

Artículo publicado sobre el:

RIESGO de utilizar

Pinzas "ATEX" con Interruptor interno

The Dangers of Earthing an **Already-Charged** object

This article sets out to dispel the myths surrounding "safe" ways to earth an object after it has become inadvertently charged with static electricity in a potentially flammable atmosphere. It draws from a paper given at Explorisk 2002 by M. Glor and



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Artículo y Comparativa

entre las Pinzas "ATEX" Cenelectrex y las Pinzas "ATEX" con Interruptor interno

Duración: 3 Hojas DIN A4

typical object to be earthed - possibly as much as a road tanker!

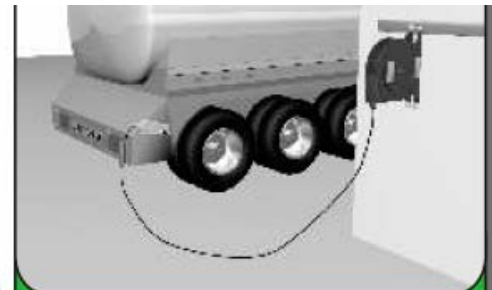
Hence, when the clamp comes close to the charged object, the capacitance of the clamp and cable will allow a spark to jump from the object, regardless of whether the isolation switch has broken the earth

getting too close to the drum) and if no flammable atmosphere is present, attach the clamp.

2. Leave the object for some considerable length of time, so that the charge can relax naturally. In practice, this could be several hours, depending on the situation.

Conclusion To quote Messrs. Glor and Schwenzfeuer "An incendive spark discharge cannot be prevented by including a high resistance into the earth circuit. Experiments have shown that the resulting spark discharges are still able to ignite solvent vapours.... Even if the earth cable is first disconnected from earth, an incendive discharge will appear."

Hence it can be seen that the best method of earthing moveable objects is to use regular ATEX approved clamps with continuous cables back to the earthing point. In order to prevent a static-generating operation from starting before the earthing clamp has been correctly attached, Earth Monitoring systems with interlocks to pumps, valves or mixers may be used, as recommended in the latest CENELEC "Code of Practice for the avoidance of hazards due to static electricity" (50404).



Note: whilst the tanker tyres are capable of dissipating the relatively low levels of static electricity generated during travelling, they should not be relied upon to cope with the high charging mechanism of prolonged product transfer (often at speed) to or from the tanker. In order to control this level of static charging, a low resistance earth connection should always be used.