

Cross section of the LHC main dipole, has a iron yoke radius of 285 mm.

After the iron yoke, you have a thin layer of superinsulation, then vacuum until the next (thin) layer of superinsulation. After that vacuum again until the wall that is noted as vacuum vessel. The vacuum vessel itself is made of carbon steel.

LHC Dimensions:

Vacuum vessel thickness: 70 mm (outer radius 525 mm)

1st vacuum layer: 60-70 mm (outer radius 455 mm)

2nd vacuum layer: ~100 mm (outer radius 390 mm)

Iron yoke outer radius: 285 mm

Modified dimensions for the beta beam dipole Design 3:

Vacuum vessel thickness: 70 mm (outer radius 480 mm)

1st vacuum layer: 60-70 mm (outer radius 410 mm)

2nd vacuum layer: ~100 mm (outer radius 345 mm)

Iron yoke outer radius: 240 mm