

# What is IP44? Electrical Enclosure Protection Explained

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**Zheng Ji**

Senior Electrical Engineer at PINEELE

Zheng Ji has over 18 years experience designing medium and high voltage equipment

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**IP44** is a widely used ingress protection rating for electrical enclosures and control panels. Defined by the international **IEC 60529** standard, the IP rating system helps determine how well a cabinet or box resists the intrusion of solids and liquids. An IP44-rated cabinet is suitable for many indoor and semi-outdoor applications, providing a reliable balance of dust and water resistance.

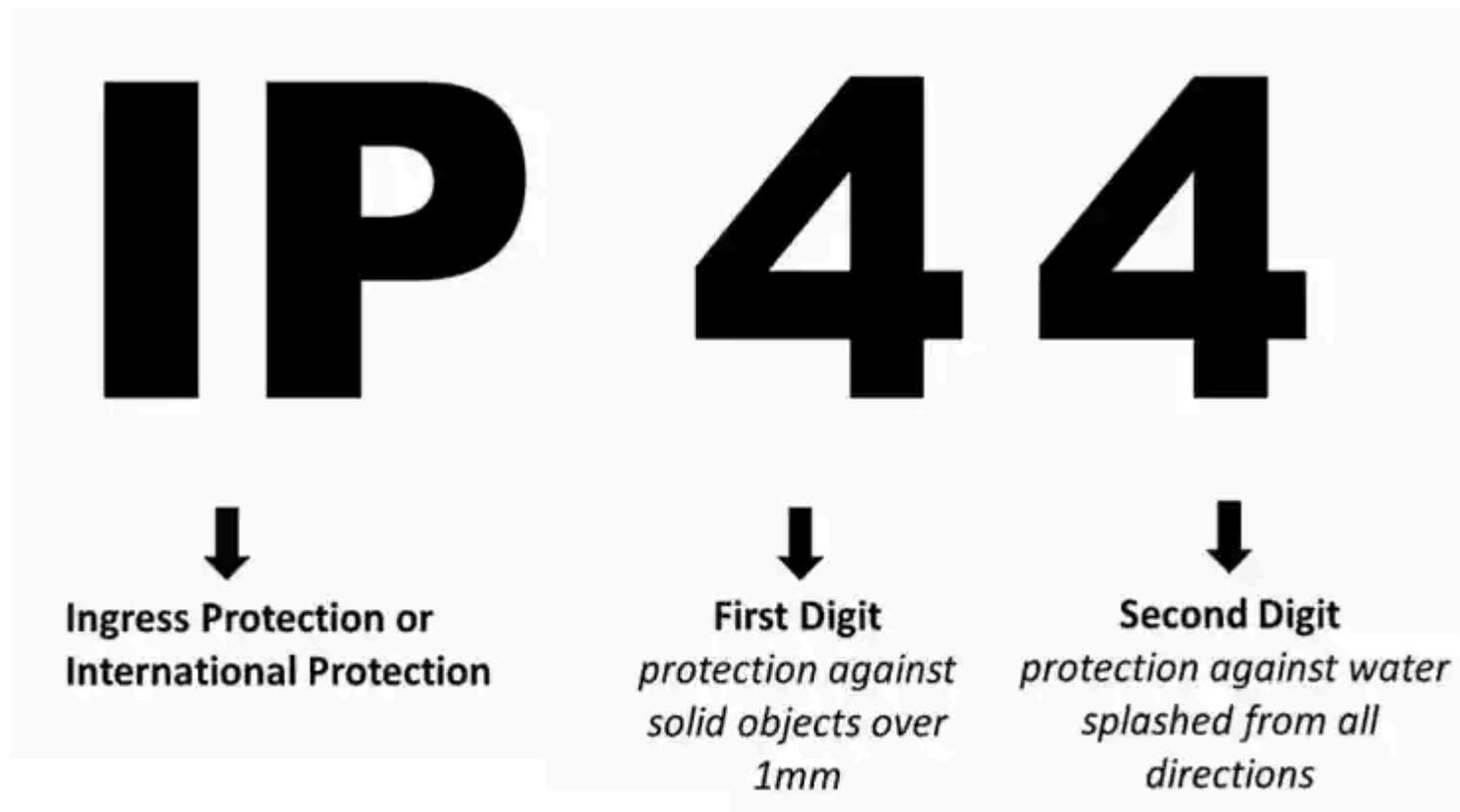
## What Does IP44 Mean?

The IP44 code consists of two digits:

- **4** (first digit) – Protection against solid objects larger than 1 mm, such as wires or small tools.
- **4** (second digit) – Protection against water splashing from all directions.

This means IP44 enclosures are well-protected from accidental contact and splashing water, but not from high-pressure jets or full immersion.

## Example Use Case Image



This type of cabinet is often used in commercial buildings, industrial facilities, and areas that may be exposed to moisture but not heavy rain or water jets.

## Common Applications of IP44 Enclosures

- Low voltage switchgear in factories and warehouses
- Power distribution boards in commercial buildings
- Electrical control boxes in indoor swimming pool zones
- Light fixtures in hotel bathrooms or kitchens
- Wall-mounted enclosures in metro stations or covered outdoor spaces

## IP44 vs Other IP Ratings

IP RATING	SOLID OBJECT PROTECTION	WATER PROTECTION	APPLICATION ENVIRONMENT
IP20	>12.5mm (fingers)	No protection	Indoor only
IP33	>2.5mm	Light spray	Light-duty use
<b>IP44</b>	>1mm	Splashing water	Semi-outdoor, indoor damp
IP54	Dust-protected	Splashing water	Light outdoor use
IP65	Dust-tight	Water jets	Harsh outdoor or industrial

# Compliance & Certification

IP44 is standardized under **IEC 60529** and is commonly referenced in:

- **CE** certifications for export to Europe
- **EN 62208** for empty enclosures
- **UL Type 3R/12 equivalent** in the U.S.
- **NEMA enclosure ratings** for North America

Top global manufacturers such as **Schneider Electric**, **Siemens**, and **ABB** include IP44 cabinets in their product lines.

## Advantages of IP44 Enclosures

- Good basic protection for general-purpose use
- Suitable for environments with condensation, dripping, or occasional splashes
- Widely accepted by international codes and standards
- Cost-effective compared to higher IP ratings like IP65/IP66
- Ideal for both plastic and metal cabinet designs

## When to Choose IP44

Use IP44 if:

- Your equipment is indoors or under partial shelter
- Exposure to water is limited to accidental splashes
- You need a cabinet that prevents access to live components
- Cost and weight savings are important for the application

Avoid IP44 in:

- Heavy rain, jet water, or wash-down environments
- Outdoor applications with dust storms or direct sunlight
- Environments requiring sealed or pressurized enclosures

## FAQ

### Q1: Can I use IP44 cabinets outdoors?

A: Only in protected outdoor environments such as under a canopy or inside a weatherproof enclosure. For direct exposure, use IP65 or higher.

### Q2: Is IP44 waterproof?

A: No. IP44 offers splash resistance but does not protect against water jets or immersion.

### Q3: What's the difference between IP44 and IP54?

A: IP54 adds dust protection, making it more suitable for environments with airborne particles or light dust exposure.

**IP44** is a versatile ingress protection rating that suits many light-industrial and commercial applications. It provides reliable protection against tools, wires, and splashes, and complies with major international standards. For manufacturers like **PINEELE**, offering IP44-rated electrical cabinets guide ensures compatibility with both indoor and semi-outdoor use, especially in export markets across Europe, Southeast Asia, and the Middle East.

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