**Magnets, Superconductors and Cryostats**

**TE-MSC**

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Internal Note 2015-xx

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**Cable H12EC0173A for Coils 201 and 202 of the SMC\_11T # 4**

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**1. Introduction**

The rectangular cable described in this Internal Note was fabricated for the two coils (201 and 202) of the SMC\_11T # 4 magnet. The characteristics of the cable and of the wires are summarized in Tables I-III.

**Table I – Production Info**

|  |  |
| --- | --- |
| Production length | **147 m** |
| Fabrication date | **September/20/14** |
| Run identification | **129A** |

**Table II – Cable Characteristics**

|  |  |
| --- | --- |
| Transposition Pitch (mm) | **100** |
| Mid Thickness (mm) | **1.2463 (σ=** **0.0014)\*** |
| Width (mm) | **14.679 (σ=0.0023)\*** |
| Keystone Angle | **0.01° (σ=0.019)\*** |
| Number of Strands | **40** |
| Core Width (mm) | **12** |
| Core Thickness (μm) | **25** |

\*Standard Deviation ≡ σ

**Table III – Wire Characteristics**

|  |  |
| --- | --- |
| Strand Diameter (mm) | **0.7** |
| Strand Type | **PIT** |
| Billets | **36521** |
| Max Ic(4.22 K, 12 T)\*\* | **414 A** |
| Min Ic(4.22 K, 12 T)\*\* | **406 A** |
| Max RRR\*\* | **103** |
| Min RRR\*\* | **95** |

\*\*Data (from BEAS) for virgin wires reacted 100 hrs at 600 °C, 240 hrs at 620 °C