Coaxial Cable Specifications

Properties of standard coaxial type cables have been very much standardized for many years. Unless you buy rogue stock from a supplier, if you abide by the manufacturer's application guidelines, there should not be any surprises. Do not make a bend of smaller recommended radius, do not expose the cable to excess temperatures, vibration, mechanical stress, or chemicals. Be absolutely certain to attach the coaxial cable into a properly designed connector, printed circuit board, or other type termination, paying careful attention to insulation and dielectric strip lengths, solder temperatures and dwell times, and shielding preparation. Do all that, and you will be assured a long lifetime from your cable system.

Properties of Coaxial Cable Dielectrics

Dielectric Type	Time Delay (ns/ft)	Propagation Velocity
Solid Polyethylene (PE)	1.54	0.659c
Foam Polyethylene (FE)	1.27	0.800c
Foam Polystyrene (FS)	1.12	0.910c
Air Space Polyethylene (ASP)	1.15-1.21	0.840c-0.880c
Solid Teflon (ST)	1.46	0.694c
Air Space Teflon (AST)	1.13-1.20	0.850c-0.900c

c = speed of light in a vacuum

Properties of Popular Coaxial Cables

Note that attenuation values are given at 400 MHz, but can - and do - often have significantly different values at other frequencies. Always check for values specific to the type you plan to use.

Type (/U)	MIL-W-17	$Z_0(\Omega)$	Dielectric Type	Capacitance (pF/ft)	O.D. (in.)	dB/100 ft @400 MHz	Vmax (rms)	Shield
RG-4		50.0	PE	31	0.226	11.7	1,900	Braid
RG-5		52.5	PE	29	0.332	7.0	3,000	Braid
RG-5A/B		50.0	PE	31	0.328	6.5	3,000	Braid
RG-6	/2-RG6	76.0	PE	20	0.332	7.4	2,700	Braid
RG-6A	/2-RG6	75.0	PE	21	0.332	6.5	2,700	Braid
RG-8		52.0	PE	30	0.405	6.0	4,000	Braid
9914 (RG-8)		50.0	PE	25	0.403	2.6	300	Braid+Foil
RG-8A		52.0	PE	30	0.405	4.5	5,000	Braid
RG-8X		50.0	PE	26	0.242	8.0	2,500	Braid
RG-9		51.0	PE	30	0.420	5.9	4,000	Braid

RG-9A		51.0	PE	30	0.420	6.1	4,000	Braid
RG-9B		50.0	PE	31	0.420	6.1	5,000	Braid
RG-10		52.0	PE	30	0.463	6.0	4,000	Braid
RG-10A		52.0	PE	30	0.463	6.0	5,000	Braid
RG-11	/6-RG11	75.0	PE	21	0.405	5.7	4,000	Braid
RG-11A	/6-RG11	75.0	PE	21	0.405	5.2	5,000	Braid
RG-12	/6-RG12	75.0	PE	21	0.463	5.7	4,000	Braid
RG-12A	/6-RG12	75.0	PE	21	0.463	5.2	5,000	Braid
RG-17A		52.0	PE	30	0.870	2.8	11,000	Braid
RG-22	/15-RG22	95.0	PE	16	0.405	10.5	1,000	Braid
RG-22A/B	/15-RG22	95.0	PE	16	0.420	10.5	1,000	Braid
RG-23/A	/16-RG23	125.0	PE	12	0.650	5.2	3,000	Braid
RG-24/A	/16-RG24	125.0	PE	12	0.708	5.2	3,000	Braid
RG-34	/24-RG34	71.0	PE	22	0.625	5.3	5,200	Braid
RG-34A	/24-RG34	75.0	PE	21	0.630	5.3	6,500	Braid
RG-35	/64-RG35	71.0	PE	22	0.928	2.8	10,000	Braid
RG-35A/B	/64-RG35	75.0	PE	21	0.928	2.8	10,000	Braid
RG-55B		53.5	PE	29	0.200	11.7	1,900	Braid
RG-58	/28-RG58	53.5	PE	29	0.195	11.7	1,900	Braid
RG-58A	/28-RG58	52.0	PE	30	0.195	13.2	1,900	Braid
RG-58B		53.5	PE	28	0.195	14.0	1,900	Braid
RG-58C	/28-RG58	50.0	PE	31	0.195	14.0	1,900	Braid
RG-59/A	/29-RG59	73.0	PE	21	0.242	10.5	2,300	Braid
RG-59B	/29-RG59	75.0	PE	21	0.242	9.0	2,300	Braid
RG-62/A/B	/30-RG62	93.0	ASP	14	0.242	8.0	750	Braid
RG-63/A/B	/31-RG63	125.0	ASP	10	0.405	5.5	1,000	Braid
RG-65/A	/34-RG65	950.0	ASP	44	0.405	16 @5MHz	1,000	Braid
RG-71/A/B	/90-RG71	93.0	ASP	14	0.245	8.0	750	Braid
RG-79/A/B	/31-RG79	125.0	ASP	10	0.436	5.5	1,000	Braid
RG-83		35.0	PE	44	0.405	9.0	2,000	Braid
RG-88		48.0		50	0.515	0.7 @1MHz	10,000	Braid
RG-108/A	/45-RG108	78.0	PE	20	0.235	2.8 @10MHz	1,000	Braid
RG-111/A	/15-RG111	95.0	PE	16	0.478	10.5	1,000	Braid
RG-114/A	/47-RG114	185.0	ASP	7	0.405	8.5	1,000	Braid
RG-119	/52-RG119	50.0	ST	30	0.465	3.8	6,000	Braid
RG-120	/52-RG120	50.0	ST	30	0.523	3.8	6,000	Braid
RG-122	/54-RG122	50.0	PE	31	0.160	18.0	1,900	Braid
RG-130	/56-RG130	95.0	PE	17	0.625	8.8	3,000	Braid
RG-131	/56-RG131	95.0	PE	17	0.683	8.8	3,000	Braid
RG-133/A	/100-RG133	95.0	PE	16	0.405	5.7	4,000	Braid

RG-141/A		50.0	ST	29	0.190	9.0	1,900	Braid
RG-142/A/B	/60-RG142	50.0	ST	29	0.195	9.0	1,900	Braid
RG-144	/62-RG144	75.0	ST	20	0.410	4.5	5,000	Braid
RG-164	/64-RG164	75.0	PE	21	0.870	2.8	10,000	Braid
RG-165	/65-RG165	50.0	ST	29	0.410	5.0	5,000	Braid
RG-166	/65-RG166	50.0	ST	29	0.460	5.0	5,000	Braid
RG-174		50.0		31	0.110	14.7		Braid
RG-177	/67-RG177	50.0	PE	31	0.895	2.8	11,000	Braid
RG-178/A/B	/93-RG178	50.0	ST	29	0.072	29.0	1,000	Braid
RG-179	/94-RG179	70.0	ST	21	0.100	21.0	1,200	Braid
RG-179A/B	/94-RG179	75.0	ST	20	0.100	21.0	1,200	Braid
RG-180	/95-RG180	93.0	ST	15	0.140	17.0	1,500	Braid
RG-180A/B	/95-RG180	95.0	ST	15	0.140	17.0	1,500	Braid
RG-210	/97-RG210	93.0	ASP	14	0.242	8.0	750	Braid
RG-211/A	/72-RG211	50.0	ST	29	0.730	2.3	7,000	Braid
RG-212	/73-RG212	50.0	PE	29	0.332	6.5	3,000	Braid
RG-213	/74-RG213	50.0	PE	31	0.405	5.5	5,000	Braid
RG-214	/75-RG214	50.0	PE	31	0.425	5.5	5,000	Dbl Braid
RG-215	/74-RG215	50.0	PE	31	0.463	5.5	5,000	Braid
RG-216	/77-RG216	75.0	PE	21	0.425	5.2	5,000	Braid
RG-217	/78-RG217	50.0	PE	31	0.545	4.3	7,000	Braid
RG-218	/79-RG218	50.0	PE	31	0.870	2.5	11,000	Braid
RG-219	/79-RG219	50.0	PE	31	0.928	2.5	11,000	Braid
RG-223	/84-RG223	50.0	PE	12	0.211	8.8	1,900	Dbl Braid
RG-302	/110-RG302	75.0	ST	20	0.201	8.0	2,300	Braid
RG-303	/111-RG303	50.0	ST	29	0.170	9.0	1,900	Braid
RG-304	/112-RG304	50.0	ST	29	0.280	6.0	3,000	Braid
RG-307/A	/116-RG307	75.0	80	17	0.270	7.5	1,000	Braid
RG-316	/113-RG316	50.0	ST	29	0.102	20.0	1,200	Braid
RG-391	/126-RG391	72.0		23	0.405	15.0	5,000	Braid
RG-392	/126-RG392	72.0		23	0.475	15.0	5,000	Braid
RG-393	/127-RG393	50.0	ST	29	0.390	5.0	5,000	Braid
RG-400	/128-RG400	50.0	ST	29	0.195	9.6	1,900	Braid
RG-401	/129-RG401	50.0	ST	29	0.250	4.6	3,000	Cu. S-R
RG-402	/130-RG402	50.0	ST	29	0.141	7.2	2,500	Cu. S-R
RG-403	/131-RG403	50.0	ST	29	0.116	29.0	2,500	Braid
RG-405	/133-RG405	50.0	ST	29	0.086	13.0	1,500	Cu. S-R