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**Method for Determining
Drop Cable Braid Coverage**

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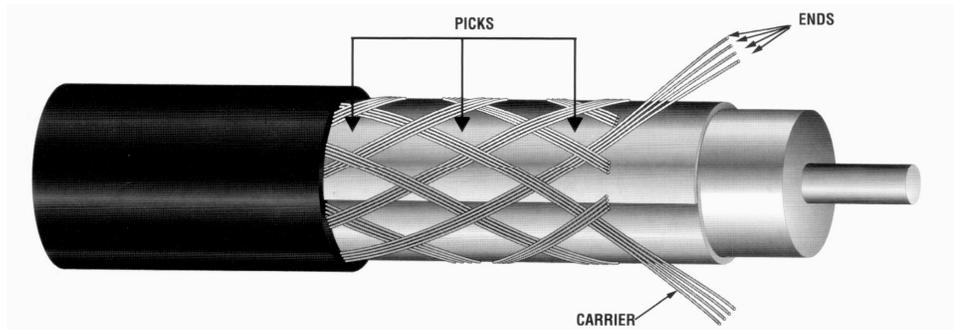
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1.0 SCOPE

The purpose of this document is to provide instruction on the calculation of braid coverage for braided coaxial drop cables. Braid coverage is expressed as a percentage of optical coverage of the underlying core by the braid wires. It is a function of the diameter of the cable core, the diameter of the wire braid, the number of carriers (groups of wire ends), the number of individual wires in each carrier and the picks per inch (distance between each carrier crossing.)

2.0 DEFINITIONS



α = Braid angle (radians) - the angle formed by the carriers with the longitudinal axis of the cable (refer to the illustration)

D = Diameter under the braid (inches)

C = Number of carriers - the number of groups of individual braid wires (ends), usually 16 for most cable telecommunications braided cables (refer to the illustration)

d = Braid strand diameter (inches)

P = Picks per inch – the number of carrier crossing points per longitudinal inch (refer to the illustration)

N = Number of individual wires (ends) in each carrier

3.0 BRAID COVERAGE FORMULA

$$\text{Percent Braid Coverage} = (2 \cdot F - F^2) \times 100$$

where:

$$F = N \cdot P \cdot d / \sin \alpha$$

$$\alpha = \tan^{-1} [2 \cdot \pi \cdot (D + 2 \cdot d) \cdot (P / C)]$$

4.0 BRAID COVERAGE EXAMPLE

Cable construction: 59 Series, tape and braid construction

Given:

$D = 0.150$ inches (from measurement or ANSI/SCTE 74 2003)

$C = 16$ (from measurement)

$d = 0.0063$ (from measurement or ANSI/SCTE 74 2003)

$P = 6.0$ (from measurement)

$N = 4$ (from measurement)

$$\alpha = \tan^{-1} [2 \cdot \pi \cdot (0.150 + 2 \cdot 0.0063) \cdot (6.0/16)] = \tan^{-1} (0.383) = 0.366$$

$$F = 4 \cdot 6.0 \cdot 0.0063 / \sin (0.366) = 0.151 / 0.357 = 0.423$$

$$\text{Percent Braid Coverage} = (2 \cdot 0.423 - 0.423^2) \cdot 100 = 66.7\%$$