

Esoteric
MEXCEL
Cable



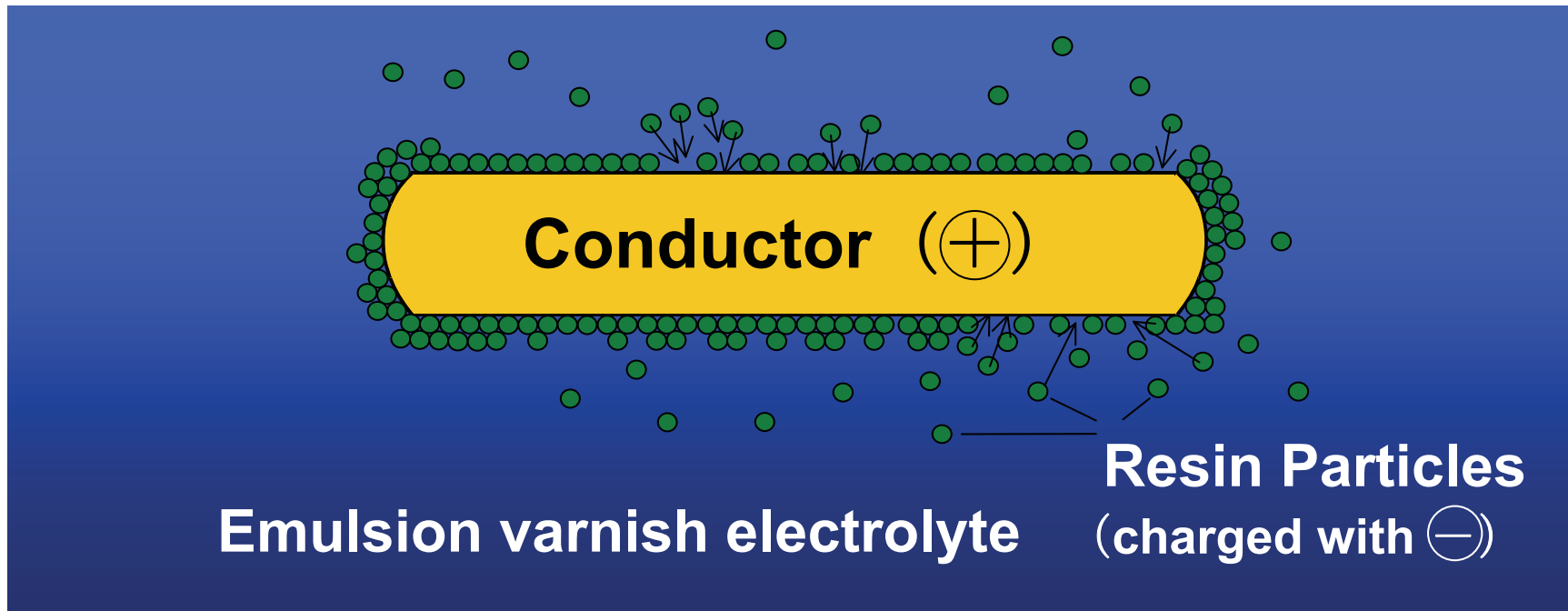
What is “MEXCEL”?

“MEXCEL” is the fine conductor technology incorporating “MEDIS” electro-coating insulation. (MEDIS: Mitsubishi Electro-Deposition Insulating System).

“MEDIS” is a electro-coating technology applying very even insulation layers to the conductor surface.

“MEDIS” electro-coating technology

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- Electro-coating process provides exceptionally even coating to the surface.
- Corner surface is coated with extra “passes” creating a thicker coating.
- **Conventional “dip-coating” process cannot provide an even coating surface, especially at the corners.**

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“Skin Effect”

“Higher frequency runs on the surface of the conductor.”

Negative factors of “skin effect” are;

- Reduced effective-cross-section-area of higher frequency signal path.
- The higher the frequency, the higher the resistance.
- Frequency-dependent, unstable signal impedance response.

Lower frequency (runs in the conductor equally) Higher frequency (runs on the surface)



Skin Depth

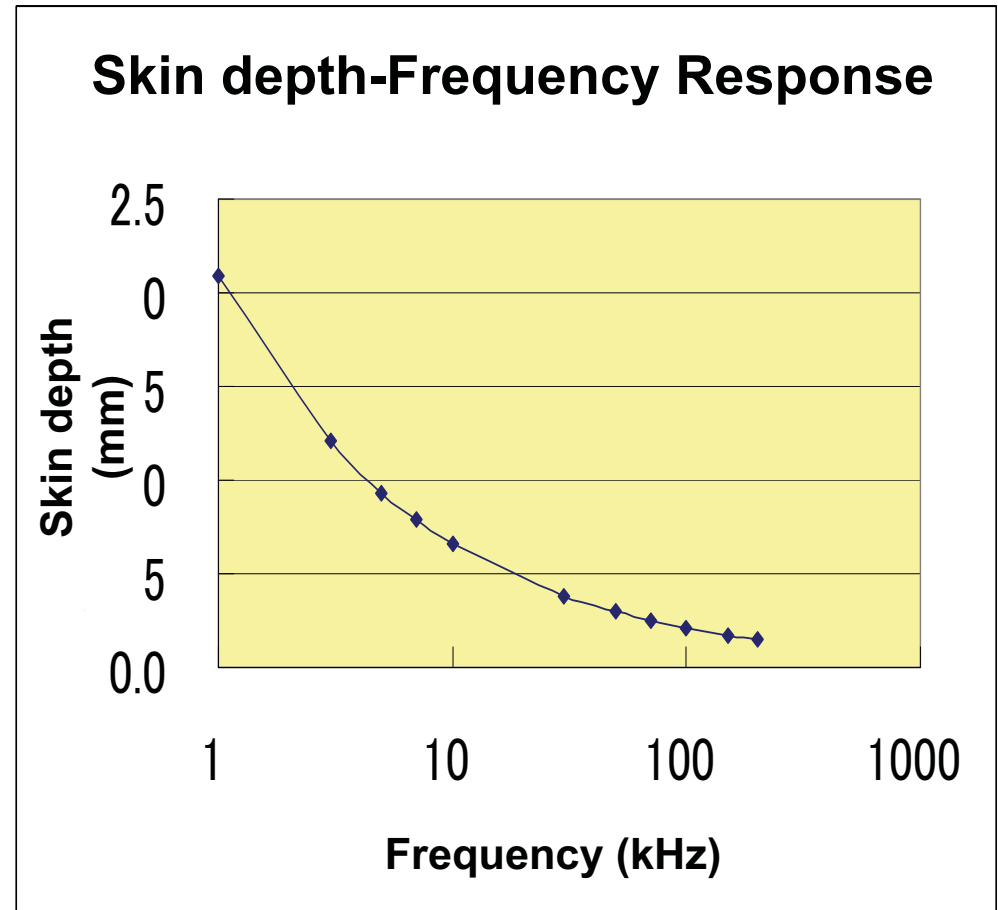
skin depth δ (m) = $\sqrt{2 / \omega \mu \sigma}$

ω : $2\pi f$ (f: frequency)

μ : magnetic induction rate ($4\pi \times 10^{-7}$)

σ : electro induction rate (Cu: 58×10^6)

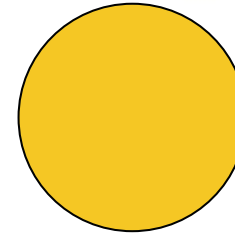
Frequency [kHz]	Skin depth [mm]
1	2.090
3	1.206
5	0.934
7	0.790
10	0.661
30	0.381
50	0.296
70	0.250
100	0.209
150	0.171
200	0.148



Flat Wire vs. Round Wire



2mm width × 0.1mm thickness



0.5mm ϕ

Cross section area size

Flat wire = Round wire

Circumference size

Flat wire (4.2 mm) > Round wire (1.57 mm)

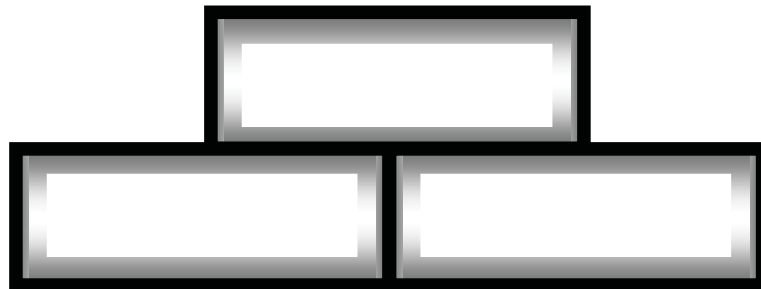
Flat wire is more than twice as large!

This means that flat wire reduces the skin effect resulting in;

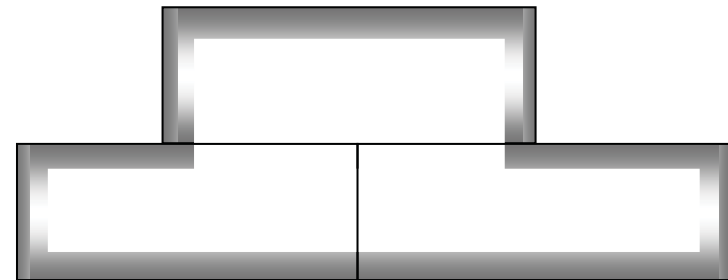
- Lower resistance through the entire frequency range**
- Ultra stable signal impedance response**

Insulation Effect

The flat wire effectively reduces the skin effect in combination with proprietary MEDIS insulation technology.

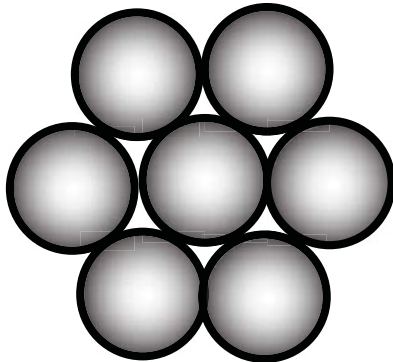


With MEDIS coating

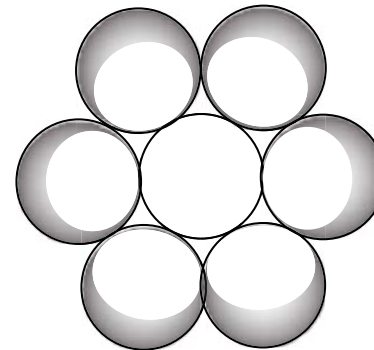


Without MEDIS, skin area is reduced

The MEDIS insulation is also effective in round wire configuration in that it has a larger skin area.

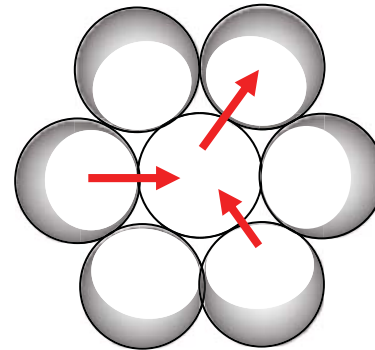
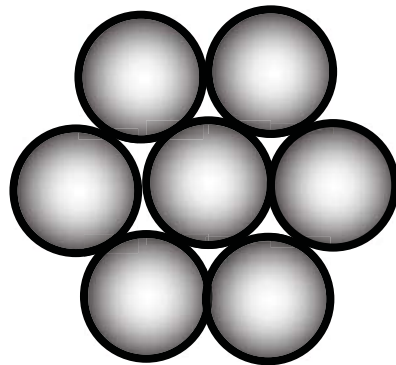
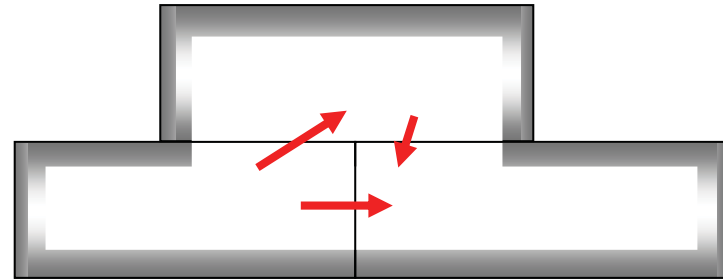
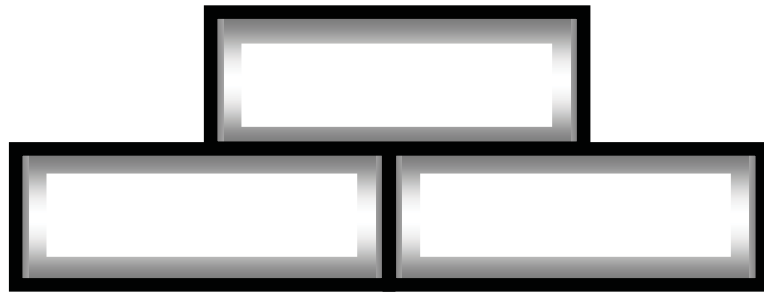


With MEDIS coating



Without MEDIS, the skin area is reduced

Insulation Effect

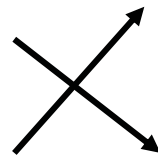


**Unwanted “signal jump” between wire causes signal distortion.
With MEDIS insulation, MEXCEL is free from signal jump!**

Spiral Braiding Conductor

Spiral braiding effectively cancels the magnetic field generated by current.

Spiral braiding



MEDIS electro-coating insulation

- Reduced “skin effect”
Ultra low resistance even at high frequency
- Exceptionally flat impedance response
through the entire frequency range **(up to 18GHz) !!**
- Wide range signal transfer
- Low distortion due to no signal jumping
between wires

Flat wire braiding

- Further improvement for “skin effect” reduction
- Perfect shielding from RF generated noise



MEXCEL Cable

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High purity 7N Copper (Cu) conductor

- 99.99999% purity / less-than-0.01 ppm of metallic impurities
- Ultimate level quality control
(“GD-MS” material analysis technology).
- “Stress free” annealing (special temperature control)

Audiophile cable design

- Low-dielectric insulation
(PTFE, specially treated polyethylene, polyolefin, etc)
- UV resistant polyurethane jacket



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Digital/Analog Interconnect Cable

7N-DA6000 MEXCEL

7N-DA6100 MEXCEL

7N-A2500 MEXCEL

7N-DA5100 MEXCEL

Speaker Cable

7N-S10000 MEXCEL

7N-S9000 MEXCEL

AC Power Cable

7N-PC9100 MEXCEL

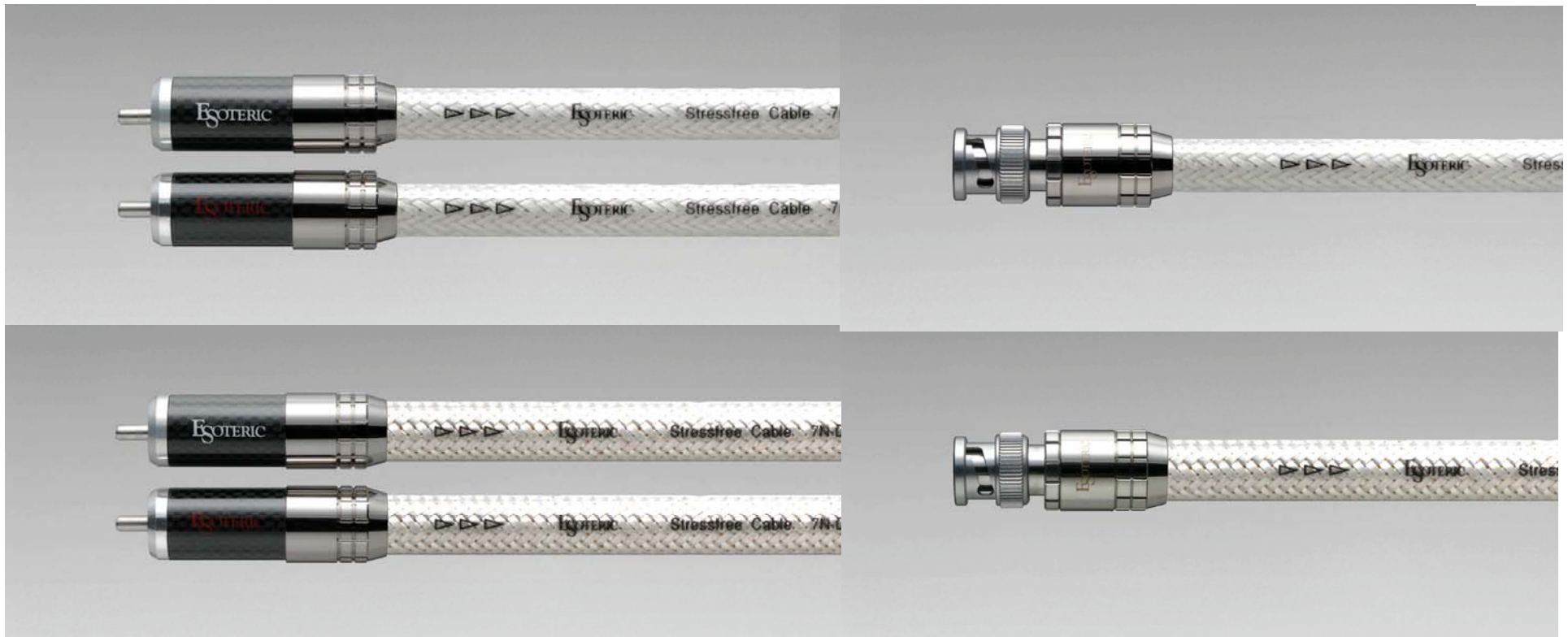


Digital / Analog Interconnect Cable

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7N-DA6000 : diameter 9.3mm

7N-DA6100 : diameter 10.9mm



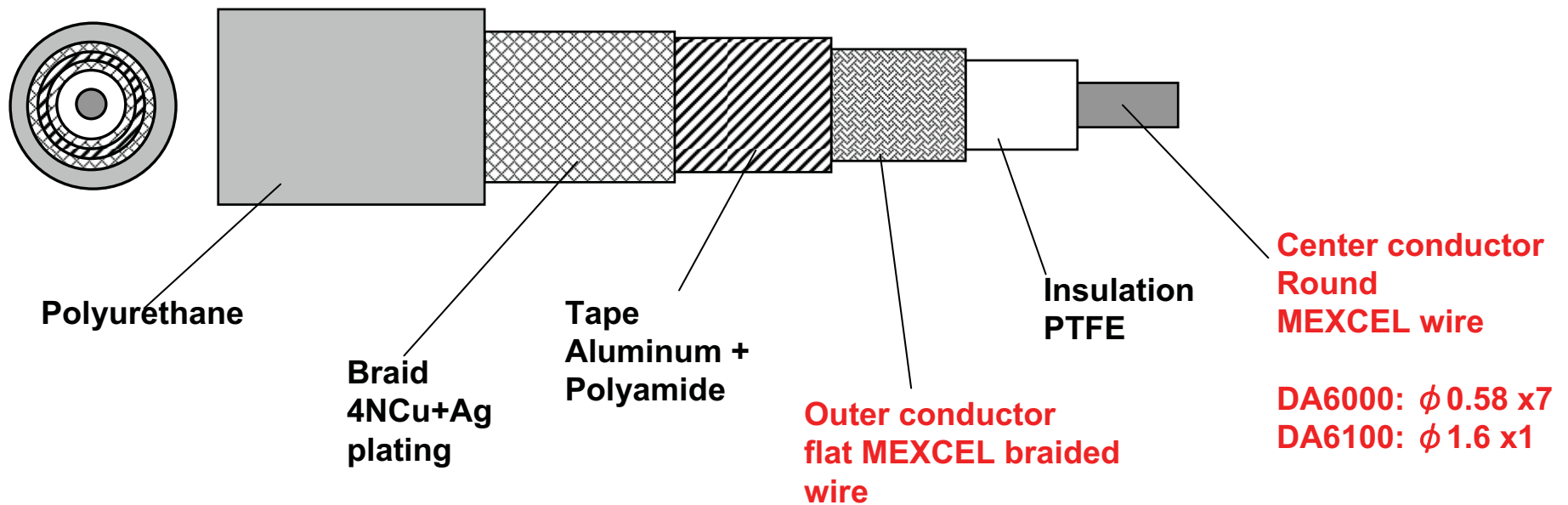
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Digital / Analog Interconnect Cable



7N-DA6000 : diameter 9.3mm

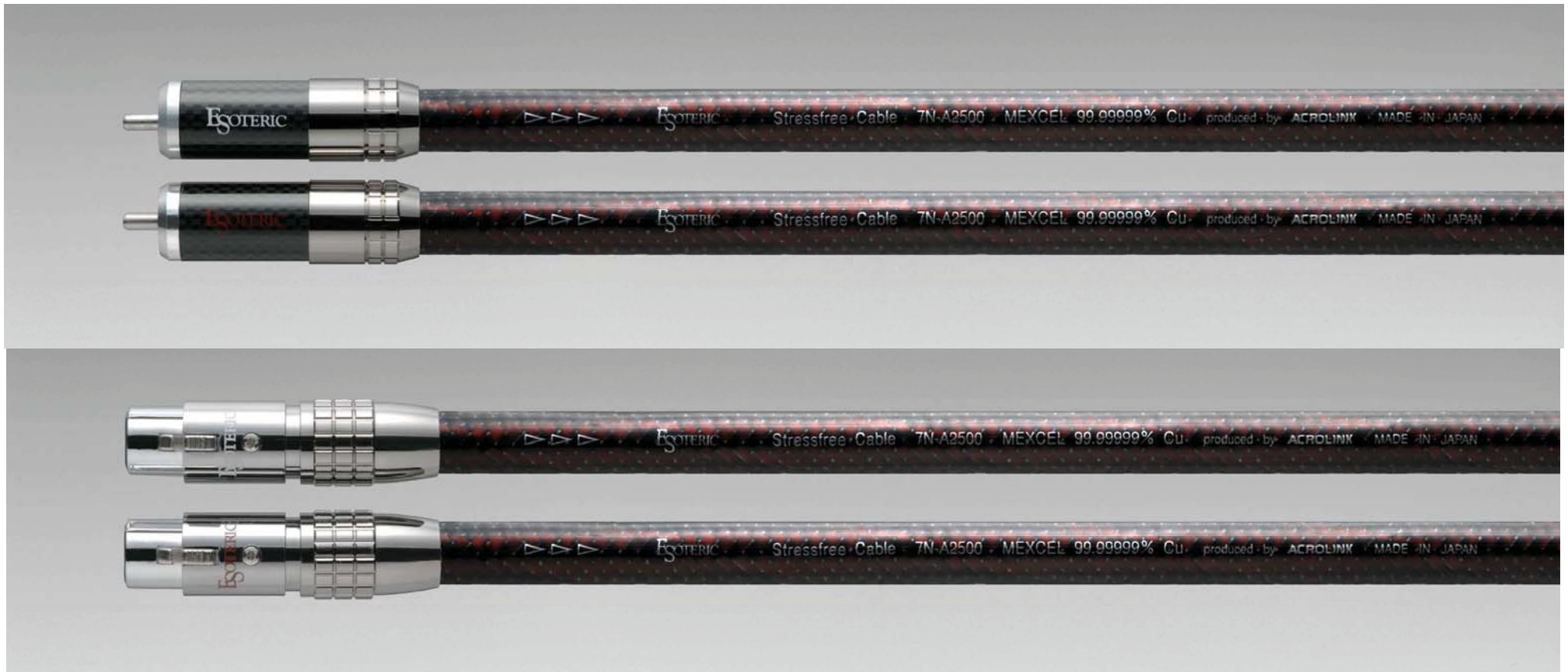
7N-DA6100 : diameter 10.9mm



Digital / Analog Interconnect Cable

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7N-A2500 : diameter 11.0 mm

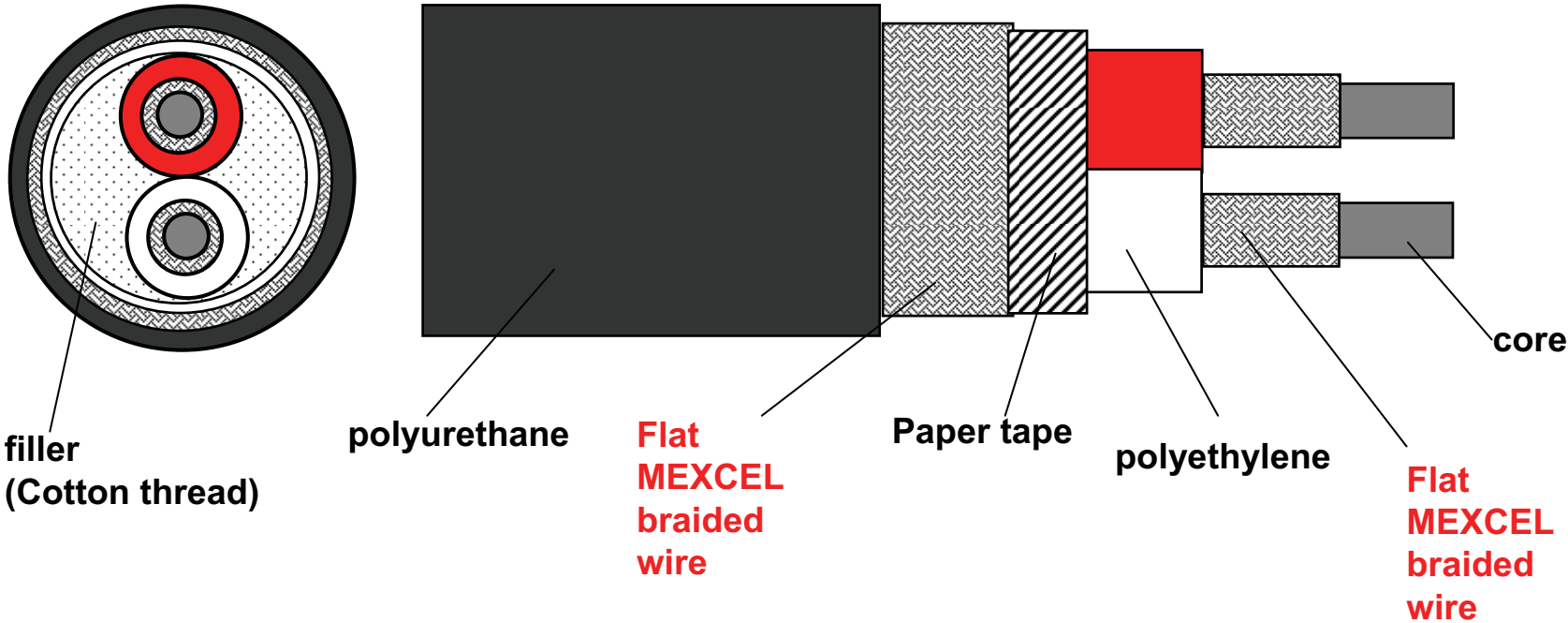


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Digital / Analog Interconnect Cable



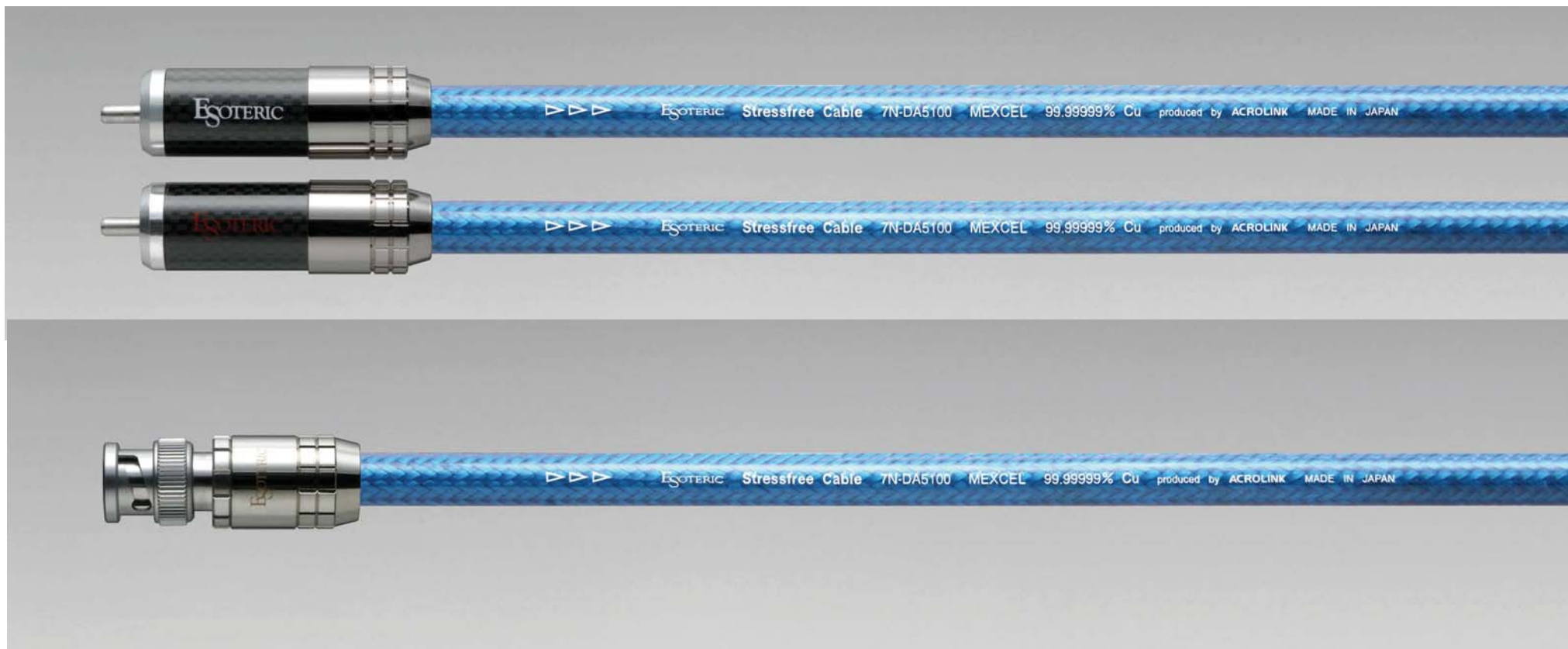
7N-A2500 : diameter 11.0 mm



Digital / Analog Interconnect Cable

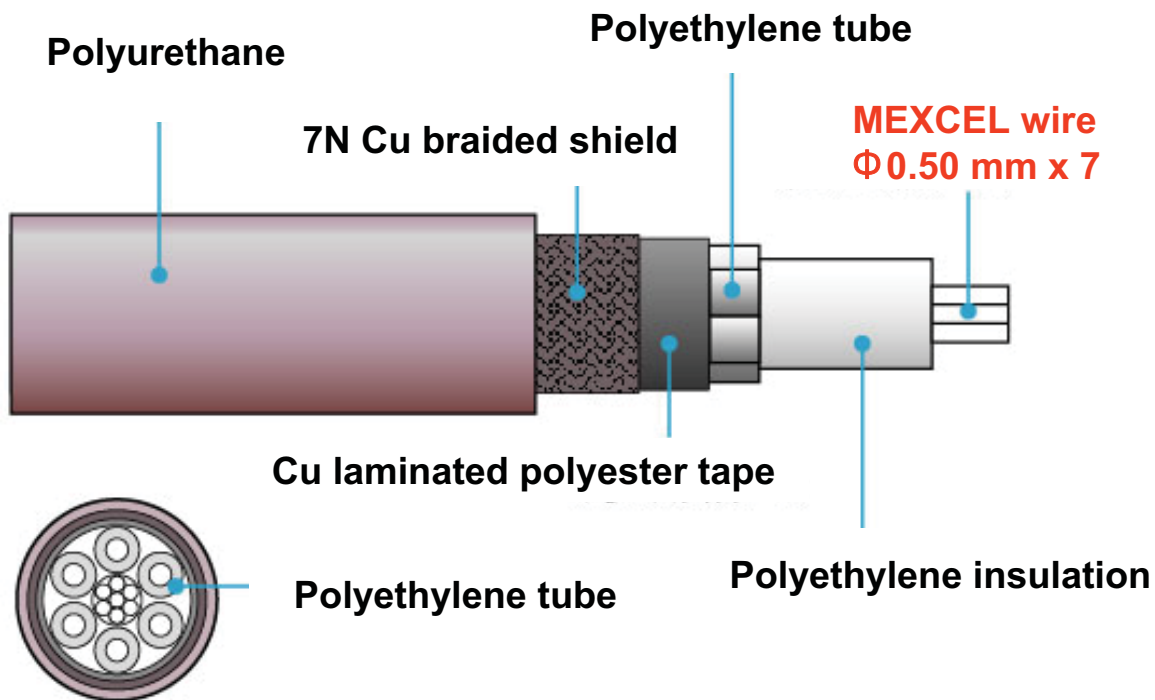
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7N-DA5100 : diameter 10.4 mm



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7N-DA5100 : diameter 10.4mm



The “air” is the ultimate insulation material for its lowest dielectric properties.

With “air” tubes, 7N-DA5100 MEXCEL features high flexibility and extremely low dielectric and capacitance.

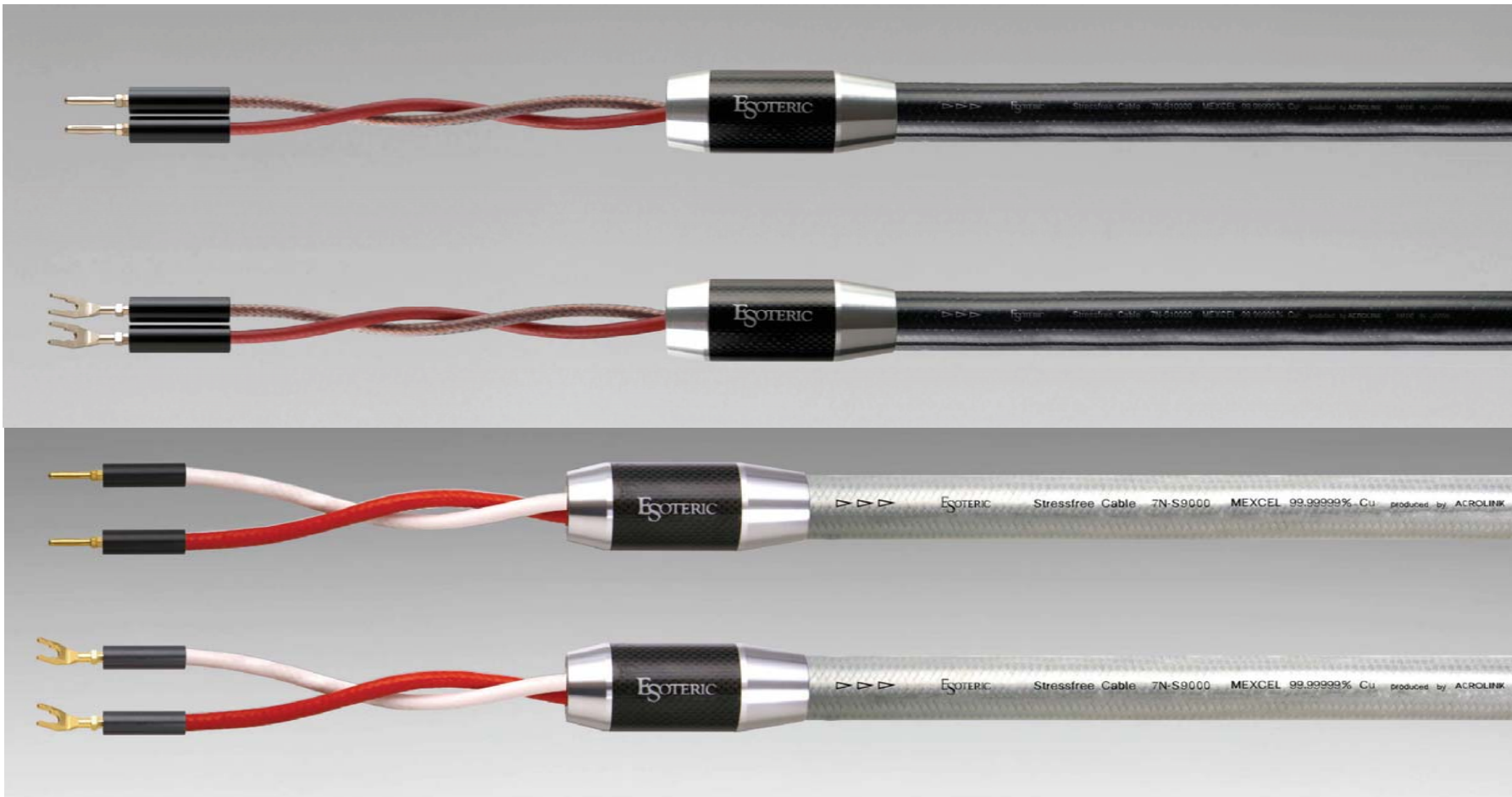
The core conductor is round MEXCEL wire.

Speaker Cable

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7N-S10000 : diameter 20.0 mm

7N-S9000 : diameter 21.0 mm

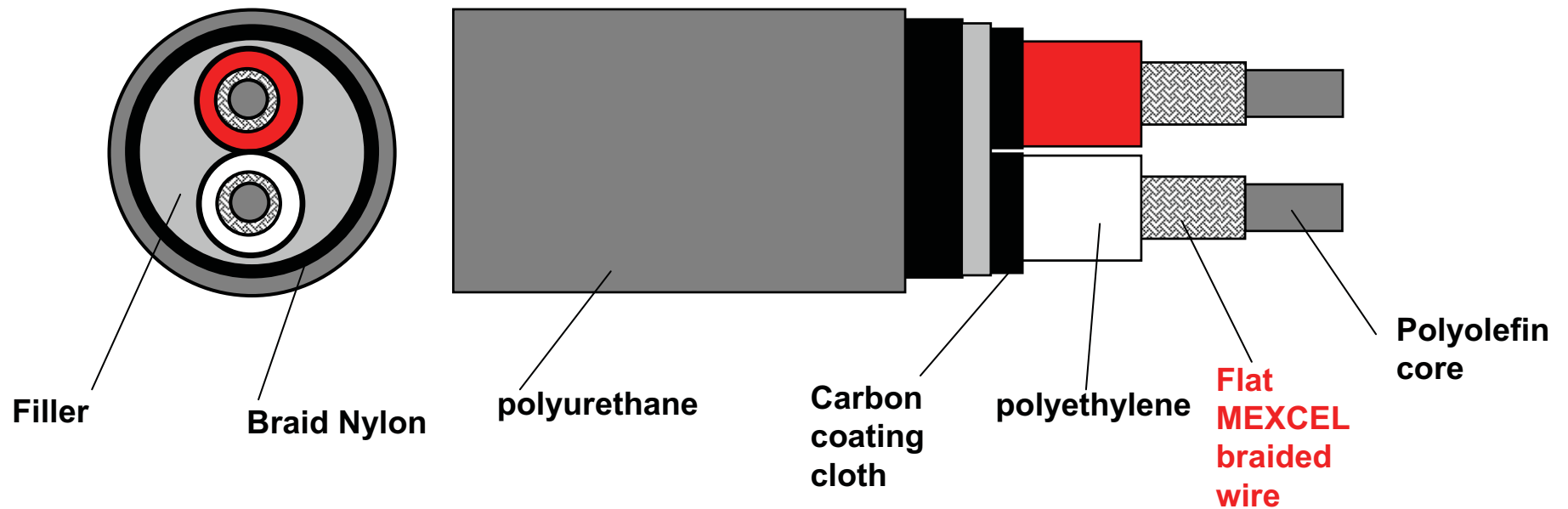


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Speaker Cable

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7N-S10000 : diameter 20.0 mm



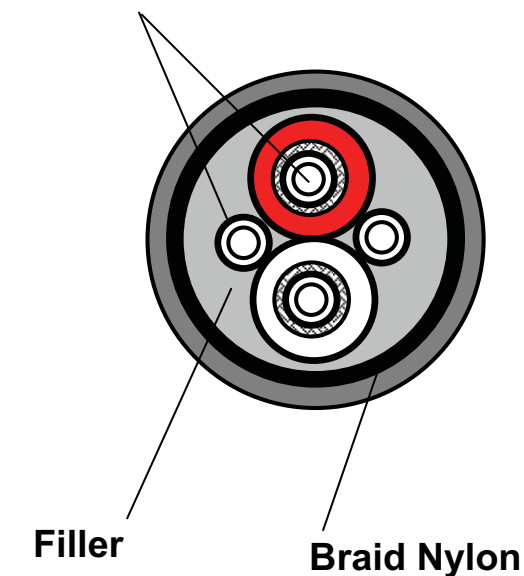
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Speaker Cable

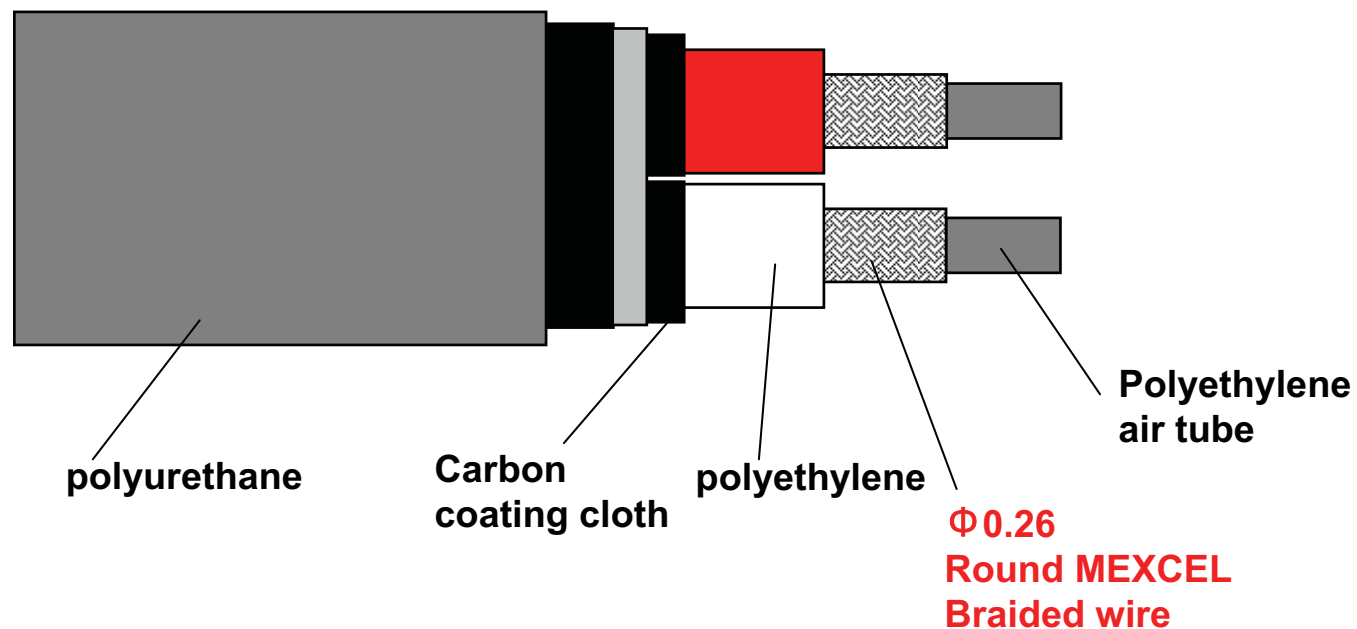
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7N-S9000 : diameter 21.0 mm

Polyethylene
air tube



The "air" insulation version of the 7N-S10000 with round MEXCEL wire



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AC Power Cable

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7N-PC9100 : diameter 15.5 mm



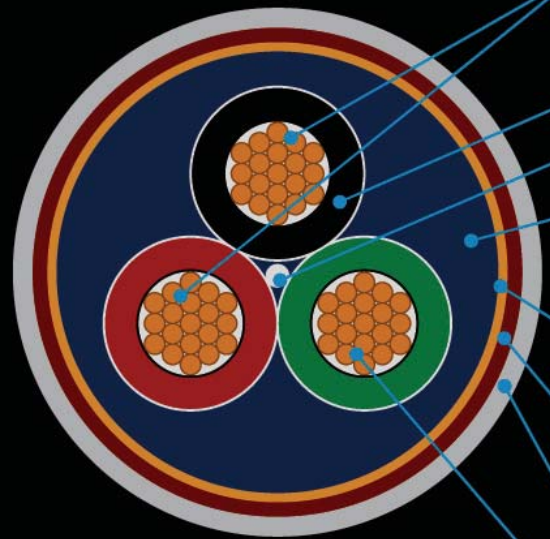
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AC Power Cable

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7N-PC9100 : diameter 15.5 mm

7N-PC9100構造図



Stress free 7N Cu MEXCEL
 $\Phi 0.32 \text{ mm} \times 50$

Polyolefin Insulation
Electromagnetic absorption thread

Filler (Polyolefin + tungsten powder
+ amorphous powder + carbon powder)

Copper tape shielding

Braided Urethane Enameled Copper

UV resistant polyurethane

Stress free 4.5N Cu ground wire
 $\Phi 3.2 \text{ mm} \times 50$

EGOTERIC

ESOTERIC

MEXCEL
CABLE



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