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Mon-Af-Po1.17-02 [54]: Cold Testing of ITER Toroidal Field Winding Packs

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The International Thermonuclear Experimental Reactor (ITER) is an international project aimed to build a fusion reactor using a magnetic confinement (Tokamak) for the high-energy plasma. This magnetic confinement is created by a set of various very large superconducting coils, mainly round poloidal field (PF) coils (upto 24 m wide) and D-shaped toroidal field (TF) coils (as high as 16m). The ITER machine utilises 18 TF coils in total, which are composed of a 100 tons winding pack (WP) enclosed in a 200 tons coil case (CC), each. F4E commissioned the insertion of the WP into the CC and subsequent closure welding to SIMIC. Before inserting the WP in the CC, the WP is cold tested at 80K. This cold testing process including all necessary equipment has been subcontracted from SIMIC to NOELL.

This document presents the design and manufacture of the cold testing equipment as well as status of execution and first results of the TF WP cold testing.

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