



Copper Conductivity Straps

Conductivity straps are attached to ductile iron pipe in order to provide a low resistance, electrically continuous path from pipe-to-pipe in a pipeline. The resulting system, when used in conjunction with low voltage current, can be used for pipeline thawing in cold conditions and for cathodic protection systems. Applicable piping systems include push-on joint, mechanical joint, and restrained joint configurations. Conductivity straps are available upon customer order for all sizes of pipe manufactured by Griffin Pipe Products Company.

The design of the conductivity straps provide for a maximum of 120 to 140 amps of sustained current, based on the cross sectional area of the conductivity strap. The current can be provided by a generator, welding machine, or battery power. Heat buildup in the pipe should not be enough to damage the gaskets in each joint due to the low resistance path provided by the conductivity strap.

When ordered, conductivity straps are factory-welded to the bell and spigot of each pipe. A copper jumper strap with silicon-bronze bolts and nuts is provided with the pipe to provide a field connection between the straps following assembly of each pipe joint. The jumper strap is bolted between the two welded straps. A typical push-joint pipe configuration with the assembled conductivity strap is shown below.

In the case of field-cut pipe, it is necessary to field-weld the copper conductivity strap. If the straps are not available, an AWG no. 2 or larger solid copper wire may be substituted. Wire sizes smaller than a AWG no. 2 cannot be used. A braided copper conductor can also be substituted on field cuts. It should be crimped into a copper connector which is then welded to the pipe. This type of conductor can also be fastened with a cadweld (powder weld). Griffin Pipe Products Company should be consulted on the proper materials and methods for field welding of conductivity straps.

