

## Exploring the Techniques of Achieving Structural Electrical Continuity for Gas Plant Facilities

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**Abstract :** Electrical continuity of steel structure members is an essential condition to ensure equipotential and ultimately to protect personnel and assets in industrial facilities. The steel structure is electrically connected to provide a low resistance path to earth through equipotential bonding to prevent sparks and fires in the event of fault currents and avoid malfunction of the plant with detrimental consequences to the local and global environment. The oil and gas industry is commonly establishing steel structure electrical continuity by bare surface connection of coated steel members. This paper presents information pertaining to a real case of exploring and applying different techniques to achieve the electrical continuity in erecting steel structures at a gas plant facility. A project was supplied with fully coated steel members even at the surface connection members that cause electrical discontinuity. This was observed while a considerable number of steel members had already been received at the job site and erected. This made the resolution of the case to use different techniques such as bolt tightening and torqueing, chemical paint stripping and single point jumpers. These techniques are studied with comparative analysis related to their applicability, workability, time and cost advantages and disadvantages.

**Keywords :** coated Steel, electrical continuity, equipotential bonding, galvanized steel, gas plant facility, lightning protection, steel structure

**Conference Title :** ICEET 2022 : International Conference on Electrical Engineering and Technology

**Conference Location :** New York, United States

**Conference Dates :** October 06-07, 2022