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## Technical Specifications (In-Cash Procurement)

### **Technical specification for Framework contract .**

This documents is about the Technical specification for secondary supports for CCWS and TCWS .

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## 1 Purpose

The purpose of the present document is to set the technical requirements for the procurement of 1) Carbon Steel Beams, 2) Carbon Steel Plates, and 3) Stainless Steel Plates and similar items (which may also be called as “the steel materials” under this document) for the ITER Project.

## 2 Background

The ITER Project is constructing an experimental nuclear fusion reactor in south of France. The steel materials are needed in order to fabricate and assemble the steel structures to support the piping materials (which are called “the secondary piping supports”). The secondary piping supports are needed at this time at the buildings named Building 30, 34, 37,71, 74 Bush Bar Bridges, and Building 14 ( up to Building level L2) and TOKOMAK building, which are currently under the construction at the ITER project site in Saint Paul Lez Durance, France. The scope of work under this contract is limited to the supply of the steel materials, and the fabrication of those materials into the secondary pipe supports is out of the scope.

## 3 Scope of supply

The selected Contractor/Supplier shall supply the following steel materials along with necessary documents like Material test certificate, packing list, Delivery report etc. The detailed Bill of Materials (BOM) shall be specified and to be manage as separate document whenever applicable.

This document covers procurements of structural steels needed by PBS26/TCWS/CCWS activities to install secondary supports in various at multiple levels, covering all areas related to first plasma. These activities cover inside and outside cryostat installation. Also, this document covers procurements of structural steels needed by other PBSs in IO.

The IO will use the structural steels in order to fabricate the pipe support structures. For avoidance of doubt, please refer to the below table for clarification of the scopes.

#	Scope	Subject of this contract	Note
1	Supply and delivery of structural steels (secondary pipe support)	Yes	Subject of the present specification
2	Supply and delivery of U-bolts, Clamp Base etc. (primary pipe supports)	No	Out of scope. To be procured by IO by other contracts.
3	Fabrication of primary pipe support and secondary supports into the pipe support structure	No	Out of scope. To be arranged by IO by other contracts.

Table 1: Scope Matrix

Few material to be supplied to CCWS covered by this specification are SIC classified material (see classification [25]), quality class QC-1 (see classification [6])

## 4 Definitions

Contractor - The entity (i.e. company or consortium) in charge of supply and delivery of the structural steels described in the present specification.

IO - ITER organization

For a complete list of ITER abbreviations see: [ITER Abbreviations \(ITER\\_D\\_2MU6W5\)](#).

ASN	Autorité de sureté nucléaire
BOM	Bill of Material
CCWS	Component Cooling Water System
CONTRACTOR	Is the Company in charge of the procurement and the delivery at ITER IO site of the material described in the present specification
CWS	Cooling Water System
IO	International Organization
ITER	International Thermonuclear Experimental Reactor
MIP	Manufacturing and Inspection Plan
PIA	Protection Important Activity
PIC	Protection Important Component
QA	Quality Assurance
SIC	Safety Important class
Wt	Weight

## 5 References

- [1]. ITER Abbreviations – ITER Abbreviations (ITER\_D\_2MU6W5 v1.17)
- [2]. ITER Procurement Quality Requirements – ITER Procurement Quality Requirements (22MFG4 v5.1)
- [3]. EN 10034 (1993) Structural steel I and H section
- [4]. EN 10025 (2005) Hot-rolled products of structural steels;
- [5]. Load Specification for Cooling Water System (3YGYH7 v5.2)
- [6]. Quality Classification Determination (24VQES v5.2)
- [7]. ITER Seismic Nuclear Safety Approach (2DRVPE v1.6)
- [8]. ITER Vacuum Handbook (2EZ9UM v2.5)
- [9]. Requirements for Producing a Contractors Release Note (22F52F v5.0) .
- [10]. Procedure for management of Nonconformities (22F53X v9.1)
- [11]. Procedure for the management of Deviation Request (2LZJHB v8.1)
- [12]. Procedure for Reception of Components at the ITER Site (RXCTBZ v2.2)
- [13]. Procedure for Transportation of Components to ITER Site (RY5C6Q v3.1)
- [14]. BS EN 10029:2010 Hot-rolled steel plates 3 mm thick or above – Tolerances on dimensions and shape
- [15]. EN 10056-1(2017) Structural steel equal and unequal angle beams - dimensions
- [16]. EN 10056-2 (1994) Structural steel equal and unequal angle beams - Tolerances on shape and dimensions
- [17]. EN 10210 (2006) Hot finished structural hollow sections of non-alloy and fine grain steels

- [18]. EN 10279 (2000) Hot rolled steel channels - Tolerances on shape, dimensions and mass
- [19]. EN 10204 (2005) Metallic products - Types of inspection documents
- [20]. Provisions for Implementation of the Generic Safety Requirements by the External Interveners (SBSTBM v2.2)
- [21]. Requirements for Producing an Inspection Plan (22MDZD v3.7)
- [22]. Propagation of the Defined Requirements for Protection Important Components Through the Chain of External Interveners (BG2GYB v3.3)
- [23]. Chemical composition and impurity requirements for materials (REYV5V v2.3)
- [24]. List of ITER-INB Protections Important Activities (PSTTZL v2.2)
- [25]. Safety Important Functions and Components Classification Criteria and Methodology (347SF3 v1.8)
- [26]. Order dated 7 February 2012 relating to the general technical regulations applicable to INB - EN (7M2YKF v1.7)
- [27]. ITER Numbering System for Components and Parts (28QDBS v5.0)
- [28]. Template of Release Note (QVEKNQ v3.1)
- [29]. Overall Surveillance Plan of External Interveners Chain for Protection Important Components, Structures and Systems and Protection Important Activities (4EUQFL v7.4)
- [30]. EN 10088-2 (2014) Stainless steels. Technical delivery conditions for sheet/plate and strip of corrosion resisting steels for general purposes
- [31]. EN 10088-1 (2014) Stainless steels. List of stainless steels
- [32]. Surveillance Plan for PBS 26 - Cooling Water System (CAJTAL v3.1)
- [33]. ITER Policy on safety, security and Environment Protection Management (ITER\_D\_43UJN7)
- [34]. Quality Assurance for ITER Safety Codes (ITER\_D\_258LKL)
- [35]. Delivery Report Template (ITER\_D\_WZPYVZ v2.6 )
- [36]. Template-Equipment Storage & Preservation Requirements Form (ITER\_D\_WU9636)
- [37]. EN 10034 (1993) Structural steel I and H sections - Tolerances on shape, dimensions and mass
- [38]. EN 10365 (2017) Hot rolled steel channels, I and H section – Dimensions and masses
- [39]. Bill of Materials (ITER\_D\_5A8M9B)
- [40]. EN 10058:2018 Hot rolled flat steel bars and steel wide flats for general purposes.
- [41]. Memorandum TCWS PIC removal from raw material (ITER\_D\_464EDT)
- [42]. QP Template for suppliers and subcontractors (ITER\_D\_2MLX45 v1.1)
- [43]. Working Instruction for Manufacturing Readiness Review (ITER\_D\_44SZYP v5.0)
- [44]. Project Requirements (PR) (ITER\_D\_27ZRW8 v6.3)
- [45]. Quality assurance requirements for nuclear facility applications - ASME NQA-1-2012
- [46]. Working Instruction for the Delivery Readiness Review (DRR) (ITER\_D\_X3NEGB)
- [47]. Standardization in the Supply Chain (8HK3EP v1.0) (current)
- [48]. Order dated 7 February 2012 relating to the general technical regulations applicable to INB - EN ( ITER\_D\_7M2YKF v1.7).
- [49]. Procurement Requirements for Producing a Quality Plan (ITER\_D\_22MFMW v4.0)
- [50]. Package & Packing List Template (XBZLNG v2.2).
- [51]. Defined requirement for PBS 26 (M369M3 v2.1) (current) .
- [52]. Memorandum TCWS PIC removal from raw material (464EDT)

## 6 Estimated Duration

The duration of this framework contract is 5 years.

## 7.0 Technical Requirements

In accordance with all the requirements which are specified under the present specification and which may be clarified and/or modified (if needed) further under each Supply Order, the Contractor shall execute the following scopes;

- 1) Production of structural steels,
- 2) Packing and shipping of structural steels to the designated location(s), and
- 3) Providing all the required documentations

Regarding 1) above, in case that the Contractor is not steel producer (for example, steel distributor, steel fabricator, or any other business company), they shall manage their entire supply chain and ensure the full traceability of products so that the delivered steels shall fully satisfy the IO requirements.

Regarding 2) above, the designated location(s) will be either at ITER Site at Saint Paul Lez Durance France or any other place(s) to be instructed by the IO under the relevant Supply Order(s).

The IO will commit actual order(s) to the Contractor only through Supply Order(s), which will be issued under the conditions of the Framework Contract.

The Contractor shall supply different types of structural steels (such as plates, beams, sections, angles and so on).

The material shall be either carbon steel or stainless steel.

For any item, the Contractor must be able supply in accordance with ASTM Standard and EN Standard, while only one of them will be used and specified in BOM for each Supply Order.

For each Supply Order, the IO shall prepare the BOM which shall specify standard, grade, dimension, shape, quantity and any other information necessary for the procurement.

As a general principle, the Contractor must be able to supply the required products as defined by BOM, and any alternative products can only be proposed and accepted subject to the prior agreement from the IO in writing

### 7.1 Technical Requirements for Carbon Steel Structural Members

Please find here below the standards to be applied for the profiles covered by this technical specification:

**For CCWS items**

Beam type / standard	Applicable standard for general requirements and dimensions	Tolerance standard
SQUARE HOLLOW SECTION EN 10210 (2006)	10210-1 2006 10210-2 2006	EN 10210-2 (2006)
RECTANGULAR HOLLOW SECTION EN 10210 (2006)	10210-1 2006 10210-2 2006	EN 10210-2 (2006)
ANGLE BEAM EN 10056-1&2 (2017)	EN 10056-1: (2017)	EN 10056-2: 1994
HEB BEAM EN 10365 (2017)	EN 10365 (2017)	EN 10034 1993
Flat bars and wide flats EN 10058:2018	EN 10058:2018	EN 10058:2018
HEA BEAM EN 10365 (2017)	EN 10365 (2017)	EN 10034 1993
IPE BEAM EN 10365 (2017)	EN 10365 (2017)	EN 10034 1993
UPN CHANNEL EN 10365 (2017)	EN 10365 (2017)	EN 10279 2000

**For TCWS items :** Carbon steel beams RHS/SHS as per ASTM A500 Gr B , Carbon steel plates as per A36, Stainless steel beams, RHS/SHS as per ASTM A554, Stainless steel plates ASTM A/SA240, Wide flange beams/Channels/sections as per ASTM A992/A36/A/A992.

The use of other material other than in this TS is not allowed unless agreed by the IO.

**For TCWS items,** where applicable within this TS: Charpy V-notch impact testing at room temperature.

**For CCSW items,** the steel material shall follow [4] EN 10025 (2005) grade S355 J2 (minimum resilience 27 J at -20° C) or equivalent. If another material/grade/standard is used it shall be notified and agreed to ITER IO.

These carbon steel beams/angle shall be provided and delivered with length of 6 m to 12 m. (with tolerance -10% / +10%) and weld repair of the structural steel hollow sections and plates are prohibited.

The hollow sections shall be supplied with square cut ends and all burrs at the ends shall be removed and cleaned.

## 7.1 Technical Requirements for Carbon Steel Plates

The steel plates dimension and tolerances shall follow [14] EN 10029 (2010) and the steel material shall follow [4] EN 10025 (2004) grade S355 J2 (minimum resilience 27 J at -20 C) or equivalent.

## 7.2 Technical Requirements for Stainless Steel Plates

The stainless steel plates dimension and tolerances shall follow [30] EN 10088-2 (2014) and the steel material shall follow [31] EN 10088-1 (2014) 1.4307 (X2CrNi18-9) or equivalent.

# 8.0 Quality Assurance Requirements

## 8.1 Quality Management

The organisation conducting these activities should have an ITER approved QA Program applied to all work carried out as a result of any contract arising from this specification or an ISO 9001 accredited quality system.

The ITER QA Programme is based on IAEA Safety Standard GS-R-2 and on conventional QA principles and integrates the requirements of the French Order dated 7th February 2012 [26] on the quality of design, construction and operation of Licensed Nuclear Installations. For this purpose, the Supplier shall ensure that any subcontractors carrying out work placed under the prime contract are in compliance with the QA requirements under the relevant QA classifications.

The general requirements are detailed in ITER Integrated Safety, Quality and Security Policy [33] and ITER Procurement Quality Requirements [2] whilst the specific requirements for the supervision of the supply chain for Protection Important Components, Structures, Systems and Activities is detailed in [29].

## 8.2 Quality Plan

Prior to commencement of the work, a Quality Plan( if applicable) must be submitted for IO approval giving evidence of the above and describing the organisation for this task; the qualification and experience of the named individuals involved including who will act as Independent Reviewer(s) and any anticipated sub-contractors. Curricula Vitae shall be provided.

The Quality Plan shall demonstrate how the work will be controlled and shall include a Test Plan Procedure. QP shall comply with the procurement requirements of producing a quality plan [49]

## 8.3 Protection Important Components and Activities

For Protection Important Components, structures and systems and Protection Important Activities, a specific management system must be implemented by the Supplier and any subcontractor working on protective important activities, on the basis of activities defined and executed by the Supplier and Subcontractor.

This system could be included in the Quality Plan. This management system will include the evaluation of Non-Conformance Reports whether major or minor [10].

The use of computer software to perform a safety based task or activity such as analysis and/or modelling shall be reviewed and approved by the IO prior to its use, in accordance with [34].

## 8.4 Deviations and Non-Conformances

A deviation is defined in the Order [26] as a non-compliance with a defined requirement or non-compliance with a requirement set by the licensee's integrated management system that could affect the provisions of the Environment Code. Deviations must follow the ITER procedure for management of deviation request [11], while non-conformances must follow the ITER procedure for management on nonconformities [10].

## 8.5 Additional Surveillance Requirements

ITER Organisation is the Nuclear Operator and has the ultimate responsibility for the application of the INB Order [26] within the IO and in its chain of suppliers. IO must undertake additional surveillance for those components which are classified as Protection Important Components. The Supplier shall therefore grant access to the IO and ASN representatives to its facilities and records and those of its subcontractors for the purposes of surveillance.

## 8.6 Documentation

All safety related documentation developed as a result of this work shall be provided to the IO. Any other documentation developed as a result of this work shall be retained by the Supplier for a minimum of 5 years and then it may be discarded at the direction of the IO.

# 9 Safety requirements

ITER is a nuclear facility (an "INB", for Installation nucléaire de base, "Basic nuclear installation" in French regulation) identified in France by the number "INB no. 174" [26]. The supplier must comply with the all requirements expressed in Reference [22]. For each requirement, the external intervener must explain in its quality system the dispositions taken to implement the requirements stipulated in Reference [22].

The chemical composition and impurity requirements for materials and components must comply with the Reference [23].

In particular, for supports in carbon steel (anchor plates and beams) which are installed in building 11 port cells, where contact dose rates and total doses are important, the following limits shall be established: Cobalt (Co) – max 0.010 wt. %

For supports in carbon steel (anchor plates and beams) which are installed in building 11 except port cell, Area 37 and B14, where contact dose rates and total doses are not important, their No cobalt and Nickel impurities limitation to be established but to be measured for information purpose (if asked by IO). Chemical analysis for above impurities for all the materials and components are required (chemical analysis in addition to material certificate per heat number).

Material test certificate shall be based on applicable standard in accordance with technical specification for the chemical as well as mechanical properties.

As a consequence Cobalt rate measurement is required for all the beams and plates to be installed in B11, B14 as well as auxiliary building. Regarding stainless steel plates which are installed in building 11 port cells, following impurities requirements shall be followed:

- Cobalt (Co) – max 0.050 wt. %
- Niobium (Nb) – max 0.10 wt. %
- Tantalum (Ta) – max 0.01 wt. %

Regarding stainless steel plates which are installed in building 11 except port cells and inside B11 galleries, B14 and Area 37 following impurities requirements shall be followed:

- Cobalt (Co) – max 0.20 wt. %
- Niobium (Nb) – max 0.10 wt. %
- Tantalum (Ta) – max 0.05 wt. %

Chemical analysis for above impurities for all the materials and components are required (1 chemical analysis in addition to material certificate per heat number).

However in case of small quantity of materials, in accordance with chapter 7.2.6 of Reference [23] and as stainless steel sheets are thin (like 2 mm) and small in dimension), In this case there is a process to deviate with deviation request and impurities can be amended if it leads to incompatibility with procurement schedule and provided that chemical compositions and impurities (Co, Nb, Ta) are measured and assessed. Any deviation on the requirement shall be notify and agreed with ITER IO in advance.

For such cases chemical composition and impurities content shall be measured and their quantity and influence on radiation shall be assessed by issuing Deviation request [R11] for the acceptance of materials in accordance with chapter 7.2.6 of reference [23]. Activities related to PIC and especially the ones detailed in MIP (if applicable in case of CCWS only) are considered as PIA and consequently document [24] applies.

The classification corresponding to the graduated approach of PIC is specified in Reference [25].

For each Supply Order, the IO will specify one of the following categories, which shall be applied in addition to the normal requirements of chemical compositions specified by the relevant standard, where needed.

Magnetic materials with a relative permeability that is greater than 1.03 shall not be used within the cryostat boundary without formal project approval [44].  
(Applicable to TCWS only )

Category	Carbon Steel	Stainless Steel
Category 1 In Cryostat	Not applicable.	Cobalt (Co) – max 0.05 wt. % Niobium (Nb) – max 0.1 wt. %

Category	Carbon Steel	Stainless Steel
(with very high dose areas)	(There will be no carbon steel to be used for In-Cryostat.)	Tantalum (Ta) - max 0.01 wt. %
Category 2 Outside Cryostat (with high dose areas)	Co = max 0.010 wt. % Ni = max 0.050 wt. %	Cobalt (Co) - max 0.20 wt. % Niobium (Nb) - max 0.10 wt. % Tantalum (Ta) - max 0.05 wt. %
Category 3 As per standards	As per Standards (i.e. EN or ASTM to be defined in BOQ) Not applicable to TCWS, PBS26	As per Standards (i.e. EN or ASTM to be defined in BOQ) Not applicable to TCWS, PBS26

## 10 Contract Documentation and Deliverables

At the start of the Framework Contract, the Contractor shall submit the below deliverable to the IO for her approval in order to ensure and demonstrate that they have put in place the required quality management system fully fit to the execution of the Framework Contract and subsequent Supply Order(s).

No	Deliverable	Description	Due dates
D0	Contractor's quality plan	Contractor shall prepare IO specific quality plan [42] which complies with the procurement requirements of producing a quality plan [49]	2 weeks after of framework contract signature

### 10.1 Requirements for the related documentations

The Contractor must submit the following documents to be approved by the ITER Organization (IO).

#### a) Document needed during the progression of Contract

No	Document Name	Descriptions
#0	KOM	T0+5 Working days
#1	Contractor's Bill of Materials (BOM)	As the start of the Contract, the Contractor shall create their own Bill of Materials (including Grade, Dimension and Quantities) in order to confirm the quantity to be delivered.
#2	Contractor Quality Plan(QP)	2 week after Contract Signature.
#3	Contractor's Delivery Plan	For each item indicated in Bill of Material, the Contractor will specify the delivery date, the transportation mean, and lifting gear. It shall also specify the list and number of packages prior to delivery. This document can be merged with the Contractor's Bill of Materials as one document.

#4	Manufacturing and Inspection Plan (MIP) if applicable	Manufacturing and Inspection Plan (MIP) mutually agreed between contractor and IO shall be provided according to [21] in case that new roll production is planned for this order. Completed MIP with evidence is also required for items supplied. This is <b>not applicable for the inventory/stock supply</b> , provided that in that case all the traceability must be secured in accordance with this Technical Specifications.
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Table 3: List of Documents at the start of the project

#### b) Documents needed before the Shipment from the Contractor's premises

No	Document Name	Descriptions
#5	Material certificate 3.1 or 3.2	As per standard EN 10204 [19] for beams and plates including Heat number and tests reports (in particular chemical analysis of material and mechanical tests). Magnetic materials with a relative permeability that is greater than 1.03 shall not be used within the cryostat boundary without formal project approval[44]
#6	Material Chemical Composition and Impurity analysis	As per chemical composition and impurity requirements [23] To be submitted for each beam profile / plate type / sheet type under same heat number for material to be installed in B74, B11, B14 as well as auxiliary buildings.
#7	Packing List	In this document the Contractor will specify the content of each shipment planned. 1 week before shipment
#8	Declaration of Conformity	The Contractor shall enclose to the packing list a declaration of conformity specifying that items that have been sent are conform with the order signed by IO
#9	Release Note	The Contractor shall issue the Release Note in accordance with [9] and [28].
#10	Delivery Report	1 week before shipment

Table 4: List of Documents prior to the shipment

## 10.2 Responsibilities

The Contractor will be in charge of the supply and delivery of the required good to the destination. The unloading of materials from the trucks will be at charge of IO.

The IO shall confirm the final destination (the address, post code, contact person) before the shipment. The delivery address is Saint Paul Lez Durance, France (ITER site).

The delivery terms shall be DAP in accordance with Incoterms 2010.

## 10.3 List of deliverables and due dates

The list of deliverables and the due date is provided in Table 4 and Table 5 respectively.

Deliverable No	Descriptions	Related Section in this Technical Specifications	Due dates
Deliverable 1(D1)	Document needed at the start of the Contract	Section 10.1 (a)	One week after the contract signature
Deliverable 2(D2)	Document needed before the Shipment from the Contractor's premises	Section 10.1 (b) Section 13	One week prior to the shipment
Deliverable 3(D3)	Delivery of the required steel materials at the destination as DAP (delivered at place) in accordance with the Incoterms 2010	Section 10.2 Section 6	T0 + 12 Weeks, To is contract signature date

Table 5: Deliverable and Due Dates

## 11 Acceptance Criteria

The IO will perform proper inspections after the delivery of this material at ITER IO site for checking:

- the delivered quantities according to the packing list;
- availability of the material certificate 3.1 for plates and beams;
- the specification requirements listed in section 8 and 9 and 12.

At the end of the inspection IO will sign the handover documentation.

## 12 Specific requirements and conditions

The Contractor will fulfil the following requirements (for items applicable to TCWS only)

1. Minimum length of beam profiles to be negotiated during contract setup, but to be no less than 3 meters.
2. Charpy V-notch (CVN) impact testing of the steel product at room temperature.
3. Declaration of conformity to be signed by the Contractor and enclosed with packing delivery report.

The Contractor will fulfil the following requirements (for all items)

1. The steels profiles will have a normally shall be of length 6.0 to 12.0 meter (-10% / +10%).
2. The dimensions of each component shall comply with this technical specification;
3. Heat number shall be engraved on each item in order to have the full traceability with material certificate
4. Declaration of Conformity shall be signed by the Contractor and enclosed with the packing delivery;
5. In addition to the packing list description each package should be tagged with the appropriate reference. Reference details will be given later by IO.
6. The requirements given by the procedure for the reception of items [12] and for the transportation of items [13] to ITER site should be followed.
7. The supplier shall design and supply appropriate packaging, adequate to prevent damage during shipping lifting and handling operations.

8. Items shall be delivered clean (no accumulated metal shavings or major deposits of rust allowed) and without any major damage.

## 13 Delivery Requirements

### 13.1 Labelling and Traceability

All components and the main subcomponents shall be clearly marked/painted in a permanent way and in a visible place with the IO official numbering system according to the document “ITER Numbering System for Components and Parts” [27].

Each hollow section, angles and plate shall be marked/painted/etched in a permanent way with heat number/billet/Ingot number in order to have full traceability with corresponding material certificate and to maintain proper identification during shipping, storage and delivery at IO site.

For marking on stainless steel material like SS Plate, Marking fluid shall be compatible with stainless steel and shall not contain any harmful elements like halogen, sulphur or any other chemicals which can cause corrosion or create a potential hazard for health. Halogen and sulphur content in marking fluids shall be less than 200 ppm. If water based marking, such as paint or ink is used, it shall follow the minimum requirements of chloride, fluoride, sulphide, silica and total suspended solids per Table 304.1 of ASME NQA-1-2012 [11].( Shown below)

pH at 25°C (77°F)	6.5 to 8.5
Chloride	Less than 250 ppm
Fluoride	Less than 2 ppm
Sulfate	Less than 250 ppm
Total dissolved solids	Less than 500 ppm

The markings shall be made to the best location(s) of materials so that they can be accessible and readable to the IO’s on-site inspectors even if the structural steels are piled during storage for example. If the markings are expected to be hidden and unreachable when they are piled or stored, prior to the shipment, the Contractor shall make additional markings on other location(s) of the materials. Evidence shall be provided (i.e. pictures or inspection reports) to the IO that the markings and labelling requirements are fully respected prior to sending the goods. The steel materials without identification shall not be supplied to the IO.

### 13.2 Packing and Handling

The Contractor shall take the suitable precaution and implement the necessary packing in order to avoid any damage to the goods during the handling and transportation.

### 13.3 Shipment, Transportation and Delivery to the ITER Site

The components shall be delivered to IO site as DAP Cadarache. Before the shipment, a Release Note shall be prepared in accordance with [28] and approved by the IO. The Release Note together with the delivery report [35], the packing list [50] reflecting the content of the release note [28] and the equipment storage and preservation requirements form [36] shall be submitted to [logistic.data@iter.org](mailto:logistic.data@iter.org) at least 15 working days prior to the planned shipment date.

Upon receipt of the package, the IO shall open the package and make a visual inspection of its content to check:

- The integrity of the package, including identifying visible damage;
- The number and type of components contained in the shipment;
- The enclosed documentation;
- The integrity of the components.

In the case of anomalies the IO shall make any additional relevant remark on the inspection. A decision on acceptance of the delivery of the components will be made by the IO. If the components are in an acceptable condition, the IO will sign the Delivery Report. The signature of the Delivery Reports is an IO Hold Point. The original of the Delivery Report shall be kept by the IO and a copy of it shall be kept by the Supplier.