

Documentation
required to be presented by
DAs and Material Manufacturers
in accordance with Regulatory and Code
requirements
for the ITER Vacuum Vessel and Port components

Abstract

This document describes the requirements for documentation that shall be presented before starting of procurements of the materials for the ITER vacuum vessel and ports components.

	IDM Number:	ITER_D_2MT72B v 2.2	Date: 14.12. 2009
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1 Referenced documents

1. Arrête du 12 décembre 2005 relatif aux équipements sous pression nucléaires (ESPN), Order dated 12th December 2005 concerning nuclear pressure equipment (NPE Order 2005).
2. RCC-MR, Edition 2007.
3. French Decree No. 99-1046 dated 13th December 1999 concerning pressure equipment (Amended by Decree No. 2003-1249 dated 22nd December 2003 and by Decree No. 2003-1264 dated 23 December 2003) (ESP).
4. European Pressure Equipment Directive (PED) 97/23/EC adopted by the European Parliament and the European Council on 29 May 1997, see also PED Guides.
5. CLAP (Comité de Liaison des Appareils à Pression) files, AFNOR Normalisation and UNM (Union de Normalisation de la Mécanique), 09/11/2004.
6. ASN Guide Conformity Assessment of Nuclear Pressure Equipment - (Version of 2009-03-31) (ITER_D_2MHX79 v2).
7. EN 10204:2004 - Metallic product – Types of inspection documents.
8. AIB-Vinçotte International, letter to IO, ITER.VV.14, date: 04/11/2009.
9. AIB-Vinçotte International, letter to IO, ITER.VV.17, date: 20/11/2009.
10. AIB-Vinçotte International, letter to IO, ITER.VV.14A, date: 07/12/2009.

2 Introduction

In accordance with Regulatory requirements related to Procurement Arrangements for the ITER Vacuum Vessel and Ports:

ITER Vacuum Vessel (VV) is Nuclear Pressure Equipment, Category IV and Level N2, port components are Category III and IV and Level N3 equipment, as defined in ESPN [1].

ITER Vacuum Vessel and port components are being designed and will be manufactured in accordance with requirements of the ESPN [1].

The design and construction code is RCC-MR, Edition 2007 [2]. The VV and ports are classified as Class 2 box structure components and applicable design rules are provided in the RCC-MR RC 3800 chapter and complemented by Appendix 19.

ITER Vacuum Vessel and Ports equipment is Safety Important Class and correspondingly, Quality Class 1 equipment in accordance with ITER QA classification.

This document defines Regulatory requirements for Material Manufacturer and related documentation which shall be prepared before starting the procurement of material.

3 List of required documentation

In accordance with Regulatory (Chapter 1) and ITER QA requirements the documentation in the following Tables shall be available prior to start of material procurement. DAs shall collect/prepare these documentations (with assistance of Material Manufacturers) and submit to IO together with DA Quality Plan (ITER_D_22MFMW v3.0).

3.1 Austenitic steel grade 316L(N)-IG plates, forgings, bars

Main pressure bearing parts, parts permanently attached to main pressure bearing parts, pressure parts other than main pressure bearing, parts contributing to the pressure resistance and other parts.

Table 1.

No.	Certificate/Document	Who certify or prepare
1	Certificate: Quality Management System, e.g. ISO 9001:2000	Certified by Competent Body established as a legal entity within the European Community
2	Certificate: Quality Assurance System according to PED 97/23/EC Annex 1, paragraph 4.3. Scope of this certificate shall cover the following materials: <ul style="list-style-type: none"> - Austenitic stainless steel 316L(N)-IG plates, forgings and bars as defined in the ITER specifications and Section 2 of RCC-MR Edition 2007; - Austenitic stainless steel X2CrNiMo17-12-2 controlled nitrogen content plates, forgings and bars as defined in corresponding specifications of Section 2 of RCC-MR Edition 2007: <ul style="list-style-type: none"> - RM 3331: plates - RM 3321: forgings - RM 3324: bars See Note ** and Note ***	Certified by Competent Body* established as a legal entity within the European Community
3	Product or Part qualification report in accordance with RCC-MR	Prepared by Material Manufacturer
4	Shop qualification report in accordance with RCC-MR	Prepared by Material Manufacturer

Notes:

* List of possible Competent Bodies, who can perform the assessment of the Quality Assurance System in accordance with PED 97/23/EC and specific requirements of RCC-MR Edition 2007, is included in Attachment 1.

** Depending on Material Manufacturer capability the form of product could be only plates, or forgings or bars.

*** The reference document for quality - assurance that has been used shall be identified and shall be submitted.

3.2 Austenitic steels grades X5CrNi18-10 and X2CrNi18-9 plates

Material permanently attached to pressure bearing parts.

Table 2.

No.	Certificate/Document	Who certify or prepare
1	Certificate: Quality Management System, e.g. ISO 9001:2000	Certified by Competent Body established as a legal entity within the European Community
2	Certificate: Quality Assurance System according to PED 97/23/EC Annex 1, paragraph 4.3. Scope of this certificate shall cover plates made of the grades Grade X5CrNi18-10 (1.4301) and Grade X2CrNi18-9 (1.4307) in accordance with EN 10028-7 See Note *	Certified by Competent Body established as a legal entity within the European Community
3	Product or Part qualification report in accordance with RCC-MR	Prepared by Material Manufacturer
4	Shop qualification report in accordance with RCC-MR	Prepared by Material Manufacturer

Note:

* The reference document for quality - assurance that has been used shall be identified and shall be submitted.

3.3 Austenitic steel grade X2CrNiMo17-12-2 pipes

Main pressure bearing material.

Table 3.

No.	Certificate/Document*	Who certify or prepare
1	Certificate: Quality Management System, e.g. ISO 9001:2000	Certified by Competent Body established as a legal entity within the European Community
2	Certificate: Quality Assurance System according to PED 97/23/EC Annex 1, paragraph 4.3. Scope of this certificate shall cover pipes made of the grade X2CrNiMo17-12-2 (1.4404) in accordance with EN 10216-5 See Note * and Note**	Certified by Competent Body established as a legal entity within the European Community

Notes:

* Due to expected small amount of pipes, the supply can be made without Shop and Product Qualification reports, however, requirements of RM 0111.3 of RCC-MR Edition 2007, shall be fulfilled. The complementary measures required by RM 0111.3 shall be submitted to the ANB for approval prior to the procurement.

** The reference document for quality - assurance that has been used shall be identified and shall be submitted.

3.4 Borated steels 304B4, 306B7plates, ferritic steel 430 plates, steel XM-19 bars

Non-pressure retaining materials, non-permanently attached to pressure retaining parts.

Table 4.

No.	Certificate/Document	Who certify or prepare
1	Certificate: Quality Management System, e.g. ISO 9001:2000	Certified by Competent Body

4 Attachment – List of Competent Bodies

The proposed list is only indicative and includes several Competent Bodies, which preliminary agreed to certify Quality Assurance System of Material Manufacturer according to PED 97/23/EC Annex 1, paragraph 4.3 and include in scope austenitic stainless steel grades covered by RCC-MR Code Edition 2007 and grades 316L(N)-IG as defined in the ITER Specifications.

The other Competent Bodies can perform this activity also.

Competent Body	Contact person
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