

# Creepage distance of double-glass modules





## Overview

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How do you determine clearance and creepage distances?

To determine the required clearance and creepage distances for a given design, engineers can refer to tables provided in various safety standards. These tables offer minimum distances based on factors such as voltage, pollution degree, and material group. Consider an electrical device with a working voltage of 250 V AC and a pollution degree of 2.

What is the difference between clearance and creepage?

Clearance and creepage are two parameters that are related to the distance required between conductors on a circuit board. The distance between two conductors or nodes, measured in air, is referred to as the clearance distance. IPC-2221 defines optimum clearances related to different aspects of the circuit board.

How do I find the minimum creepage distance?

Use the appropriate IEC standard table to find the minimum creepage distance based on voltage, pollution degree, and material group. Alternatively, online calculators tailored to IEC 62368-1 or other standards can simplify this process by inputting your parameters.

What are the standards for PCB creepage?

The International Electrotechnical Commission (IEC) provides widely recognized guidelines for creepage distance. The most relevant standard for PCB design is IEC 60950-1 (now largely replaced by IEC 62368-1 for IT and AV equipment), which outlines creepage and clearance requirements based on voltage, pollution degree, and material group.

What is a good creepage distance?

**Wider Spacing:** Always exceed the minimum creepage distance for high-voltage designs. For a 1000V application under Pollution Degree 2, IEC



standards might suggest a creepage distance of 8mm or more, depending on the material.

What is the minimum creepage distance for insulating material?

Now, let's consider the same device with a working voltage of 250 V AC, a pollution degree of 2, and an insulating material from Material Group IIIa. To find the minimum creepage distance, we can use Table 2 below, which is also adapted from the IEC 60664-1 standard: For our example, the minimum required creepage distance is 4.0 mm.



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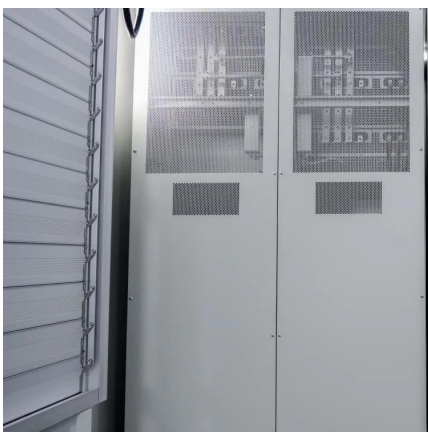
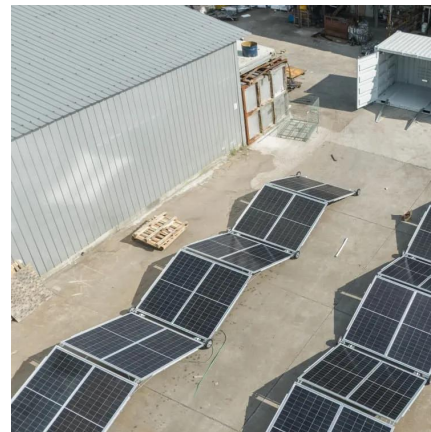


### Practical Engineering: Material Group Selection and ...

Often overlooked during the development of appropriate spacings (creepage distances) for safety-certified products is the failure to account ...

### Creepage distance of photovoltaic solar panels

Creepage distance of photovoltaic solar panels  
What is the new IEC 61730 standard for solar PV module safety? Subsequently the new IEC 61730, the standard for Solar PV module safety and ...



### Glass Insulator / Standard Profile / U70BL / 70 kN / 320 mm / 127 ...

Glass Insulator / Standard Profile / U70BL / 70 kN / 320 mm / 127 mm Detailed Explanation of Glass Insulator Standard Profile U70BL Technical Specifications- \*\*Specified Mechanical ...

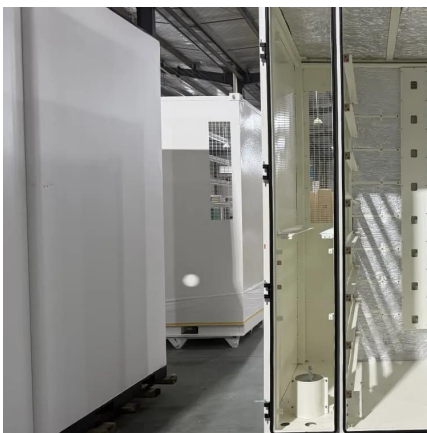
### What is meant by Creep Distance in Insulator Design?

What is meant by Creep Distance in Insulator Design? By Jon Rennie You might have heard the





term creepage or creep distance when referring to insulator design and specifications. So what ...



[????????? , Coil Technology Corporation](#)

???? (Creepage):????????????????????  
???????????????? 2.2 ?????? ?????????????????? ...

### Detailed PCB safe distance

Safe distance, including clearance ( spatial distance ), creepage distance ( creepage distance ) and distance through insulation  
Clearances : two adjacent conductor or a ...



[PCB Design: Getting Creepage and Clearance Righ](#)

2. Creepage distance: the shortest distance between two adjacent conductors or one conductor and the surface of the adjacent motor casing measured along the insulating surface. ...



## IPC-2221 Standards in PCB Design

Creepage, on the other hand, refers to the distance between conductors or nodes along the surface of an insulator. Creepage in PCB design As per IPC-2221, space between ...



## Is there any standard for solar cell distance to the

Is there any standards which indicates the distance of the cells to the frame of a PV module? This might be related to the mechanical loads on the corners or ...

## PCB Creepage Calculator

Calculation and measurement of creepage distance based on UL60950-1 2nd Edition and IEC 62368-1.



## Clearance and Creepage in PCB Design

Creepage goes through an insulated surface, and clearance passes through air. When factoring in the individual specifications, clearance and creepage distance are typically ...



### Understanding creepage and clearance in harsh...

Understanding creepage Creepage, as shown in Figure 4, is the shortest path between two conductive materials along the surface of an ...



### **IPC-2221 Standards in PCB Design**

Comprehensive technical guide on solar panel cell-to-edge spacing requirements based on IEC standards. Learn optimal distances for different module types and environmental ...

### **Optimize Solar Panel Performance Through Edge Spacing Design**

Comprehensive technical guide on solar panel cell-to-edge spacing requirements based on IEC standards. Learn optimal distances for different module types and environmental ...





## IPC-2221 Standards in PCB Design

Clearance and creepage are two parameters that are related to the distance required between conductors on a circuit board. The distance between two conductors or ...

## Demystifying clearance and creepage distance for high ...

These component insulation standards addresses VIOSM, RIO, CIO, qpd, distance through insulation (DTI), common-mode transient immunity (CMTI), etc. However, insulation grades - ...



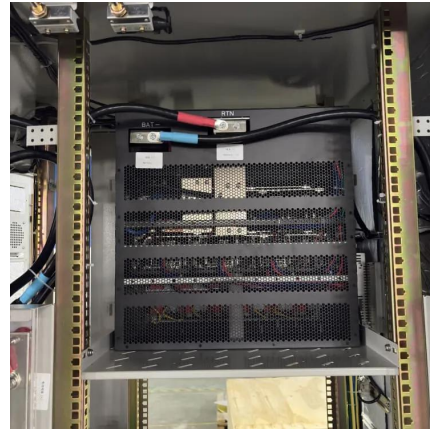
## Clearance and Creepage Distances: Rules and ...

How can I determine the required clearance and creepage distances for my design? Engineers can refer to tables provided in safety ...

## Creepage Distance: Your Comprehensive Guide for PCB Design ...

One critical factor to consider is creepage distance --the shortest path between two conductive parts measured along the surface of the insulating material. Understanding ...





## What is clearance and creepage distance of insulation?

2. Requirement of distance 2.1 Definition of clearance and creepage Clearance: In the "line of sight" distance or the shortest air path ...



## CUAL ENGINEERING 2020

12 Kv 10 KA Metal Oxide Arrestor Rated Voltage:  
21KV Creepage Distance: 370+-10 mm  
(31mm/Kv) 8/20 Lighting current residual  
voltage: 33Kv 30/60 Switching current residual ...



## Coordination of Insulation

Insulation can be implemented as clearance, creepage, solid insulation or a combination of these three. The air space between conductive parts is called clearance. It must be so large that ...



## Clearance and Creepage Distances: Rules and Calculation

How can I determine the required clearance and creepage distances for my design? Engineers can refer to tables provided in safety standards such as IEC 60664-1, ...



## Creepage Distance: Your Comprehensive Guide for ...

One critical factor to consider is creepage distance --the shortest path between two conductive parts measured along the surface of the ...

## Clearance and Creepage Distance in PCB Design: Essential ...

For this reason, determining the proper creepage distance is crucial for high-voltage and safety-critical PCB applications. The required creepage depends on working voltage, pollution ...



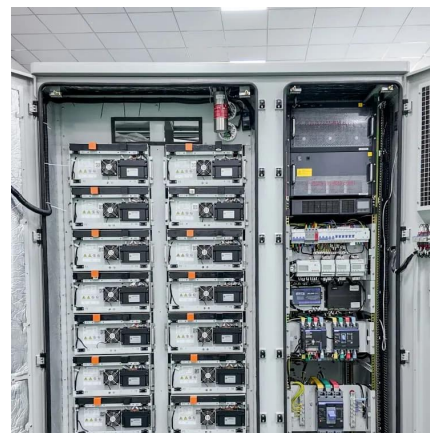
## Standards for PV Modules and Components Recent ...

New standards under development include qualification of junction boxes, connectors, PV cables, and module integrated electronics as well as for testing the packaging used during transport of ...



## Measurement of clearance and creepage distances ...

The UL 1059 standard distinguishes application groups for connection systems, i.e. for terminals and plug-in connectors, and gives a dedicated description of the requirements for clearance ...



## Reviewing Insulator Design Criteria, Operating ...

[CLICK TO ENLARGE](#) [CLICK TO ENLARGE](#) 3. Profile Suitability: Glass & Porcelain Insulators Tables 2 & 3 in IEC TS 60815-2 give simple merit ...

## Is there any standard for solar cell distance to the

Is there any standards which indicates the distance of the cells to the frame of a PV module? This might be related to the mechanical loads on the corners or leakage current and PID.





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