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Wed-Af-Po3.25-04 [108]: Performance of MgB2 Superconductor developed for high-efficiency Klystron Applications

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The performance of MgB2 wire (O.D. = 0.67 mm, Length = 8 km) made for a prototype solenoid magnet for X-band (12 GHz) klystron are presented. This solenoid magnet is fabricated by using Wind & React method and is operated as a cryogen-free magnet at 20 K. In this paper, tensile- and bending-stress tolerances of the non-reacted wire and the properties (Ic-B-T, RRR and homogeneity) of the reacted wire are presented. These properties are used for designing a small test coil and the magnet for the klystron application. In addition, to realize the MgB2 coils by using React & Wind method in future, the minimum bending radius of the reacted wire is discussed.

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