The ITER Project is in the critical phase of manufacturing the main components in accordance with project requirements. The selection of the main materials for the ITER Vacuum Vessel, Ports, in-vessel components such as divertor and blanket systems, have been completed with the finalization of their design. Procurement arrangements for the Vacuum Vessel and ports have been signed with the EU, KO, RF and IN DAs. Supply of divertor is shared between the EU, RF and JA DAs. Procurements of blanket system are part of the contributions of the EU, RF, CN and KO DAs. With the completion of the design, the selected materials have been critically verified for the compliance to functional and safety requirements. Manufacturing of these components is on-going in the IO-DAs.

The key issues for the selection and procurement of the materials are based on licensing/safety requirements, vacuum compatibility, magnetic requirements, main properties defined by selected codes/standards, functional performance requirements, technological requirements and cost.

ITER Vacuum Vessel is one of the main Protection Important Components of ITER nuclear facility INB-174 and also a Nuclear Pressure Equipment, in accordance with French regulations. The main materials are 316L(N)-IG and 316L (EU grade number 1.4404) austenitic steels, other materials are contributing to shielding (borated steels 304B4 and 304B7) and magnetic ripple reduction (ferritic steel 430). Ports are made of 304L (EU grade) steel. Bolting materials are steel XM-19, steel 660, steel 316L and alloy 625. Vacuum vessel gravity supports include steel 660, 316L(N)-IG, alloy 718, NiAl bronze, polyamide insulation. In total, several thousand tons of various materials have been produced for the Vacuum Vessel already. Some examples of procurement results and materials properties after fabrication processes will be presented.

R&D prototyping and testing of major elements of systems such as blanket and divertor are at an advanced stage. Blanket system includes various materials for structural and functional application: steels 316L(N)-IG, 316L (EU grade), Beryllium (US, RF and CN grades) as armour, CuCrZr as heat sink, alloy 718 for blanket support, steel 660, Al bronze, various types of antifriction and insulating coatings.

Divertor procurement is focused on prototype fabrication activities. List of materials includes 316L(N)-IG, XM-19, 316L (EU grade) austenitic steels, tungsten as an armour, CuCrZr as heat sink, and other materials such as steels 660, alloy 718, Al bronze etc. Characterization of tungsten for the first full-W divertor is on-going.