EDITION 24
VOLUME 1

11 KEY CONSIDERATIONS FOR CABLE DAMAGE AND REPAIR

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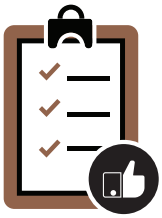
ROOT CAUSES

Almost every electrical contractor has encountered damage in the field. Some damage can be discovered during reel inspection prior to cable pulling, but others are not noticed until the cable is being installed. Several root causes of cable damage can occur before or after cable arrives in the field. Common reasons include shipping damage, repackaging of reels, and cable handling prior to cable pulling. The most frequently seen damage occurs during cable pulling activities with improperly sized sheaves, abrasions due to dragging cables on gravel, and damage via excessive sidewall bearing pressure in conduits.



GO FOR REPAIR

It is a go for repair if the damaged area is not deep enough to compromise the dielectric insulation, and if the copper tape shield or any shielding material under the jacket is not nicked or broken. If there is no major change to any of the cable components including the conductor, insulated cable core, and metallic shielding, then field repair can be conducted to restore the overall jacket to its original state. Scan the QR code to access the spec sheet for Southwire's Re^{3}™ all-in-one cable repair kits.

VIEW SPEC SHEET

PURPOSE OF JACKET

The purpose of the outer cable jacket is to provide protection of the internal components of the cable. The jacket layer will provide physical, mechanical, and chemical protection from outside elements. The overall cable covering can still be effective with minor nicks or surface scratches. Using Southwire's approved jacket repair procedure, created specifically to match our products, cable can be restored without impacting the service life.

NO-GO FOR NATURAL DISASTER

If wire and cable is subjected to any natural disaster such as hurricanes or wildfires, the materials might be exposed to harsh conditions such as flood water or severe physical impact. In these cases, our manufacturing warranty will be voided, and jacket repair should not be considered. Southwire advises replacement of any electrical products subjected to major weather events, as no industry standard exists today covering long-term evaluations on cables exposed to contaminated floodwater or fire.

GO VS. NO-GO DECISIONS

When damage is found, pictures of the cable and its surroundings should be taken to include both the good and the suspect areas with the full cable markings, reel packaging or tags, equipment, tools, and site conditions. Go vs. No-Go decisions are made based on the severity of the damage using photos or actual cable samples. For minor tears limited to the surface, field repair can be completed by jobsite crews using an approved repair procedure. Repair can be deployed on shielded cables if the metallic shield is intact.

SPEED™ SERVICES

Southwire™ SPEED™ Services

Southwire SPEED™ Services leverages our North American manufacturing and logistics footprint to deliver a concierge experience for all your wire & cable needs including urgent cable replacements when field repair is not an option. Minimum order quantities are eliminated, and lead time is reduced. Contact your local Southwire representative or email SWSpeed@southwire.com to place your order for the Re^{3}™ cable repair kits.

Southwire®

For more information, please contact cabletechsupport@southwire.com or visit **southwire.com**.

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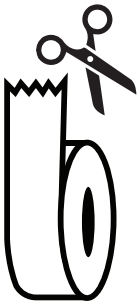
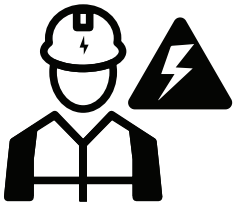


APPROVED Re³™ REPAIR KITS

The formal repair procedure can be performed in the field to mitigate minor physical damage such as delamination, gouges, tears, or indents on the cable surface. It can be applied to both medium voltage and low voltage power cables, as well as building wire products, to restore the cable to its original state. In addition to reviewing photos of the damaged cable to make a go vs. no go decision, we can travel to job sites to inspect cables and determine whether the suspect cables can be repaired using electrical tape. The manufacturing warranty will still be valid if Southwire's approved Re³™ repair kit is utilized.



COMMISSIONING TESTING

Southwire recommends performing commissioning testing with or without suspected cable damage. This is the best way to evaluate the full system, including terminations and splices, to make sure the entire installed length is in good dielectric condition prior to energization. Megger testing is a non-destructive DC voltage test to measure the insulation resistance between the phases and/or between phase & ground. It can be performed on THHN/THWN, XHHW-2, RHH/RHW, USE-2, PV, and MV cables (2.4-46 kV).

INSPECTOR'S APPROVAL

Signed engineering letters are often requested per inspectors, project owners, or electrical contractors to confirm code compliances and safe practices. Southwire's formal cable repair procedure along with a signed letter can be prepared to submit to Authorities Having Jurisdiction (AHJ) in case there are concerns about the decision to replace or repair or the validity of the rework.

DAMAGE PREVENTION

Southwire's CableTechSupport™ Services' Re³™ mission statement signifies our commitment to Respond, Rectify, & Restore with Reinforced, Resilient, & Reliable solutions. You can download the whitepaper that describes the best practices for cable installation to prevent damage and minimize material waste by visiting our CableTechSupport™ Services webpage.

CABLETECHSUPPORT™ SERVICES

Southwire's CableTechSupport™ Services team receives more than 15,000 engineering requests yearly from electricians, engineers, and contractors to assist with product selection, validate code & standard compliance, and solve jobsite challenges for residential, commercial, industrial, and utility applications. You can access all our engineering articles by **scanning the QR code.**

ACCESS ARTICLES

Southwire®

For more information, please contact cabletechsupport@southwire.com or visit **southwire.com**.