Material procurement for the HDMS coil

Magnus Dam
In stock: HTS tape

- THEVA HTS tape (200 + 102 + 191 + 156 + 101 + 100) meters. Minimum $I_c$ (77 K, s.f.) 510 A.
- SuperPower HTS tape 750 meters. Minimum $I_c$ (77 K, s.f.) 381 A.

Which to choose? The THEVA tape has 34% greater $I_c$ than the SuperPower tape, but it has shorter piece lengths and requires splicing to get the required lengths of 250 m. We need 250 meters more of the chosen brand of tape to have enough for the HDMS coil.
Miniature dummy racetrack coil

- About 250 m of dummy tape: Steel with copper lamination or pure copper tape
- Solder
- About 125 m of dummy metal insulation: Could be the same as the dummy tape
- Two 12 mm copper plates of dimensions 300 mm × 160 mm
- Copper plates for the current leads
Full size dummy coil without HTS material

- About 1000 m of dummy tape: Steel with copper lamination
- Solder
- About 500 m of dummy insulation: Could be the same as the dummy tape
- Two 12 mm copper plates of dimensions 600 mm × 320 mm
- Copper plates for the current leads

- Magnet former: 60 mm aluminium 2050-T84 plate of dimensions 660 mm × 380 mm
- Cover plates: Two 15 mm aluminium 2050-T84 plates of dimensions 660 mm × 380 mm
Working practice coil (half a HDMS coil)

- About 500 m of HTS tape: SuperPower (already on storage)
- Solder
- About 250 m of steel or Hastelloy tape
- One 12 mm copper plate of dimensions 600 mm × 320 mm
- Copper plates for the current leads
- Magnet former: 30 mm aluminium 2050-T84 plate of dimensions 660 mm × 380 mm
- Cover plate: 15 mm aluminium 2050-T84 plate of dimensions 660 mm × 380 mm
HDMS coil

- About 1000 m of HTS tape: THEVA (we have about 750 m)
- Solder
- About 500 m of steel or Hastelloy tape
- Two 12 mm copper plates of dimensions 600 mm × 320 mm
- Copper plates for the current leads and connection between layers
- Magnet former: 60 mm aluminium 2050-T84 plate of dimensions 660 mm × 380 mm
- Cover plates: Two 15 mm aluminium 2050-T84 plates of dimensions 660 mm × 380 mm