

ROC™ Drop Cables with FastAccess™ Technology

AEN147, Revision 3

This Applications Engineering Note (AE Note) addresses the mechanical and environmental robustness of Corning ROC™ Drop Cables with FastAccess™ Technology.

Value

With booming broadband stimulus projects and the global need for bandwidth at an all-time high, the need for field personnel has grown, resulting in an increase in craftspeople with less experience performing cable installation, splicing, termination, and testing. Drop cable sheath removal can be cumbersome, often requiring specialized tools and many man-hours, if multiple sheath removals are required. Completely removing the sheath and cleaning water-blocking gel for splicing or termination can sometimes take double-digit minutes for craftspeople of all experience levels. In addition, cable stripping is both risky and dangerous to the craftspeople, as well as the cable itself. Providing service



**Common Kit carried
by all installers**



**Special
Access Tool**

to the home or business is the last link in the fiber-to-the-x network, and speed is crucial in providing a positive customer interaction during initial installation.

Figure 1: Common Tools vs. Special Drop Stripping Tool

Corning's continuous drive for innovation has led to the development of ROC Drop Cables with FastAccess Technology that decrease fiber access time up to 55 percent for both experienced and inexperienced installers and dramatically reduce overall risk. ROC Drop Cables with FastAccess Technology require no special access tools, and can be opened with standard tools carried by most installers. FastAccess Technology, coupled with revolutionary gel-free technologies, distinguishes Corning ROC Drop Cables as the easiest and safest drop cable solution in the industry. The GRP strength rods stay encapsulated in polyethylene, preventing splintering, and the gel-free technology precludes the need for harsh solvents. ROC™ Drop Cables with FastAccess™ technology are available with either 250 μm or 900 μm fiber.

Industry and Characterization Testing

Corning ROC Drop Cables with FastAccess Technology are designed to withstand the forces encountered in outside plant installations. Corning ensured long-term reliability of these

cables by performing rigorous testing according to industry standards, application-based testing that exceeds industry standards and field trial installations. Mechanical and environmental tests performed according to ICEA S-110-717 and IEC 60794-3 include hot bend, cold bend, crush, cyclic flex, impact, twist, temperature cycling, cable aging and water penetration. Corning conducted application-based characterization tests that exceeded industry requirements and maintained the mechanical integrity of the cable. These tests included extreme twisting at various temperature ranges, piercing the cable then twisting under high tension, and opening the cable and placing at high tension while dead-ended by a telephone drop wire p-clamp. All tests passed optical attenuation criteria and caused no splitting or cracking of the cable jacket.



Figure 3: Ten 360° Twists at -40° C

Installation Testing

Corning ROC™ Drop Cables with FastAccess™ Technology have not just succeeded in the lab, but they have also been installed without failure in actual outside plant environments. Along with customer field trials, Corning has installed ROC Drop Cables with FastAccess Technology in our world-class outdoor installation test bed in Winston-Salem, N.C. These installations included pulling, pushing and aerial self-support placement to subject the cable to constant UV radiation. The cable was installed successfully each time without any exterior damage to the cable jacket.



Figure 4: Temporary Drop Test



Figure 5: Corning Optical Communications

“Green Acres” Outdoor Lab

Additionally, Corning tested the temporary drop capability of ROC Drop Cables with FastAccess Technology. In some situations, service drops must be placed across a road or driveway temporarily if there is not a pre-existing underground duct. Corning technicians crossed a road multiple times with several drop cables, then drove over the cable multiple times at 10 and 35 mph with an 8,000 pound bucket truck. The cable jacket maintained structural integrity, and there was no added optical loss or fiber breaks.

Conclusion

Corning has built its reputation by being a global leader in technology and innovation in fiber optic cable and connectivity. This innovation continues with ROC Drop Cables with FastAccess Technology, allowing installers to access fiber up 55 percent faster than conventional drop cables, while using common tools carried by most craftspeople. These cables have surpassed industry specifications in the lab and in the field, proving Corning as a continued leader in quality.