat protection
- Fire resistance
- Leak tightness against wind driven rain

The area of application of building-integrated photovoltaic is constantly growing and therefore the requirements on the products and their installation as well. As a leading test centre, TÜV Rheinland will support you in this demanding market comprehensively and sustainably. We have the overview of national and international market requirements and can cover them all. Already today, we conduct such unique tests as the driving rain test, along with the greatest variety of fire tests.

### You can rely on us for the following tasks:

- Construction suitability tests
- Certification
- Window and facade tests
- Yield and glare reports
- Structural analysis and stability of modules and mounting systems
- Noise and heat protection regulations
- Fire safety
- Site evaluation
- Mechanical, thermal and electrical safety
- Power checks (Power Controlled)
- Risk assessment
- Long-term and reliability studies

### Our range of services:

- Testing and assessment of building-integrated PV products according to the current standard prEN 50583: ‚PV in Buildings‘
- Verification of building-integrated PV glass as laminated safety glass (EN 14449) for facades and overhead installations
- Leak tightness against driving rain and inhomogeneous snow loads of roof-integrated systems
- Checking of flammability of construction products
- Determination of the noise insulating and absorption properties
- Dynamic wind stress tests according to window and facade standards
- Checking of the static foundations and verifications of stability
- Determination of heat and light transmission
- Determination of reflection properties
- Derivation of the adhesive strength with tensile and shear load tests
- Development and application of adapted test methods for building-integrated PVs
- Adapted application of IEC 61730/61215/61646 to building-integrated PVs
- Applied research, e.g. monitoring and evaluation of the temperature and performance characteristics on roofs or facades
- Global competence centre for building-integrated PVs – Technical knowledge of worldwide applied standards from the world of electrical and construction specialists in co-operation with our global testing laboratories
- Personal consulting on all issues regarding reliability and safety in building-integrated PVs

## Always a good sign.



This mark stands for all the information about products, services and systems that are tested, certified or inspected by TÜV Rheinland.

Transparent, available anytime worldwide – powerful and unique.  
The TÜV Rheinland test mark.



**TÜVRheinland®**  
Precisely Right.

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