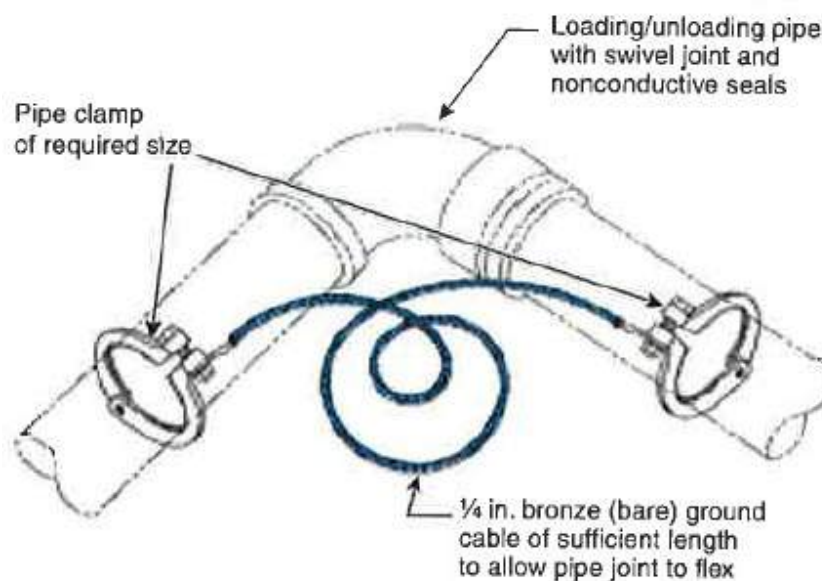


## 2.9. Bulk Loading and Unloading Facilities

- 2.9.1.** The bulk loading and unloading operations of Flammable and Combustible Liquids of tank cars and tank vehicles (Tankers) shall comply with the applicable general requirements of **Table 13.1. General Requirements**, this section and **Table 13.7. Loading and Unloading of Tankers**.

**Table 13.7.: Loading and Unloading of Tankers**

ITEM	REQUIREMENTS
<b>1. BONDING AND GROUNDING</b>	<ul style="list-style-type: none"> <li>i. Loading and unloading facilities that are used to load liquids into tank vehicles through open domes shall be provided with a means for electrically bonding to protect against static electricity hazards.</li> <li>ii. Such means shall consist of a metallic bond wire that is permanently electrically connected to the fill pipe assembly.</li> <li>iii. All parts of fill pipe assembly, including but not limited to, the drop tube, rack structure and piping shall form a continuous electrically conductive path that is directed to ground through the rack assembly or by conductive wiring.</li> <li>iv. The use of nonconductive materials in fill pipe assembly shall be avoided to prevent any electrical discontinuity.</li> <li>v. Loading and unloading facilities that are used to transfer liquids into and from tank cars through open domes shall be protected against stray currents by permanently bonding the fill pipe to at least one rail and to the facility structure, if of metal.</li> <li>vi. Multiple pipelines that enter the area shall be permanently bonded together.</li> <li>vii. In areas where excessive stray currents are known to exist, all pipelines entering the area shall be provided with insulating sections to electrically isolate them from the facility piping.</li> </ul>



**Figure 13.15.: Use of Jumper Wires around gasketed Swivel Joints to ensure continuity**