

OVERVIEW

The following technical note discusses the natural tendency of flooded, semiflexible, polyethylene jacketed cables to shrink back, a phenomenon common to all manufacturers of flooded cable.

Reason for Jacket Shrinkage

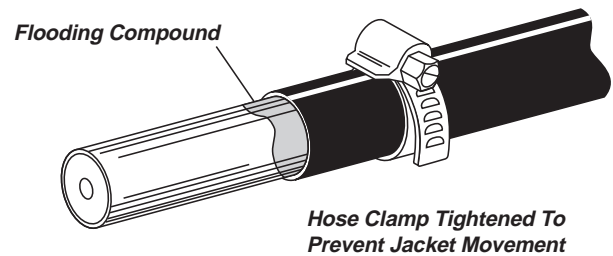
The cable jacket is applied to the cable core by heating pellets of polyethylene to the melting point in an extruder. The melted material is routed through the extruder into the melted polyethylene over the unjacketed cable core. After exiting the extruder crosshead, the now jacketed cables immediately quenched in cold water. This quench operation is necessary for several reasons. First, in order to prevent the cable core from being exposed to excessive heat and next to the cool the jacket so it will not deform and will maintain the wall thickness and dimensions defined by industry specifications.

This rapid cooling locks longitudinal stresses into the polyethylene jacket and are relieved, in the field, by daily environmental heating and cooling of the jacket. This process of stress relief manifests itself by longitudinal shrinkage of the jacket material relative to the cable outer conductor. Shrink back is most pronounced when the jacket is directly exposed to heating by the sun. In extreme cases, where no action has been taken to secure the jacket against movement, up to 12" of outer conductor may be exposed.

Preventing Jacket Movement Due To Shrinkage

Prevention of jacket movement due to shrinkage takes place during the preparation of the cable for connectors. All strip dimensions remain the same as indicated in the manufacturer's instructions for the connector being used and a general description of the preparation process can be found in TFC Technical Note 1022-H.

After stripping back the cable jacket secure hose clamp approximately 1/2" from the end of the cable jacket to prevent shrink back (see figure 1). When the job is complete heat shrink tubing should cover the hose clamp, cable and connector.



Caution: The hose clamp must not be overtightened, deformation of the outer conductor and signal degradation may result.