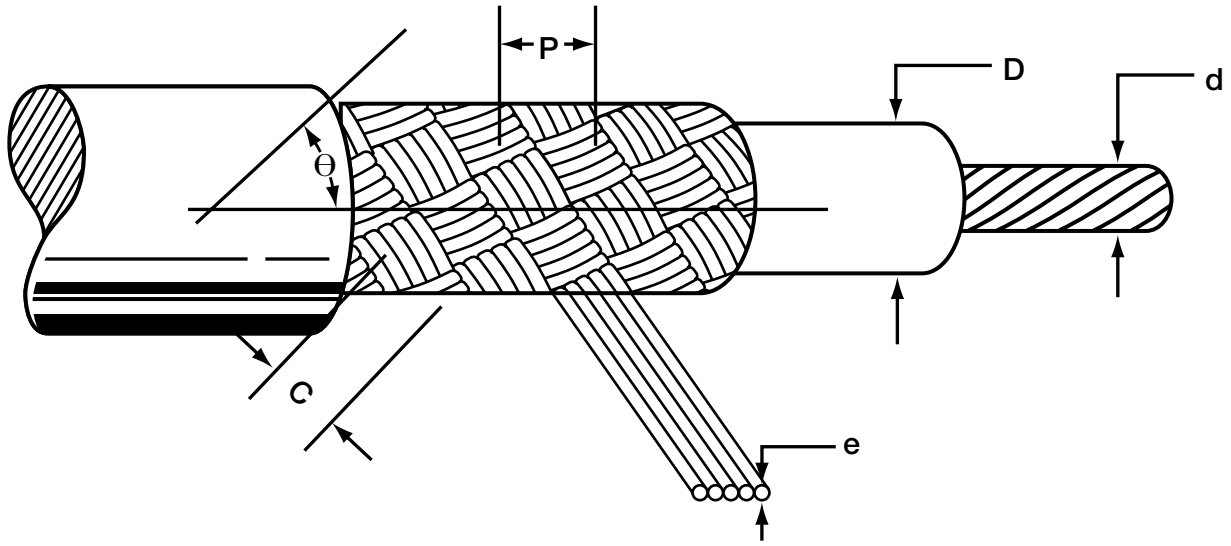
Cable Design Equations—Braid Shield



BRAID ANGLE:

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

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: $\%C = (2F - F^2)\ x\text{-}100$

% 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