



EDITION 13  
VOLUME 1

# 10 SUPPORT ACTIVITIES TO ACCELERATE POST-STORM RECOVERY

Written by Dr. Yuhsin Hawig, VP of Applications Engineering and Mark Dulik, Chief Applications Engineer & Certified Cable Splicer



## STANDARD VS. EXTENDED WARRANTY

We provide supporting documents to explain the Standard 1-Year Warranty vs. the Extended Warranty on wire & cable products post storm. If wire & cables were subjected to any natural disaster such as hurricanes, then the materials might be exposed to harsh environmental elements such as flood water containing pollutants. The electrical products might also suffer from major physical damage during the weather events. If this is the case, then our manufacturing warranty will be voided. Industry standard does not cover long-term testing nor performance validation related to exposures to storms or flood water.



## SIGNED LETTERS FOR INSPECTIONS

Signed engineering letters are often requested by inspectors and electrical contractors to confirm the code compliance and the best practice. Custom documents can be created to submit to the Authority Having Jurisdiction, or AHJ, for review in case there are discrepancies between the National Electrical Code® (NEC®) and local regulations, specifically on whether the exposed cables can be repaired or need to be replaced.



## GO VS. NO-GO DECISIONS

Southwire's CableTechSupport™ Services team receives more than 1,500 requests yearly from engineers, contractors, supervisors, and maintenance crews to mitigate unforeseen damage to wire and cables due to storms. Water intrusion and jacket tearing are two of the most frequently asked questions. We help make GO vs. NO-GO decisions based on the severity of the damage.



## NITROGEN PURGING

New cables can be restored in the field post storm due to unprotected cable ends or damaged end seals exposed to rainwater using a custom-built purging unit to remove moisture via pressurized nitrogen gas. Material scrap can be prevented by successfully pushing out water in conductors or moisture transmitted along the cable length under the overall jacket. Southwire can also help determine whether the cables in question are a good candidate for nitrogen purging. Replacement is recommended if cables were exposed to contaminated flood water.



## JACKET REPAIR

Jacket repair procedure can be performed in the field post storm to repair minor physical damage such as gouges, tears, or indents on cable surfaces. Such procedures can be applied to medium voltage, low voltage power cables, and building wire products to restore the cable back to its original integrity. Our applications engineering team can review photos of the damage or travel to job sites to inspect cables and confirm whether the cables can be repaired using common electrical tapes.



## FIELD TESTING

We recommend performing field testing if there is doubt that the cables might have water damage. Insulation resistance is a non-destructive DC test to measure the insulation resistance between the phases and/or between phase and ground. It is commonly deployed as an acceptance testing prior to energizing the cable and for maintenance evaluations. This test is also known as "Megger testing" and can be performed on: THHN/THWN, XHHW, RHH/RHW, USE, PV, and MV cables (2.4-46 kV). Southwire's CableTechSupport™ Services team can review data to determine the impact of water on cables.





# 10 SUPPORT ACTIVITIES TO ACCELERATE POST-STORM RECOVERY



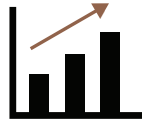
## INSURANCE CLAIMS

We can review photos from the job sites or warehouse locations and confirm if the manufacturing warranty of the wire and cable products is voided or not. If the wire

& cable products are subjected to severe storm damage, then the warranty is voided. We have successfully supplied signed engineering letters to homeowners and electrical contractors for the purpose of filing property insurance claims to cover the storm damage.



## PREMIUM UPGRADE



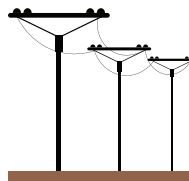
If an identical cable design is no longer sufficient to deliver future loads, Southwire's applications engineering team will assess project specifications and upgrade cables accordingly. Upsizing conductors to carry a higher ampacity at the maximum operating temperature is not uncommon. Aluminum to copper conversion is another consideration and all alternative cable configurations will be verified to ensure that a weather-proof and robust cable is chosen for any unique utility, commercial, or industrial application.



## DROP-IN REPLACEMENT

If the conductor, critical shielding, or the dielectric component of cables are too compromised to be repaired, a replacement order will need to be initiated quickly to shorten the outage duration. Engineering spec sheets

detailing physical properties and electrical parameters are essential to ensure that the drop-in replacement cables match with the system design and operating conditions.



## UNDERGROUND CONSIDERATIONS

With the increasing frequency of natural disasters including hurricanes, tornadoes, wildfires and winter storms, electric utilities have proactively transitioned overhead lines to underground circuits to minimize adverse weather impact and to enhance safety. Southwire's CableTechSupport™ Services team can aid in cable specifications and system designs. We can select more ruggedized conductors, insulation, or jacketing materials to withstand harsh weather conditions and heavy operational loading for future projects.

