Amperium® Copper Laminated Coil Formulation Wire

Type 8502-350

New coil formulation HTS wire for power-dense coil applications. Available in 12 mm width.

AMSC's Amperium copper laminated coil formulation high temperature superconductor (HTS) wire conducts more than 150 times the electrical current of copper wire of similar dimensions. Used in power dense coils for synchronous motors, generators and magnets, it can dramatically reduce the size and weight of large-scale electrical equipment. AMSC's Amperium copper laminated coil formulation HTS wire provides significantly greater power throughput and efficiency as well as high strength and stability with outstanding bend tolerance.

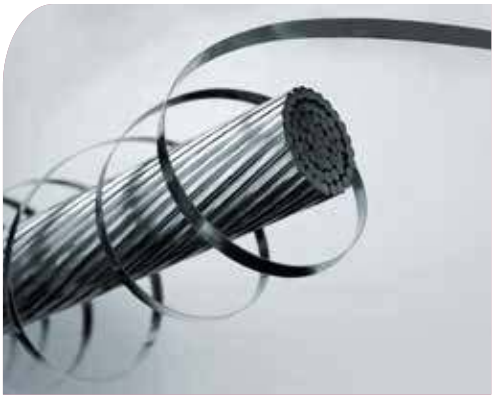
Responding to current demand
Amperium wire has changed industry with its revolutionary ability to conduct over 150 times the electrical current (amperage) of conventional wire.

Reducing the footprint and costs of large-scale equipment
The high power density of Amperium wire dramatically reduces the size, weight and often the overall cost of large-scale electrical equipment while also increasing efficiency for applications such as magnets and wind generators when compared with systems based on traditional copper wire.

Ideal for all coil applications
Coils made utilizing Amperium wire can be effectively applied to ship propulsion motors and generators, wind turbine generators, transformers, SMES, hydro generators and large coils within many industries.

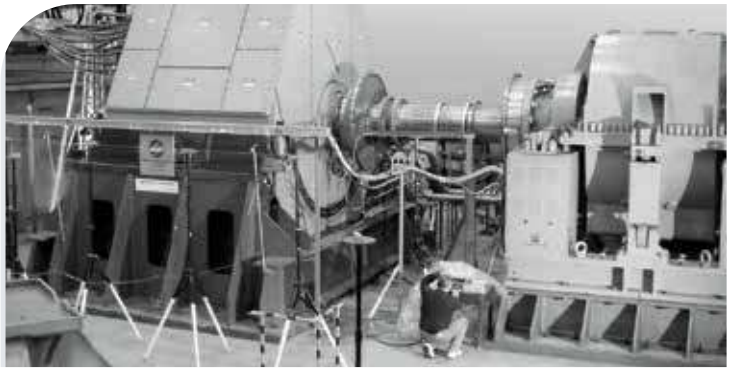
Enhanced strength and electrical stability
The copper laminated wire features wide solder fillets at the edges, which assure hermeticity, high C-axis strength for epoxy encapsulated coils and enhanced electrical stability – for maximum performance and reliability.

Optimized Width
Manufactured utilizing a high-volume and proprietary process, AMSC's Amperium copper laminated coil formulation wire is available in 12 mm width. The extra wide, high current 12 mm design reduces wire length requirements and pancake coil stack count.



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.

- Ic optimized for high fields in conduction cooled coils
- Ic at 30K exceeds 700A
- High strength and stability
- Solder fillets at edges for high c-axis strength and enhanced electrical stability
- Robust product with outstanding bend tolerances
- **Reduces the cost of HTS in your application by about half**



AMSC 36.5 MW, 120 rpm ship propulsion motor

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MECHANICAL PROPERTIES	12 mm
Average thickness:	0.18 mm - 0.22 mm
Minimum width:	11.9 mm
Maximum width:	12.3 mm
Minimum double bend diameter (RT):	30 mm[i]
Minimum double bend diameter for spliced wire (RT):	100 mm[i]
Maximum rated tensile stress (RT):	150 MPa[i]
Maximum rated wire tension (RT):	30 kg[i]
Maximum rated tensile strain (77K):	0.3%[i]
Maximum rated C-Axis stress:	20 MPa[i]

ELECTRICAL PROPERTIES	12 mm
Minimum amperage (I_c)[ii]	**Average Engineering current density - J_e**
350 A	14,400 A/cm^2
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, 1 m resolution
[iii] J_e is based on average nominal thickness and width

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...better energy

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