

SAFETY AND HYGIENE REGULATIONS



Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

GROUNDING

CODE

SHR 502

Date:

December 2009

Revision:

00

Page:

1 of 3

IN ACCORDANCE WITH THE TECHNICAL GUIDE OF ROYAL DECREE 614/2001, ON THE MINIMUM PROVISIONS FOR PROTECTING THE HEALTH AND SAFETY OF WORKERS FROM ELECTRICAL RISKS

SEQUENCE OF OPERATIONS FOR GROUNDING

A) High voltage (HV)

- Visually inspect the condition of the equipment for grounding.
- Check that a suitable voltage tester is used to verify that there is no power.
- Visually inspect the condition of the personal protection equipment, especially insulating gloves for high voltage.
- Check that the voltage tester is working properly; focus in particular on the nominal voltage or range of voltages and the state of the batteries.
- Connect the ground clamp to the earth electrode (stake, fixed point, metal structure, etc.) and, if necessary, fully unroll the earth conductor.
- Put on insulating gloves, anti-flash glasses, a face shield, a safety helmet and, if necessary, a safety harness or body belt. (If the face shield is anti-flash, there is no need for anti-flash glasses).
- If possible, stand on an insulating mat.
- Check there is no power in any of the phases.
- Check again that the voltage tester is working properly.
- Connect the clamps from the grounding equipment to each of the phases using a hot stick.

B) Low voltage (LV)

- Check the voltage tester used to verify that there is no power.
- Visually inspect the condition of the equipment for grounding.
- Visually inspect the condition of the personal protection equipment, especially the insulating gloves for low voltage.
- Put on insulating gloves, anti-flash glasses, a face shield, a safety helmet and, if necessary, a safety harness or body belt. (If the face shield is anti-flash, anti-flash glasses are not required).
- Stand on a footstool, platform or insulating mat, when necessary.
- Check that there is no power between the phases and between each phase and neutral, using a voltage tester or a voltmeter (first check that the device is working properly).
- Connect the ground clamp to the protective conductor or to the ground connection in the low voltage switchboard.
- Connect the ground clamps to neutral and to each of the three phases using suitable hot sticks for low voltage in the case of overhead lines, or using the appropriate terminals in the case of low voltage switchboards (in the latter case, the connection can also be made using cartridges designed to be inserted in the fuse holders, once the fuses have been extracted from the switchboard).

SAFETY AND HYGIENE REGULATIONS



Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

GROUNDING

CODE

SHR 502

Date:

December 2009

Revision:

00

Page:

2 of 3

A TYPICAL SEQUENCE OF OPERATIONS TO REMOVE A GROUND

A) High voltage (HV)

- Carry out a visual inspection of the state of the personal protection equipment, especially insulating gloves for high voltage, and put them on.
- If possible, stand on an insulating mat.
- Use the hot stick to disconnect the clamps from each of the phases and then disconnect the clamp from the earth electrode (stake, fixed point or metal support structure).

The personal protection equipment required to remove the ground connection at high voltage is the same as that needed to make the connection.

B) Low voltage (LV)

- Check the condition of the personal protection equipment, especially the insulating gloves for low voltage, and put them on.
- Stand on the footstool, platform or insulating mat, when necessary.
- Disconnect the clamps from each of the phases (or the cartridges inserted in the fuse holders) and from the neutral.
- Disconnect the ground clamp from the protective conductor or from the ground connection in the low voltage switchboard.

The individual protection equipment required to remove the ground connection at low voltage is the same as that needed to make the connection.

SAFETY AND HYGIENE REGULATIONS



Servei de Prevenció de Riscos Laborals
UNIVERSITAT POLITÈCNICA DE CATALUNYA

GROUNDING

CODE

SHR 502

Date:

December 2009

Revision:

00

Page:

3 of 3

PERSONAL PROTECTION EQUIPMENT REQUIRED AT HIGH VOLTAGE (TO CONNECT AND REMOVE GROUND CONNECTIONS)

- Insulating gloves for high voltage
- Glasses or a face shield suitable for protecting against electric arcs
- Safety harness or body belt, if necessary
- Insulating safety helmet with a chinstrap
- Gloves that protect against mechanical risks and electric arcs

In addition, workers will use:

- Fireproof jacket
- Work footwear
- Footstool, platform or insulating mat
- Voltage tester
- Hot stick

In general, to protect against electric arc, use anti-flash shields so that anti-flash glasses do not need to be worn.



PERSONAL PROTECTION EQUIPMENT REQUIRED AT LOW VOLTAGE (TO CONNECT AND REMOVE GROUND CONNECTIONS)

- Insulating gloves for low voltage
- Glasses or a face shield suitable for protecting against electric arcs
- Safety harness or body belt, if necessary
- Insulating safety helmet with a chinstrap
- Gloves that protect against mechanical risks and electric arcs

In addition, workers will use:

- Fireproof jacket
- Work footwear
- Footstool, platform or insulating mat
- Voltage tester or voltmeter

