



TO: Encore Wire Manufacturer Representatives
FROM: Paul W Abernathy- Manager of Codes and Standards
DATE: DECEMBER 2020
RE: Steel and Aluminum Metal Clad Cable

Encore Wire Corporation is the manufacturer of Type MC (Metal-Clad Cable) with both Steel and Aluminum sheathing. Both Steel and Aluminum armor has to meet the same exact requirements under Section 13.1 of UL 1569.

“13.1 The cable shall be enclosed in metal armor that is applied directly over the cable assembly described in Sections 9 – 12. On a round cable, the cross section of the armor shall be round and the armor shall consist of interlocked steel or aluminum strip, a corrugated stainless steel, aluminum-alloy, copper-alloy or bronze-alloy tube, or a smooth aluminum-alloy tube.”

In terms of their comparability to withstand installation applications, both Steel and Aluminum armored Type MC has to meet the strict requirements for Impact found in Section of 24.1 UL 1569 and for Crush found in Section 25.6 of UL 1569.

Impact Test

“24.1 Finished cable shall be capable of withstanding without contact between circuit conductors, and without contact between a circuit conductor and the armor and any bare or insulated grounding conductor connected together, the energy of a free-falling, flat-faced weight that impacts the cable at the point at which the cable is laid over a steel rod. The test shall be conducted and the results evaluated as described in 24.2 – 24.10.”

Crush Test

“25.6 The length of cable being tested is to be advanced to and crushed at each of the successive marks for a total of ten crushes. Round cable is not acceptable if the average of the ten crushing trials is less than 1000 lbf (4448 N) (454 kgf) for a test sample containing 14 AWG conductors. Round cable is not acceptable if the average of the ten crushing trials is less than 2000 lbf (8896 N) (907 kgf) for a test sample containing 2 AWG conductors”

Summary: The selection of Steel or Aluminum Type MC Cable armor is purely a design choice and less about the compliance testing for mechanical strength properties. Both materials are subject to the same exact tests and must pass in order to meet UL 1569.”

Best regards,

A handwritten signature in black ink, appearing to read "Paul W. Abernathy", written in a cursive style.

Paul W. Abernathy, CMI, CMECP®
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* Member of NFPA 70 [NEC] Code Panel(s) #5 and # 17