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| **FSE Instructions**  |   |
| Use of portable electrical equipment in confined conductive environments – Skagerak Kraft |
| Document owner | Tommy Wibetoe |  |   |
| Auditor | Mikael Tangen | Approval date | 27.06.2022 |

**1 PURPOSE**

To ensure safety when working with portable electrical equipment in confined conductive environments.

**2 SCOPE**

This procedure applies when working with electric hand tools/equipment in confined conductive environments. A confined conductive area with limited scope for movement is an area surrounded by metallic or conductive parts with which it is likely that a person’s major body parts will come into contact and where there is limited scope to avoid or break such contact.

**3 RESPONSIBILITY**

The Installation Manager is responsible for ensuring that this procedure is maintained and made known. Each line manager is responsible for making this procedure known in their unit. Each employee must receive the necessary training in the procedure and the tools/equipment required for the task. Only the Installation Manager can grant a deviation permit.

**4 DESCRIPTION OF WORK**

**Work lights:** A SELV (Safety Extra Low Voltage) circuit must be provided for portable hand lamps in confined conductive environments. This must be provided by means of a safety transformer with a maximum voltage of 50 V AC/120 V DC. All components must be **class III** (i.e. adapted to ELV circuits) and all cables must be double-insulated. The installation must **not** be earthed.

Alternatively, battery-powered work lights may be used.

**Tools:** For hand-held portable equipment in confined conductive environments, electrical separation must be ensured by means of a **safety transformer** with a voltage of less than 500 V and double-insulated cable. Only one tool/piece of equipment may be connected to a secondary winding on the isolating transformer. When using several tools at the same time, a safety transformer with multiple secondary windings must be used. The installation must **not** be earthed.

Alternatively, battery-powered equipment may be used.

When using angle grinders, drills etc., tools powered by compressed air are preferred, but more and more equipment is now available in battery-powered form. As far as possible, battery-powered equipment should be used.

# Welding:

A safety transformer (230 V AC/230 V AC) must always be used when welding in confined conductive spaces. The safety transformer must be placed outside the confined conductive space. A double-insulated cable must be used to connect the safety transformer to the welding equipment.

The welding equipment must have a maximum no-load voltage of 80 V DC. Equipment for such use is normally safety-checked annually for damage, leakage current etc. Insulated welding gloves must always be worn when welding in confined conductive spaces.



**Drying:** When drying waterways, the heat source must be placed on the outside of the confined conductive space. A safety transformer and a double-insulated supply cable to the heat source must be used.

**Electrical safety and the standard’s descriptions:**

NEK 400:2018