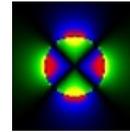


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Magnet Division Procurement Specification

Specification Number: SMD-MAG-2001

Revision: C



Superconducting
Magnet Division

Magnet Coil Conductor Insulation, Procurement Specification For

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Revision History

Rev. A: Initial Release 7/22/10
Rev. B: Revised per ECN MG1331 11/3/10
Rev. C: Revised per ECN MG1333 11/4/10

1 Scope:

This procedure establishes and defines the requirements for electrical insulating material applied to single superconducting conductor used for magnet fabrication. Superconducting conductor shall be supplied to the vendor by BNL. The seller shall provide all other material, certifications, personnel and all other associated facilities necessary to fabricate, inspect, test, package and ship the insulated material as specified herein.

2 Applicable Documents:

The following documents in effect on the date of invitation to quote form a part of this specification to the extent specified herein:

Dupont-Summary of
Properties E-72087

Kapton Polyimide film – General Information

Dupont General
Procedures Bulletin
GS-85-3

Procedures for the film properties and
characteristics of Kapton Polyimide Film

3 Process Materials:

Cable Type	Procedure Reference	Technical Reference	Source /Control
Round Wire up to 0.025” in diameter	Polyimide Film, 0.001-in. thick, 0.093-0.156 wide	Kapton Film Type HN	E.I. DuPont Co. Polymer Products Dept. Industrial Films Div. Wilmington DE
Rectangular Conductor 0.045”X0.070”	Polyimide Film 0.001 in. thick, .25-.50 wide	Kapton Film Type HN	E.I. DuPont Co. Polymer Products Dept. Industrial Films Div. Wilmington DE

4 Requirements:

4.1 General – Any and all conflicts among the requirements listed in this procedure are to be brought to the attention of the buyer for resolution prior to the commencement or continuation of work. Under no circumstances is the seller to take any initiative without this resolution.

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4.2 Insulation Material – The insulation material shall be a polyimide polymer in the form of a film with electrical and mechanical properties that equal or exceed those listed for Kapton H film in DuPont Bulletin GS-85-3.

4.3 Handling – Insulated conductor must be handled with care during fabrication, packing, shipping and usage so as not to damage the insulation and/or conductor.

5 Procedure:

5.1 Wind the polyimide film on the conductor in a spiral manner with 40-49% overlap, single wrap. The tensile force on the film during winding shall be 5.0 – 10.0 ounces.

6 Quality Assurance Provisions:

The Quality Assurance Provisions of this procedure require compliance with the procedural instructions described herein.

7 Preparation for Delivery:

Packaging – The insulated conductor will be shipped on non-metallic spools so that adequate protection is provided during shipment. The spool outer diameter shall be 6.0 in. The maximum and minimum unbroken footage per spool shall be established at the time of the purchase order.

Marking /Identification Requirements – Spools and exterior packaging shall be identified with the following information in the order shown. Note: BNL supplied conductor will be identified with a spool number. That spool number shall be included in the below label as shown:

Superconducting Conductor

Part No.: As noted on Purchase Order

Buyer P.O. _____

Length: _____ ft.

Weight: _____ lbs.

Spool No. of BNL supplied conductor _____

Date of Insulation: _____

Name of Company Performing Insulation: _____