Shielding and Armoring

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Shield Types Application Guide

Choose a Foil Shield…

- For protection against capacitive (electric field) coupling where shield coverage is more important than low DC resistance.
- When possible sources of interference include TV signals, crosstalk from other circuits, radio transmitters, fluorescent lights or computing equipment.
- For MATV, CATV, video, networking, computer I/O cables in office, industrial or commercial environments where ambient EMI levels are low.

Choose a Braid Shield…

- For superior performance against diffusion coupling, where low DC resistance is important, and to a lesser extent, capacitive and inductive coupling.
- When possible sources of interference exhibit low impedance characteristics, such as motor control circuits and switches which operate inductive loads.
- For computer to terminal interconnect for process, instrumentation or control applications.

Choose a Spiral Shield…

- For functional shielding against diffusion and capacitive coupling at audio frequencies only.
- When possible sources of interference are power lines and fluorescent lights.
- For applications when flexibility and flex life are major concerns, such as microphone and audio cables and retractile cords.

Choose a Combination Shield…

- For shielding against high frequency radiated emissions coupling and ESD. Combines the low resistance of braid and 100% coverage of foil shields.
- When possible sources of interference include radio transmitters, TV stations, printed circuit boards, back planes, motor control circuits and computing equipment.
- For video, CATV, MATV, networking, computer I/O cables and computer-aided manufacturing applications.

Table 9: Relative Cost Comparison

Relative cost comparisons are based on coaxial cable. Chart shows relative shield cost as one component of the total cost of the cable.

These cost ratings may change depending on the physical construction of the cable.

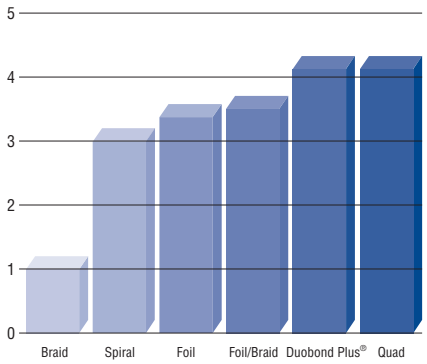

Table 10: Shield Performance Comparison Chart

Properties	Cable Shield Ratings*				
	Braid (95% Coverage)	Spiral	Foil	Foil/Braid	Foil/Braid/Foil Duobond Plus®
Frequency: DC					
Capacitive	A	AA	AAA	AAA	AAA
Diffusion	AAA	A	C	AAA	AAA
Diffusion/Inductive	–	–	–	–	–
Diffusion/Inductive/Capacitive	–	–	–	–	–
Frequency: 15 kHz					
Capacitive	A	AA	AAA	AAA	AAA
Diffusion	AAA	B	C	AAA	AAA
Diffusion/Inductive	AA	C	A	AA	AAA
Diffusion/Inductive/Capacitive	–	–	–	–	–
Frequency: 10 MHz to 1000 MHz					
Capacitive	A	AA	AAA	AAA	AAA
Diffusion	–	–	–	–	–
Diffusion/Inductive	B	C	A	AA	AAA
Diffusion/Inductive/Capacitive	B	C	A	AA	AAA

* Although ratings shown in table 10 are based on shielded coaxial cable test results, these ratings also pertain to shielded multi-conductor and flat cable where shield types are available.

Note: Shield effectiveness decreases as frequency increases. Therefore, ratings in one frequency category do not imply equal shield effectiveness in other frequency categories.

Shield Rating Key	
AAA	Best
AA	Better
A	Good
B	Functional
C	Unsatisfactory
–	Not applicable