

# SBF (Strip Braid Flex™) Coaxial Cable



## Construction:

Center conductor: Stranded silver plated copper

Dielectric: Solid PTFE

Inner braid: Flat silver plated copper strip

Outer braid: Round silver plated copper

Jacket: Solid light blue specially formulated compound (-105Flex) or translucent blue FEP

Velocity of Propagation: 70%

Shielding Effectiveness: <-90 dB

	SBF402-105Flex	SBF402FEP	SBF405-105Flex	SBF405FEP
Center conductor	SPC	SPC	SPC	SPC
Center conductor diameter	.0376" (7/28)	.0376" (7/28)	.0210" (7/33)	.0210" (7/33)
Dielectric diameter	.117"	.117"	.063"	.063"
Diameter over inner braid	.124"	.124"	.071"	.071"
Diameter over outer braid	.138"	.138"	.085"	.085"
Overall diameter	.180"	.158"	.115"	.105"
Jacket	-105Flex	FEP	-105Flex	FEP
Weight (lbs/mft)	29	29	14	14
Bend radius	0.9"	0.9"	0.6"	0.6"
Impedance (Ohms)	50	50	50	50
Capacitance (pF/ft)	29.4	29.4	29.4	29.4
Operating Temperature	-55°C +105°C	-55°C +200°C	-55°C +105°C	-55°C +200°C
Attenuation (dB/100ft)@	<b>Typ/Max</b>	<b>Typ/Max</b>	<b>Typ/Max</b>	<b>Typ/Max</b>
400 MHz	7.0 / 9.0	7.0 / 9.0	13.6 / 14.8	13.6 / 14.8
1 GHz	11.5 / 14.5	11.5 / 14.5	21.8 / 23.7	21.8 / 23.7
2 GHz	16.8 / 21.9	16.8 / 21.9	31.4 / 35.4	31.4 / 35.4
2.4 GHz	18.6 / 23.3	18.6 / 23.3	34.6 / 39.1	34.6 / 39.1
3 GHz	21.1 / 24.1	21.1 / 24.1	39.0 / 47.9	39.0 / 47.9
5 GHz	28.4 / 32.8	28.4 / 32.8	51.5 / 58.2	51.5 / 58.2
10 GHz	43.0 / 50.0	43.0 / 50.0	75.7 / 86.4	75.7 / 86.4
18 GHz	62.2 / 73.5	62.2 / 73.5	106.1 / 113.9	106.1 / 113.9
Cut-off frequency GHz	34.0	34.0	63.0	63.0

# SBF (Strip Braid Flex™) Coaxial Cable

Harbour's SBF Strip Braid Flex™ coaxial cables, more flexible and supple versions of the industry standard SS Spiral Strip constructions, have been designed with a specially formulated 105°C jacket compound and stranded silver plated copper center conductors. These 50 ohm versions exhibit VSWR levels that meet or exceed similar size flexible constructions, and just like their SS cable counterparts, offer excellent shielding effectiveness with readily available connectors.

Although the insertion loss is slightly higher than their SS cable counterparts, SBF attenuation levels through 18 GHz are substantially lower than comparable MIL-DTL-17 constructions.

SBF Strip Braid cables have also been designed with FEP jackets if a higher 200°C temperature is required.

## Attenuation Calculation and K Factors

Although typical and maximum attenuation values are given for discrete frequencies, typical attenuation values may be calculated by using K1 and K2 factors for each construction. The K1 factor is calculated by taking into consideration the type, strand factor, and diameter of the center conductor, and the impedance of the cable. The K2 factor is calculated by taking into consideration the velocity of propagation and the dissipation factor of the dielectric.

## Formula for Calculating Attenuation using K Factors:

$$\text{Attenuation (dB/100 ft) at any frequency (MHz)} = (\text{K1} \times \sqrt{\text{frequency}}) + (\text{K2} \times \text{frequency})$$

	<b>SBF402-105Flex SBF402FEP</b>	<b>SBF405-105Flex SBF405FEP</b>
K1	.331	.658
K2	.00099	.00099