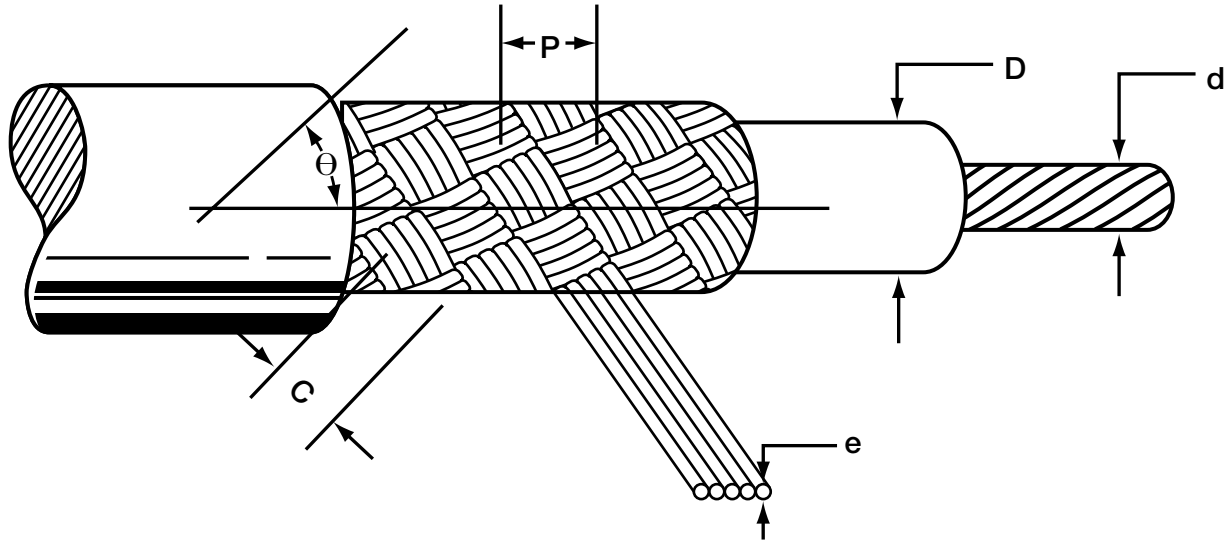


Cable Design Equations – Braid Shield



BRAID ANGLE:

$$\theta = \tan^{-1} \left[\frac{2\pi (D - 2e) P}{C} \right], \text{ DEGREES}$$

BRAID PICKS PER INCH:

$$P = \frac{(C) (\tan \theta)}{2\pi (M)}, \text{ PICKS/INCH}$$

BRAID SHIELD WEIGHT:

$$W = \frac{(n) (C) (l)}{\cos \theta}, \text{ LBS/M FT}$$

BRAID SHIELD DC RESISTANCE:

$$R_{dc} = \cos \frac{r_{dc}}{(n) (C) (\cos \theta)}, \Omega/\text{kft}$$

% Coverage: %C = (2F - F²) x 100

% Coverage Factor for Common Coverage:	
F	% Coverage
0.368	60
0.409	65
0.453	70
0.500	75
0.553	80
0.617	85

where:

- D = diameter under shield, inches
- d = diameter of center conductor, inches
- C = number of carriers
- e = diameter of end
- P = pick (measured in picks per linear inch)
- θ = braid angle, degrees
- W = weight of shield, lbs/M ft
- n = number of ends in one carrier
- l = weight of one end in lbs/M ft
- M = D + build-up of braid on one shield wall, inches
- R_{dc} = dc resistance of the braid shield, Ω/M ft
- r_{dc} = dc resistance of one strand (end) of shield, Ω/M ft
- % C = percent braid coverage
- F = % coverage factor