Society of Cable Telecommunications Engineers

ENGINEERING COMMITTEE
Interface Practices Subcommittee

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Ampacity of Coaxial Telecommunications Cables

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1.0 SCOPE

This document provides the current carrying capacity or AMPACITY of coaxial cables used in the Telecommunications industry. The method used to calculate the tabulated ampacities is a thermodynamic model of a cable installed indoors in air and considers the heat flow from the inner and outer conductor through the dielectric and jacket materials. It assumes that the conductors carrying current reach an operating temperature of 65°C based on the cables ability to dissipate heat. This temperature was chosen to substantially minimize the possibility of accelerated thermal aging of the dielectric and jacket materials. System designers are encouraged to consider the effect of this operating temperature on conductor resistance (R), voltage drop (IR) and power consumption (I^2R).

The National Electric Code (NEC) considers the most convenient and expeditious method of defining the ampacity of cables to be through the use of tables. The tabular format included in this document illustrates the ampacity of trunk, distribution and drop type coaxial cables commonly used in the Telecommunications industry. This procedure shall not be used to determine ground conductor size as referenced in the 1999 NEC, Article 820-40, (a)(3).

The ampacities provided for trunk and distribution coaxial cables are for copper-clad aluminum center conductors and solid (smooth wall) aluminum outer conductors. Drop coaxial cable ampacities relate to cables with a copper-clad steel center conductor and a combination of aluminum tape(s) and braid(s), which represent the outer conductor.