ARACON®

LIGHTWEIGHT. STRONG. FLEXIBLE.

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AN AMPHENOL COMPANY

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In today's high-performance systems, EMI shielding must do more than just block interference — it must also meet demanding requirements for weight reduction, flexibility, and long-term durability. Traditional metal braids may offer solid shielding, but they add unnecessary bulk, restrict movement, and can be difficult to handle and install.

ARACON® from Micro-Coax is built to overcome these challenges. By combining the lightweight strength of DuPont™ Kevlar® fibers with the conductivity of nickel and the solderability of silver, ARACON® delivers a composite shielding braid that is up to 80% lighter than copper, while still providing excellent EMI/RFI protection, lightning protection, and mechanical performance.

Whether you're designing for weight-sensitive platforms, space-constrained systems, or environments requiring long flex life, ARACON® offers the performance of metal shielding without the downsides.

Features & Benefits

- **Reduce weight by up to 80%** compared to traditional copper braid
- Built for **flexibility and longevity** - tested to withstand 50,000 + tic-toc flex cycles over a 180 degree arc
- **Installs easily**—cuts like fabric with standard tools, **no special equipment required**
- Engineered for performance—combines Kevlar® strength with silver and nickel coating for **conductivity, corrosion resistance, and solderability**
- **Ideal for aerospace and defense systems** where weight, durability, and EMI control are mission critical
- Blended Aracon EMI shields have been qualified for **lightning strike protection**

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Applications

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Aracon Fibers

ARACON® fibers combine the electrical performance of a metal outer layer with the lightweight strength and flexibility of DuPont™ Kevlar®. This powerful combination creates a textile-like material ideal for EMI shielding in cables and harnesses—especially in weight-sensitive environments like aerospace, defense, and advanced electronics.

Offered in a range of sizes and finishes—including nickel and silver—ARACON is approximately 60% lighter than copper at equal volumes. It can be braided using standard metal wire equipment and supports crimping or banding, and soldering when silver plated.

Engineered for demanding environments, ARACON delivers a compelling mix of mechanical durability and electrical performance. Custom configurations, multiple ends, and specialty put-ups are also available to support your unique design needs.

Part Number	Denier	Finish	DC Resistance (Ohms/ft) Maximum	Weight (lbs/1000 ft) Maximum	Break Load (lbs.) Minimum
XN0130E-020	130	Nickel	4	0.028	3
XN0200E-025	200	Nickel	2	0.038	4
XN0400E-018	400	Nickel	1	0.075	10
XS0130E-020	130	Silver	4	0.028	3
XS0200E-025	200	Silver	2	0.038	4
XS0400E-018	400	Silver	1	0.076	10

Aracon Braided EMI Shields

ARACON® Braided EMI Shields are constructed from ultra-fine, highly flexible ARACON fibers designed to optimize shielding coverage and performance. These fine yarn bundles naturally flatten and spread during braiding, enabling coverage levels typically exceeding 90% and helping to minimize windowing.

The high surface-to-volume ratio of ARACON fibers contributes to effective RF EMI shielding—offering a lightweight alternative to traditional AA59569 plated-copper braid shields (see Figure 1 for performance data).

Thanks to ARACON's strength and compatibility with conventional processing, it can be braided directly with metal wire. Micro-Coax offers hybrid braids—typically 75% ARACON and 25% plated copper—ideal for applications requiring reduced DC resistance and enhanced shielding at lower frequencies (below 100 MHz), or for protection against lightning strike events. These blends offer a compelling balance of performance, weight savings, and mechanical durability.

Custom ARACON EMI shield configurations, including varied material ratios and put-ups, are available upon request. Refer to pages 4 and 5 for detailed performance data and specifications.

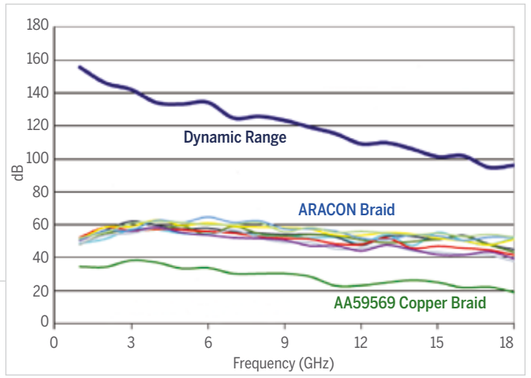

Figure 1:
RF Shielding effectiveness of Aracon braid and AA59569 copper braid when tested in a mode-stirred chamber per IEC 61000-4-21, Annex F.

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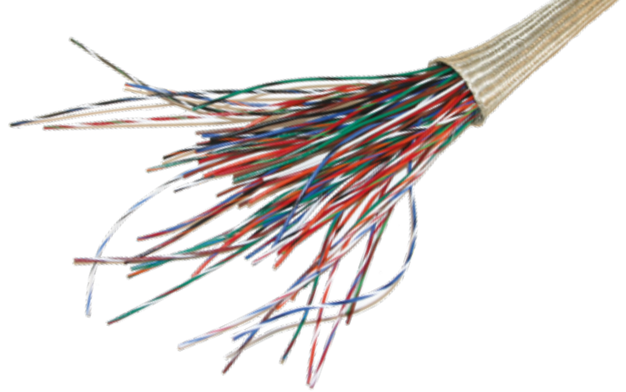
Braided EMI Shields



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100% Nickel-Plated ARACON®

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid* (g/ft)
		Min	Max			
0.0625	BXN0200E/00-100/0-0062-1	0.045	0.085	210.9	0.57	2.14
0.125	BXN0400E/00-100/0-0125-1	0.090	0.150	75.9	1.43	4.02
0.250	BXN0400E/00-100/0-0250-1	0.125	0.312	36.7	2.76	7.74
0.375	BXN0400E/00-100/0-0375-1	0.187	0.562	24.1	4.08	11.46
0.500	BXN0400E/00-100/0-0500-1	0.250	0.750	17.8	5.37	15.17
0.625	BXN0400E/00-100/0-0625-1	0.375	0.875	17.6	6.82	40.23
0.750	BXN0400E/00-100/0-0750-1	0.500	1.000	11.9	8.04	23.54
1.000	BXN0400E/00-100/0-1000-1	0.780	1.187	8.5	13.22	60.70
1.250	BXN0400E/00-100/0-1250-1	0.938	1.312	5.9	16.34	83.01
1.500	BXN0400E/00-100/0-1500-1	1.187	1.875	5.7	20.00	90.45
2.000	BXN0400E/00-100/0-2000-1	1.300	2.125	3.6	26.66	120.21

100% Silver-Plated ARACON®

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid* (g/ft)
		Min	Max			
0.0625	BXS0200E/00-100/0-0062-1	0.045	0.085	210.9	0.57	2.14
0.125	BXS0400E/00-100/0-0125-1	0.090	0.150	75.9	1.44	4.02
0.250	BXS0400E/00-100/0-0250-1	0.125	0.312	36.7	2.79	7.74
0.375	BXS0400E/00-100/0-0375-1	0.187	0.562	24.1	4.13	11.46
0.500	BXS0400E/00-100/0-0500-1	0.250	0.750	17.8	5.44	15.17
0.625	BXS0400E/00-100/0-0625-1	0.375	0.875	17.6	6.79	40.23
0.750	BXS0400E/00-100/0-0750-1	0.500	1.000	11.9	8.15	23.54
1.000	BXS0400E/00-100/0-1000-1	0.780	1.187	8.5	13.39	60.70
1.250	BXS0400E/00-100/0-1250-1	0.938	1.312	5.9	16.56	83.01
1.500	BXS0400E/00-100/0-1500-1	1.187	1.875	5.7	20.27	90.45
2.000	BXS0400E/00-100/0-2000-1	1.300	2.125	3.6	27.02	120.21

*Weight is based on AA59569 industry standard braid shielding

75/25% Blended Nickel-Plated ARACON®

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid* (g/ft)
		Min	Max			
0.0625	BXN0200E/NC-75/25-0062-1	0.045	0.085	28.8	1.21	2.14
0.125	BXN0400E/NC-75/25-0125-1	0.090	0.150	26.8	2.32	4.02
0.250	BXN0400E/NC-75/25-0250-1	0.125	0.312	9.1	4.01	7.74
0.375	BXN0400E/NC-75/25-0375-1	0.187	0.562	6.0	6.06	11.46
0.500	BXN0400E/NC-75/25-0500-1	0.250	0.750	4.4	8.05	15.17
0.625	BXN0400E/NC-75/25-0625-1	0.375	0.875	4.6	11.13	40.23
0.750	BXN0400E/NC-75/25-0750-1	0.500	1.000	5.6	11.71	23.54
1.000	BXN0400E/NC-75/25-1000-1	0.780	1.187	4.3	17.53	60.70
1.250	BXN0400E/NC-75/25-1250-1	0.938	1.312	3.0	21.68	83.01
1.500	BXN0400E/NC-75/25-1500-1	1.187	1.875	1.3	30.50	90.45
2.000	BXN0400E/NC-75/25-2000-1	1.300	2.125	1.0	40.66	120.21

75/25% Blended Silver-Plated ARACON®

Nominal Size (in)	Braid PN	Reference Wire Bundle Range (in)		Max DC Resistance (mΩ/ft)	Max Weight (g/ft)	Weight of Copper Braid* (g/ft)
		Min	Max			
0.0625	BXS0200E/SC-75/25-0062-1	0.045	0.085	28.8	1.21	2.14
0.125	BXS0400E/SC-75/25-0125-1	0.090	0.150	18.8	2.09	4.02
0.250	BXS0400E/SC-75/25-0250-1	0.125	0.312	9.1	4.04	7.74
0.375	BXS0400E/SC-75/25-0375-1	0.187	0.562	6.2	5.98	11.46
0.500	BXS0400E/SC-75/25-0500-1	0.250	0.750	4.4	7.87	15.17
0.625	BXS0400E/SC-75/25-0625-1	0.375	0.875	4.4	9.82	40.23
0.750	BXS0400E/SC-75/25-0750-1	0.500	1.000	2.9	11.79	23.54
1.000	BXS0400E/SC-75/25-1000-1	0.780	1.187	2.4	17.66	60.70
1.250	BXS0400E/SC-75/25-1250-1	0.938	1.312	1.7	21.84	83.01
1.500	BXS0400E/SC-75/25-1500-1	1.187	1.875	1.3	30.70	90.45
2.000	BXS0400E/SC-75/25-2000-1	1.300	2.125	1.0	40.93	120.21

*Weight is based on AA59569 industry standard braid shielding

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Specifications and Qualifications

Mechanical

Designed for 90% minimum optical coverage.
Withstands 50,000 flexures of ±90° around a mandrel no greater than 10 times the nominal braid diameter.
Minimum continuous length of 10 feet.

Electrical

DC resistance as specified in the Data Tables in pages 4 and 5 of this document.
Blended Aracon braids qualified for lighting susceptibilityto Level 3 to Level 5 multi-strike capability per ANSI/EIA 364-75 and RTCA DO-160 protection. The capability exceeds 25kVA Waveform 5B.
RF Shielding Effectiveness per the figure on page 3 when tested per IEC 61000-4-21, Annex F.

Environmental

Operating temperature off -110 °C to +150 °C with intermittent exposure to 200 °C.
Thermal shock per MIL-STD-202, Method 107, Test Condition B-2.mately 10 to 20 dB/decade.
Meets requirements for low outgassing materials when tested per ASTM E-595. Exhibits less than 1% Total Mass Loss (TML) and 0.1% Collected Volatile Condensable Materials (CVCM).
Does not support the growth of fungus when tested in accordance with MIL-STD-810, Method 508.5.
48-hour exposure to a salt fog environment in accordance with ASTM B-117.
48-hour exposure to a sulfur dioxide environment in accordance with ASTM G-85, Annex A4 and X4.
FAA flammability requirements as specified in CFR 14 Part 25.
FAA smoke density requirements as specified in CFR 14 Part 25.
Smoke toxicity as specified in BSS 7239 and AITM 2.0008.
Chemical and liquid resistant when tested per MIL-STD-810 Method 504. Contact Micro-Coax for a complete list of liquids tested.

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Applications

Aracon braided EMI shields have been qualified to meet and exceed the Aerospace industry standards for braided shields as listed in the Specifications and Qualification table on pg. 6. Aracon also has over 30 years of heritage in Spaceflight cabling and harnessing applications. Whether you're designing a solution for weight-sensitive platforms, to protect your system from EMI, RFI or lightning strikes, for space constrains, or for long flex life, ARACON offers the performance of metal shielding braids without the downsides.

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