

Keywords:

Z-Wire®
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Copper Guard
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Hardening the Drop Cable Anti-Corrosion Technology

Moisture, pollution and oxygen are some of the elements attempting to corrode the coaxial cable center conductor, outer conductor and shielding materials. Corrosion to these parts of the cable can lead to higher signal loss, lower shielding effectiveness, common path distortion (CPD), higher resistance and pictures with snow or digital tiling and eventually service outages. PCT has superior technology to combat corrosion and harden the drop.

Z-Wire®

PCT International's (PCT®) patented Z-Wire® anti-corrosion technology is an option available for all MOCSY® 75 Ohm drop cables. It offers dry, permanent protection to the aluminum outer conductor and shield. Unlike flooding compound which is sticky and tends to be installer unfriendly, Z-Wire is completely dry and clean. Only PCT can offer Z-Wire because we own the patent, no. US 7,084,343 B1.

How It Works

Before the cable is assembled in our factory, the aluminum laminates (foils) are coated with an environmentally friendly water based solution which is dried in an oven. The solution leaves behind a thin layer of wax acid polyester on the aluminum surfaces. This layer is formed in-situ by the reaction of an aqueous emulsion of a polybasic acid or anhydride, a polyol and an effective amount of lanolin wax acid.

Test results

Cables with Z-Wire have been proven to pass the Moisture Inhibitor Corrosion Resistance Test ANSI / SCTE 69 2007. In fact, we have gone beyond the standard 144 hours salt fog exposure time to a total of 1,000 hours with compelling results. These photos demonstrate the effectiveness of Z-Wire technology.



After 1,000 hrs, Z-Wire is bright!



After 1,000 hrs, standard cable

Note that PCT Z-Wire cables meet the same electrical and mechanical specifications as PCT non-Z-Wire cables. Each Z-Wire cable jacket is clearly marked “Z-WIRE PATENT US 7,084,343 B1”. This technology is also compliant with the EU restriction of use of certain hazardous substances (RoHS).

CommScope® offers a competitive product, BrightWire®, which uses a patented anti-corrosion compound and a yellow dye on the aluminum surfaces.

Corrosion Guard

For customers requiring flooding, PCT offers Corrosion Guard technology, a non-flowing gel that is applied under the jacket to fill the braid and coat the metal surfaces. This gel is a APFC (amorphous polypropylene flooding compound) and is effective in blocking moisture and has been proven to pass the Moisture Inhibitor Corrosion Resistance Test ANSI / SCTE 69 2007. Because this is a nonflowing gel, meeting the requirements of ANSI / SCTE 11 2001R2006 Test Method for Aerial Cable Corrosion Protection Flow, these cables are suitable for both aerial (PVC jacket) and direct burial (PE jacket) installation.

Competitor CommScope offers a similar flooding compound called APD®; while Times Fiber Communications offers a similar flooding compound called lifeTime®.

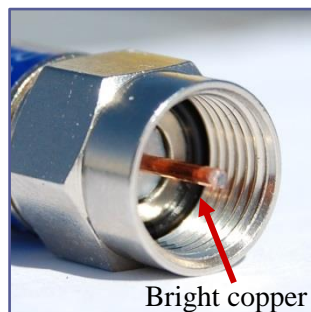
Copper Guard

An inherent problem in the cable telecommunications industry is moisture entering the drop cable through damaged cable jackets or loose connectors. This moisture causes corrosion of the braids, aluminum foil tapes, and the center conductor. Specifically addressing the problem with corrosion on the center conductor, PCT utilizes a proprietary treatment to prevent the copper cladding from corroding. This treatment has been proven to be very effective at minimizing corrosion of the center conductor.

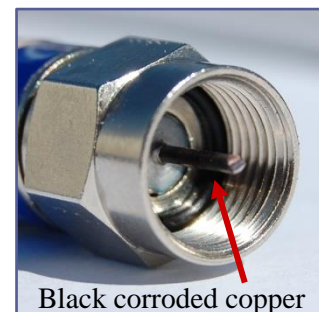
Protection against corrosion for the center conductor is provided automatically on all MOCSY7 products. If the copper surface becomes corroded with nonconductive cuprous or cupric oxides, contact resistance goes up and signal losses increase. PCT employs two tactics to combat this corrosion.

1. Adhesive is used to bond the foam insulation to the center conductor.
2. Copper Guard, a proprietary chemical treatment, is applied to the center conductor.

Salt fog testing has been used to demonstrate the effectiveness of Copper Guard. In the 144 hour test, cables with and without Copper Guard are prepared by cutting the ends flush, exposing them to the fog.



PCT Copper Guard after salt fog test



Competitor cable after salt fog test