

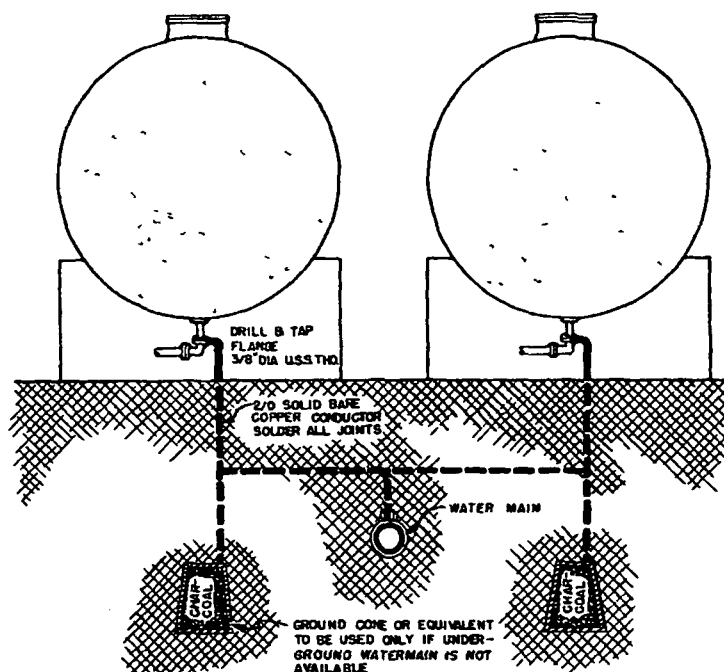


FIG 42-4 — Because some aboveground flammable liquid storage tanks are not inherently grounded, such tanks should be grounded by either one of these methods or by some other equally effective method

have been used interchangeably because of poor understanding of the terms. Bonding is done to eliminate a difference in potential *between objects*. The purpose of grounding is to eliminate a difference in potential *between an object and ground* (Fig 42-3). Bonding and grounding are effective only when the bonded objects are conductive.

Although bonding will eliminate a difference in potential between the objects that are bonded, it will not eliminate a difference in potential between these objects and the earth unless one of the objects possesses an adequate conductive path to earth. Therefore, bonding will not eliminate the static charge, but will equalize the potential between the objects bonded so that a spark will not occur between them.

When two objects are bonded, the charges flow freely between the bodies and there is no difference in charge.

An adequate ground will always discharge

a charged conductive body and is recommended as a safety measure whenever any doubt exists concerning a situation or a governing authority requires it.

To avoid a spark from discharge of static electricity during filling operations, a wire bond should be provided between the storage container and the container being filled, unless a metallic path between the container is otherwise present. For additional safety, it is advisable to have the bonding wire or one of the containers grounded.

When loading or unloading tank cars through open domes, it is best to use a downspout long enough to reach the tank bottom. Generally, tank cars need not be separately grounded because the resistance of the natural ground through the tank car wheels and rails, and the resistance of piping, flexible metallic joints, or metallic swivel joints, are considered sufficiently low to protect against static electricity. For detailed information