Brass Laminated Amperium® Wire

Second generation HTS wire for high-current cable applications.

AMSC brass laminated Amperium wire conducts more than 100 times the electrical current of copper wire of similar dimensions. Used in high-current AC or DC cable applications, such as power transmission and distribution, this high temperature superconductor (HTS) Amperium wire offers a significant increase in the amount of power that can be carried regardless of voltage. Amperium wire's unique, patented, laminated construction combined with its dual impedance characteristic, allows for the construction of cables with intrinsic fault current limiting capability, providing high capacity under normal conditions and high resistance during fault conditions. AMSC's brass laminated Amperium wire provides high strength and stability with ease of stranding and handling.

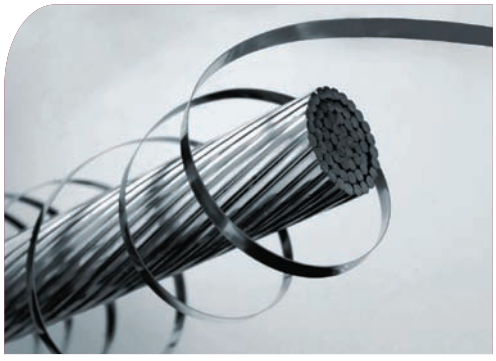
Revolutionizing the industry
Amperium wire has changed the industry with its revolutionary ability to conduct over 100 times the electrical current (amperage) of conventional wire. As an example, just one of these ultra-thin brass-based wires carries enough power to serve the needs of approximately 10,000 US homes.

Reducing the footprint and costs
The high power density of Amperium wire allows for the construction of cables that dramatically reduce the footprint of conventional installations while providing the opportunity to provide for greatly enhanced power handling capacity.

Ideal for all cable applications
Brass laminated Amperium wire (with brass providing mechanical, electrical and thermal cycling reliability) can be used in superconductor AC and DC transmission, distribution, surge-suppressing cable systems and fault current limiter systems.

Cabling reliability
Amperium wire is designed for cabling on a wide range of formers with tight pitch and large back tension. It is highly durable in pressure-cycled liquid nitrogen, including splices and joints.

Lengths made to order
Brass laminated Amperium wire for cable applications is available in an industry standard 4.4 mm width and in lengths made to order.



AMSC's Amperium wire wound around a copper bundle with equivalent current carrying capability. Amperium wire conducts more than 100 times the electrical current of equivalent sized copper wire.

- High strength, robust and reliable
- Thick and buckling resistant for easy stranding and handling
- Pre-tinned for ease of field joints

HTS brass laminated Amperium® wire designed for cable manufacturing.

Second generation HTS wire for high-current cable applications

MECHANICAL PROPERTIES

Average thickness:	0.36 mm - 0.44 mm
Minimum width:	4.24 mm
Maximum width:	4.55 mm
Minimum double bend diameter (RT):	35 mm[i]
Minimum double bend diameter for spliced wire (RT):	100 mm[i]
Maximum rated tensile stress (RT):	200 MPa[i]
Maximum rated wire tension (RT):	30 kg[i]
Maximum rated tensile strain (77K):	0.3%[i]

CABLING RELIABILITY:

Designed for cabling on a wide range of formers with tight pitch and large back tension. Durable in pressure cycled liquid nitrogen, including splices and joints.

ELECTRICAL PROPERTIES

Minimum amperage (I_c)[ii]
70 A
80 A
90 A
100 A
≥100A (Contact Factory)
Spliced wire available in long lengths
Insulation options: Contact factory
Certificate of Conformance provided. Certificate of Analysis optionally available. Contact factory. Leaders and trailers optionally available. Contact factory.

[i] Greater than 95% I_c retention
[ii] 77K, self-field, 1 µV/cm

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...better energy

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