Submersion of Metal Clad Cables in Water due to Hurricanes or Storms
Prepared by CableTechSupport™ Services on October 6, 2022

Unjacketed MC:
Unjacketed MC cables and all MC variations including unjacketed Types MC-AP, MC-PCS, MC-FPLP, Riser MC, HCF MCAP, are rated for **Dry Locations Only** per NFPA 70® National Electrical Code® (NEC).

Two spec examples of Type MC without an overall PVC jacket are attached below.
SPEC 60100: Armorlite® Type MC THHN/THWN Circuit Size CU Conductor 120/208V Colors
SPEC 60127: Armorlite® Type MC THHN/THWN Circuit Size CU Conductor 277/480V Colors

Southwire recommends replacing any unjacketed MC cables if they are exposed to wet conditions. Replacement of wet unjacketed MC cables is critical whether they are exposed to fresh or salt water, and whether they are partially or fully submerged. Without the protective PVC covering, aluminum-interlocked-armor will corrode over time.

Jacketed MC:
Jacketed MC cables and all MC designs with an extruded PVC sheath can be installed in wet locations per NEC. However, severe exposure and full submersion in salt water, flood, and storm water will compromise the long-term performance of the cable assemblies.

After major weather events such as hurricanes, water becomes corrosive due to contaminants absorbed from the environment and sewage or debris from nearby building structures. Water could also contain conductive elements because of metal fragments. Exposing jacketed MC cables to fresh or salt water due to storms, regardless of the degree of exposure or duration, will likely shorten the life of the cable.

Southwire recommends replacing all commercial MC products listed per the spec link attached if they have been submerged in water because of a hurricane.
Southwire Specs on Commercial MC Products
Fresh and sea water after storms contain high amounts of corrosive, oxidizing, and conductive chemicals, which will accelerate the degradation of metal and dielectric components.

MC-HL for Hazardous Locations:
Type MC-HL designs offer a better liquid or vapor barrier compared to Type MC. An example of Type MC-HL spec can be found below.

SPEC 45226: CU 600V XHHW-2 ARMOR-X Type MC-HL PVC with 3 Grounds

These Type MC-HL cables are certified for uses in Class I, II, and III, Division 1 and 2 Hazardous Locations (HL) per NEC. Type MC-HL cables with an overall jacket are more corrosion resistant compared to Type MC cables without the HL rating.

Bimetallic Connections:
Care needs to be taken to inspect all dissimilar metal connection points for saltwater or storm water intrusions to prevent galvanic electrochemical reaction from occurring.

Conclusions:
Southwire recommends replacing any wet electrical wiring due to storms. When considering the replacement or reconditioning of water-damaged electrical components, the authority having jurisdiction (AHJ) should be consulted to obtain additional rules and guidance before making the final decision.

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