

Cenelectrex®

Earth-Rite FIBC Static Earthing System

The use of Flexible Intermediate Bulk Containers (FIBCs) has grown in line with the need for industry world-wide to transport and store powdered, flaked and granulated products more efficiently and economically. Whilst this has resulted in huge increases in productivity, it has also brought with it additional safety issues which should be addressed by all responsible plant operators.

One such issue concerns the dangerous build up of electrostatic charge during FIBC filling and discharging.

As the FIBC is filled there is a steady accumulation of charge which, if left unchecked, may result in electro-static discharges from the surface of the FIBC, or charging of adjacent isolated conductors by induction. This may in turn provide sufficient energy for ignition of certain flammable vapours and dust cloud concentrations, as well as being a potential source of a dangerous physiological shock. In order to control this problem, many FIBC manufacturers offer Type C anti-static or conductive constructions, using either interwoven conductive threads or other static dissipative materials. The container is then "earthed", typically using clamps attached to earthing tags, enabling charge to dissipate before it builds up to an excessive level.



However, even if a company has correctly specified Type C FIBCs, some uncertainties still remain:

- Has the operator correctly fitted the clamp and "earthed" the FIBC ?
- In the case of a "multi-trip" FIBC, has the bag lost some of its anti-static properties through damage or wear and tear ?
- Is the operator using the correct FIBC ?

To address these issues, the Cenelectrex® Earth-Rite FIBC system has been developed to enable users of Type C anti-static flexible intermediate bulk containers to check that the bag construction is within the correct specification and correctly earthed.

To suit various types of filling/discharging machinery the system is offered in two formats which monitor resistance either between the lifting loops and one earth clamp with respect to earth, or between two separate earth clamps with respect to earth. The system is ATEX approved Intrinsically Safe, making it suitable for use in all potentially explosive atmosphere zones.

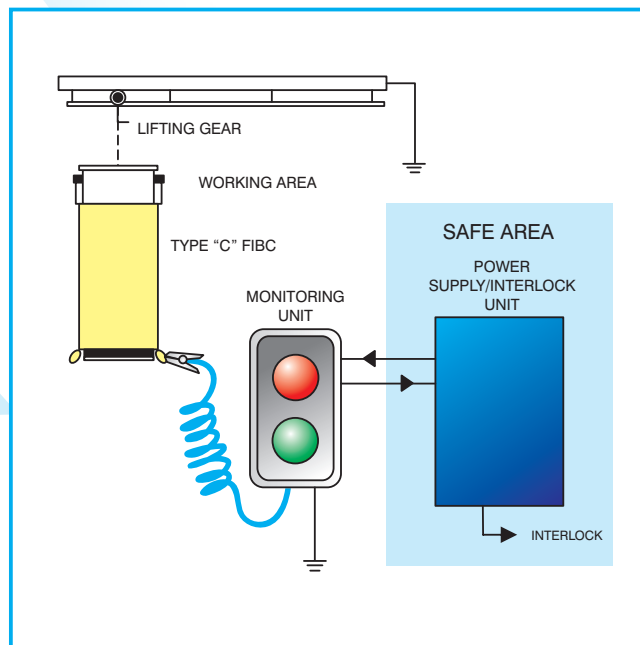
The Earth-Rite FIBC makes a valuable contribution to plant and personnel safety, helping eliminate dangerous accumulation of static charge which can result in fires/explosions within flammable atmospheres.

Earth-Rite FIBC

Technical Specification

Each Cenelectrex® Earth-Rite FIBC Static Earthing System is ATEX approved and consists of the following elements:

- Earth Monitoring Unit complete with earth status indicator LEDs
⊕ II 1 GD EEx ia IIC T4
- Insulated Monitoring Clamp c/w 5m Hytrel sheathed spiral cable (optional earthing clamp and spiral cable also available)
- Power supply unit complete with Intrinsically Safe Interlock contact
⊕ II (1) GD [Eex ia] IIC



System Description

The system is set to engage the product transfer circuit only when electrical resistance through the container is within the range of 0 to 1×10^8 Ohms. This feature complies with CENELEC CLC/TR 50404 relating to Type C FIBC Bags. Until these conditions are achieved, the system remains non-permissive. The resistance limits imposed by the system help personnel to observe correct and safe operating procedures.

The system utilises an insulated monitoring clamp which should be attached to the conductive earth loop of the FIBC. This clamp is connected to a chemical and abrasion resistant Hytrel-coated spiral cable and forms the monitoring connection so that the resistance through the bag and down to earth can be monitored. The static dissipation path is provided by the lifting hooks which should be connected to earth. If the lifting hooks cannot be used for earthing, the system verifies the resistance between the monitoring connection and an additional connection down to earth. The system also provides a visual indication of earth condition via red/green LEDs, and is designed to meet current EC directives.

In addition to Type C FIBCs, the system can also be used to monitor other static dissipative materials such as drum linings, kegs, hoses etc.

The Earth-Rite FIBC forms part of the Cenelectrex® range of Static Control Equipment for hazardous areas manufactured by Newson Gale Ltd. To discuss your own particular requirement please contact our Technical Sales Team, or the local distributor in your area.



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