

## Standard Requirements for the Installation of Photovoltaic Plants

**In the setting up of photovoltaic power supply systems a multitude of standards and regulations are to be observed.**

The following standard requirements are listed in extract.

### IEC 60 364-7-712

**Electrical installations of buildings –  
Part 7-712: requirements for special installations or locations –  
Solar photovoltaic (PV) power supply systems**

#### PV module

712.511.1

PV modules shall comply with the requirements of the relevant equipment standard, e.g. IEC 61215 for crystalline PV modules. PV modules of class II construction or with equivalent insulation are recommended if  $U_{oc,STC}^{(1)}$  of the PV strings exceeds 120 V DC.

#### Generator junction boxes

712.413.2

Protection by use of **class II** or equivalent insulation should preferably be adopted on the DC side.

712.536.2.2.5.1

All junction boxes (PV generator and PV array boxes) shall carry a warning label indicating that active parts inside the boxes may still be live after isolation from the PV inverter.

712.512.1.1

Electrical equipment on the DC side shall be suitable for direct voltage and direct current.

### IEC 61 439-1

**Low-voltage switchgear and controlgear assemblies -  
Part 1: General rules**

10.9.4 Testing of enclosures made of insulating material

For assemblies with enclosures made of insulating material, an additional dielectric test shall be carried out,...

For this additional test, the test voltage shall be equal to 1.5 times the values indicated in Table 8.

In Table 8, a test voltage of 3110 V DC for assemblies up to 1000 V DC is required.

The result for distribution boards of insulating material is a **test voltage of 3110 V x 1.5 = 4665 V**.

#### Solar inverters

712.434.1

The PV supply cable on the AC side shall be protected by a short circuit or an overcurrent protective device installed at the connection to the AC mains.

712.536.2.2.1

In the selection and erection of devices for isolation and switching to be installed between the PV installation and the public supply, the public supply shall be considered the source and the **PV installation shall be considered the load.**

