

# YSHIELD

## EMR - PROTECTION

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### Grounding informations

#### Important safety guidelines

**Only skilled electricians listed in the register of your electricity supplier are permitted to execute grounding measures!** Pay attention to the following points: Protective measures against electric shock to DIN 57100/VDE 0100 part 410 + part 540, grounding to DIN/VDE 0100 part 410 + part 540, visual inspection and process testing to DIN/VDE 0100 part 610 part 4+5 and EMC to VDE 0100.

**Grounding measures are only permitted in TNS or TT networks! Grounding measures may never be executed in network forms with combined PEN wiring!**

**A leakage/fault circuit breaker (FI/RCD) with less than 30 mA must be installed.** If possible, a FI/RCD with 10 mA should be retrofitted!

Proper grounding sequence: ❶ With a 4 mm<sup>2</sup> cable (16 mm<sup>2</sup> for facade shielding) directly at the potential equalization. ❷ With a 2.5 mm<sup>2</sup> cable at the PE lead in the electric installation, e.g. with our grounding plug EPS (included in ESW+, ESV+, ESS) in a power socket. ❸ At a (heating) pipe that is connected to the potential equalization. Check the low impedance! Install a decal information in the heating room that indicates to the shielding!

YSHIELD refuses any liability for damages resulting from incorrectly executed installations and groundings. **The performing electrician is personally liable for all measures!**

#### Grounding system with press studs



Many of our grounding components and products can be connected directly to each other with our grounding cables EK! We use stiff closing, very stable sockets and press studs normally used in boat-building. **If local regulations require it, the plugs can be mechanically fixed.** Mounting hint for the cable ties: Fold it to a curve 5 mm away from the front end so you can easily push it through both holes in the grounding plate!

#### Grounding sets ESW(+)/EPW

Grounding set for shielding paints, fleeces and nettings in the interior. Per each continuous connected area (per room), one ESW is needed.

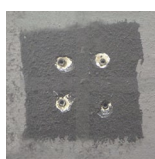
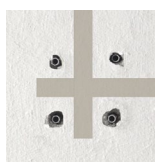
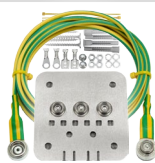
❶ Mounting at an easily accessible point, close to the final ground connection.

❷ **Drill 6 mm holes.** Make sure you do not drill cables in the proximity of power outlets and switches!

❸❹ **For shielding paints:** Stick grounding strap EB2 as shown under „Grounding straps“. **Paint the area with the shielding paints** as recommended in the corresponding technical data sheet. After drying, apply a second coat under and around the plate. **Let it dry.**

❺❻ **For nettings, fleeces:** Stick grounding strap EB as shown under „Grounding straps“.

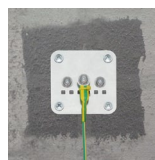
**Adhere the materials on the area with some overlap** as recommended in the corresponding technical data sheets. Our dispersion glue DKL90 is electrically conductive, why there is a low electrical resistance after drying, which is necessary for proper grounding. This also applies to various wallpaper paste, but there is no guarantee on that! **Let it dry.** Drill out holes again.



❹ **Insert dowels and screw down the plate tightly.**

❺ **Mask the grounding plate, it is not allowed to overpaint it! Overpaint the area with commercial wall paints, wallpapers or use fine plaster as recommended in the corresponding technical data sheets.**

❻ **Press down the grounding plug tightly.** Fix it with a cable tie. **Alternatively install own cables 2.5-4 mm<sup>2</sup>** with the included terminal lugs.

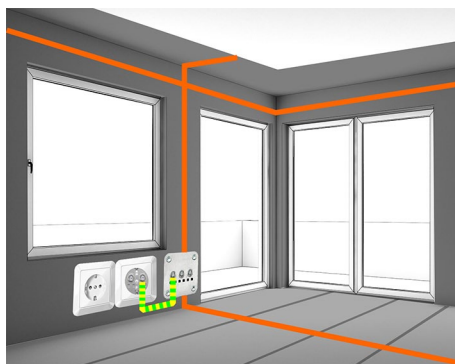


#### Grounding straps EB / EB2

Self-adhesive grounding straps for shielding paints, fleeces and nettings in the interior.

❶ **The glue on EB is electrically conductive. Therefore the EB can be stuck under and on the materials. Application under and on nettings, fleeces** to connect the limited width of material. With an adhesive force of 3N/cm, it sticks relatively poor on difficult under-grounds (e.g. plasterboards). Use a primer first!

❷ **The glue on EB2 is electrically non-conductive. Therefore the EB2 can be stuck only under the materials. Application under shielding paints** to bridge cracks in the underground. With an adhesive force of 10 N/cm it sticks very well even on difficult undergrounds.



The grounding straps must be pressed down tightly to adapt perfectly to the underground. Mounting: Cross all areas once and connect them with each other, starting from ESW (EPW). The strap can be stuck under the baseboard e.g. if there are no doors.

#### Grounding set ESA

Grounding set for shielding paints in the exterior. For each continuous connected area two ESA are required.

❶ Mounting at an easily accessible position, near to the final ground connection point.

❷ **The underground has to be smoothed** on 20 x 20 cm with a fine filler (fine mortar) that is suitable for your facade. It is important that the plate has an absolute plane underground for a good contact to the shielding paint. **Let the fine filler dry.**

❸ **Drill 6 mm holes.** Make sure you don't drill cables! **Insert dowels.**

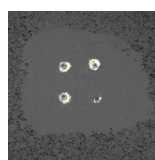
❹ **Paint the area with the shielding paint,** as recommended in the corresponding technical data sheet. After drying, apply a second coat under and around the plate. **Let it dry.**

❺ **Screw down the plate tightly. Stick the protective housing around the plate** with the enclosed waterproof glue. Use much glue, especially on the cable outlet, that the plate is completely protected against water all around.

❻ **Paint the area with water-repellent facade paints,** as recommended in the corresponding technical data sheet.

❼ As required extend the cable end. The enclosed shrink tubing is filled with a glue which seals the cable clamps waterproof.

❽ The grounding of facades has to be included in the potential equalization of the building to which the lightning protection systems are connected to as well! Use lightning protection components!



#### Grounding sets ESR / EPR

Grounding set to connect our grounding components to grounded (heating) pipes.

❶ Put the plate on an unisolated position on the (heating) pipe and screw it down with the both worm drive clamps. ❷ Press down the grounding plug tightly. Fix it with a cable tie.



#### Grounding sets ESV / EPV

Grounding set for loosely laid nettings, fleeces, etc.

❶ Unscrew the wing nut and disassemble the both plates. ❷ Take a textile cutter or a knife (risk of injury!) and pierce a small hole of 4 mm in the material. ❸ Insert the plate with the screw-nut from behind through the hole. ❹ Put on the front plate and screw it down with the wing nut. ❺ Press down the grounding plug tightly and fix it with a cable tie.



#### Stainless steel tape ELB

Grounding tape for stainless steel gauzes, under plaster or in drywall constructions.

❶ The groundable materials have to be screwed, stapled or glued with 5 cm overlap. ❷ To electrically connect the limited width of the materials, the steel tape has to be screwed across all paths as often as possible, especially at the overlapping positions. **In case of processing under plaster you should not plaster over the tape before you have screwed it!** ❸ Screw on your own grounding cable with a suitable M6-screw, screw-nut and cable clamp M6 directly to the steel tape.



#### Grounding cables EK

Grounding cables for connecting our grounding components and groundable products.

To directly connect ESW and EPW (on walls), ESV and EPV (for loosely laid nettings, fleeces and fabrics), ESR and EPR (on pipes), canopies (Perspective, Silver-Tulle), floor mats with integrated press studs, etc.



#### Grounding set EST

Grounding plug for loosely laid nettings, fleeces, canopies, floor mats, etc.

**Suitable only in countries with CEE-7/4 \* and CEE-7/7 \*\* power sockets, see list below.**

❶ Only a licensed electrician is allowed to push this grounding plug into a power outlet, see „Important safety guidelines“! ❷ The mounting of the plates is generally the same as with grounding set ESV!



#### Plug in ESS / ESW+ / ESV+ / EPS

Grounding plug for power sockets, included in following grounding sets: ESW+, ESV+, ESS, EPS.

**Suitable only in countries with CEE-7/4 \* power sockets, see list below.**

❶ Open and remove the screw of the socket cover. ❷ Only a licensed electrician is allowed to put / screw this grounding plug in a power outlet, see „Important safety guidelines“! ❸ To fix this plug permanently in the power socket, it can be screwed together with the socket cover using the enclosed screw. ❹ Press down the grounding plug tightly and fix it with a cable tie.



#### \* Countries with CEE-7/4 sockets

„German system“: Afghanistan, Algeria, Andorra, Austria, Bosnia-Herzegovina, Bulgaria, Croatia, Estonia, Finland, Germany, Greece, Hungary, Iceland, Indonesia, Italy, Korea, Latvia, Lithuania, Luxembourg, Macedonia, Moldova, Montenegro, Netherlands, Norway, Portugal, Romania, Russia, Serbia, Slovenia, South Korea, Spain, Sweden, Syria, Turkey, Ukraine.

#### \*\* Countries with CEE-7/7 sockets

„French system“: Belgium, Czech Republic, France, Monaco, Morocco, Poland, Slovakia, Tunisia.