

## INSULATING LINKS AND THEIR USE IN THE CONSTRUCTION INDUSTRY

The introduction of Insulated Links marks the most significant change in crane attachments for several decades because it represents a change in the 'state of the art'. The opportunity now exists to address the main cause of injury and deaths from crane accidents in the USA. The question now is in what circumstances should Insulating Links be used. Insulating links are set to make the biggest change to end-of-the-hook devices since hook swivels were marketed.

OSHA (Occupational Safety & Health Association) statistics show the Construction industry suffers more fatalities than any other industry. Within Construction, crane deaths are the most significant, accounting for 20% of all fatalities. Within crane-related deaths, death by electrocution again is the number one killer, accounting for almost 40% of the 500+ crane-related deaths in the ten years to 1994, three times more than any other cause. Since 1994 fatalities remain constant currently 29% in 2001.

ASME (Associated Society of Mechanical Engineers) mandates safety standard B30.5 which focuses on maintaining clear safety margins when operating in the environment of overhead power lines. OSHA offers the same advice. **However, the deaths continue and further precautions are necessary to reduce their incidence.** The B.30 standards give credence to use of insulating links, which are mentioned in various volumes. In the absence of such a definition it is possible that potentially lethal products could be made available for sale.

Until 1997 there has been no reliable protection against electrocution by power line contact. Insulating Links suffered from three shortcomings:

- \* They could not withstand power line voltages when exposed to rain or dirt.
- \* Their electrical protection deteriorated over time.
- \* They were unable to endure lifting loads common in the industry.

Tests have always demonstrated that the products available failed on all three counts. Alternative methods such as proximity indicators or boom tip cages do not offer adequate safety.

The electrical safety specification is given in International Standards for footwear and flooring to provide protection from exposure to electrical shock hazards from mains. The Standards allows a leakage current of up to 5 mA.

Advances in insulating techniques and the use of microprocessors to monitor their effectiveness have created a breakthrough in the functionality of Insulating Links. Insulating Links are now available that will withstand power line voltages in dirt and rain, monitor any deterioration in their own protection and retain their insulation under load. These links have been endorsed by one insurance company and promoted in a partnership program with another insurance company.

In this context, it is now appropriate to mandate the use of Insulating Links in the construction industry in any circumstance in which a crane may be in the proximity of overhead power lines. To this end it has been proposed:

**In a job site which includes a Danger Zone, as defined in section 5-3.4.5 of the 1994 ASME B30.5 standard, all cranes, or any part thereof, operating within the 'Danger Zone' or which the site manager determines have the capacity to move into that 'Danger Zone' shall be fitted with Insulating Links.**

**The Insulating Link must have the capacity to self-check and warn of its dielectric properties prior to and at any time during the lift. It shall meet the structural requirements of ASME B30.9. Furthermore it must have been tested under conditions which simulate the expected lift environment including appropriate current, voltages and contamination. Any current leakage during such tests should not exceed five milli-amps, (5 mA).**

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