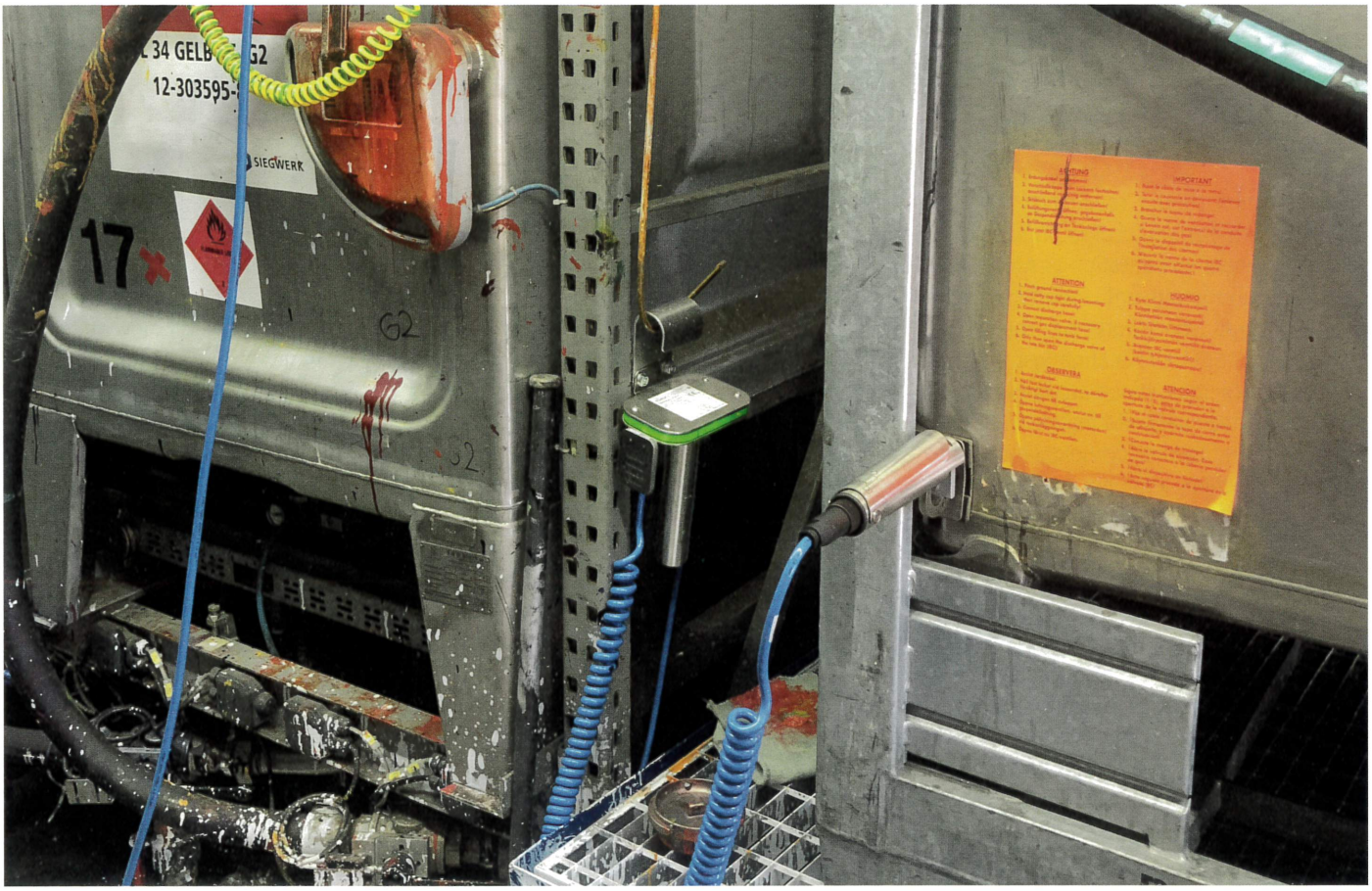


Active earth connection monitoring **in gravure printing**

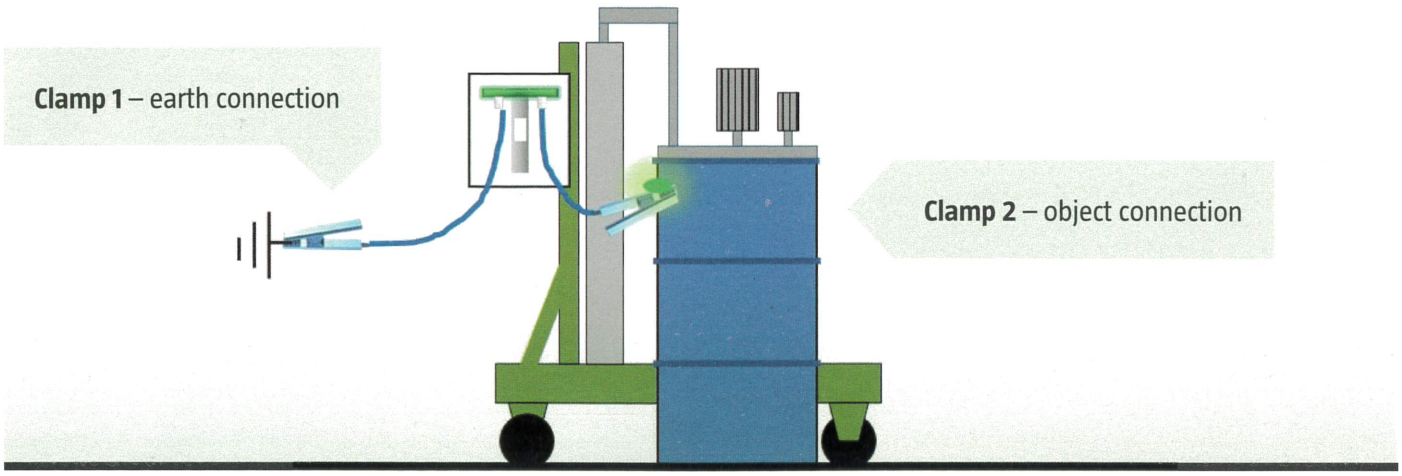
In industry, uncontrolled electrostatic discharges are said to be the third most common cause of explosions and fires when handling flammable substances. In gravure printing plants, solvent-based inks are almost exclusively used for flexible packaging, tobacco packaging and publication printing. On its way from the delivery truck to the press, the solvent-based ink is moved through several areas of the company.

The TerraLight active earth connection monitor shows a green light when the connection is safe

Wherever solvent-based ink is pumped, mixed or metered, dangerous electrostatic charges can build up which, in the event of a discharge, can lead to serious property damage and/or personal injury. To prevent this, simple passive 'ground' (US) or 'earth' (UK) clamps are not enough, as there is no certainty that they are correctly installed, and a maximum resistance of 10 ohms is specified in the explosion protection regulations. Instead, active ground/earth monitoring systems must be used in critical locations. The risk of a missing or insufficient connection is thereby significantly reduced.

On packaging and decorative gravure presses, each printing unit has an ink container, into which smaller quantities of ink are filled manually, usually with up to 25-litre buckets. Each printing unit is equipped with a number of passive grounding contacts. Depending on the print job, however, larger ink containers of up to 2000 litres (2 m^3) are also driven directly to the printing unit. The ink is then pumped directly into the ink fountain of the printing unit. Due to the large amount of solvent-based ink that is pumped directly at the printing press, grounding (earthing) should be controlled to significantly increase safety in this area.

Eltex Elektrostatik GmbH, a company which specialises in the use and control of electrostatic charge, based in Weil am Rhein, opposite Basle on the German-Swiss border, offers a device for this purpose under the brand name "TerraLight". It checks whether the grounding contact has a conductive connection to the object being grounded (for example, the clamp might be insulated from the container by dried-on ink deposits) and also whether it has a connection to the earth for potential equalization. This helps ensure reliable dissipation of static charges. In order to keep the installation complexity as low as possible, the device is battery-powered. An



The TerraLight monitors the equipotential bond between the ink barrel and the chassis of the press. The signal is also displayed on the TerraClamp

integrated wall holder enables quick and easy installation. The device indicates a correct connection with a green light signal. Continuous measurement of the low resistance of the potential compensation can be switched on or off. This allows for optimal adjustment to the corresponding grounding requirements, which optimizes battery life. The battery can last up to two years: the device lets you know promptly when a change is needed.

All active Eltex cable rewinders, grounding cables and ground clamps can be connected to the device. And on the new TerraClamp with its integrated LED light, the grounding signal is additionally displayed directly on the clamp.

Usually two units would be installed on a 10-colour press to bridge the distance from the monitoring system to the large ink tanks.

But even the smaller containers that are manually poured into the ink tray can be controllably grounded with this system. The system is approved for operation in Explosion Protection Zones Ex 0-2 and Ex 20-22.

More about electrostatic grounding (Equipotential Bonding, EPB), with a short explanatory film, may be found at:
www.eltex.de/en/lp-grounding GB ■