

Technical Specifications (In-Cash Procurement)

Technical Specifications for the Design and Construction of B5.3 storage building

This document provides the Technical Specifications for the Design and Construction of B5.3 storage building

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1 Purpose

1.1 Background

ITER is a joint international research and development project aiming to demonstrate the scientific and technological feasibility of fusion power for peaceful purposes. The seven members of the ITER Organization are: The European Union (represented by EURATOM), Japan, the People's Republic of China, India, the Republic of Korea, the Russian Federation and the USA. Further information is available on the ITER website: <http://www.iter.org>. The ITER Organization is located in Saint Paul Lez Durance (13115) – France.

To address new need of storage, a contract is to be put in place with a qualified Contractor in order to construct a shelter on the ITER Site at short notice. The aim of this shelter is to house TB21 components in storage.

1.2 Purpose

The purpose of this Technical Specification is:

- To provide the technical requirements for the supply and installation of the shelter to be erected at the ITER Site;
- To provide the Contractor background information that is necessary to commence, carry out and complete the projects on the ITER Site, e.g. the ITER Site conditions;
- To specify applicable norms and regulations that the Contractor shall have to respect in order to meet the project performance requirements of the ITER Organization.

2 Scope

The scope of this contract is to design, supply, install a covered shelter named B5.3 to be constructed on the zone 5, lot 3 of the ITER site. The shelter shall be designed to be usable for at least 5 years.

3 Time for completion

The exact Time for Completion of the Works is specified in the Contract.

Below, the tentative schedule expected:

- T0 (March),
- T0+2 weeks: design validated,
- T0+8 weeks (May): shelter construction,
- T0+12weeks (June): end of the works

4 Acronyms and Definitions

The following acronyms may be found in this document:

PPSPS:	Individual Health Protection and Safety Plan (from French : Plan Particular de Sécurité et de Protection de la Santé)
PRE:	Environmental Requirements
PTW:	Permit to Work
BBSG	Type of Asphalt
NC	Non-Conformance
NF DTU	French Norm – French Building Code
DN	French: <i>Diamètre nominal (intérieur)</i> / Nominal diameter (always interior)
PW	Potable Water
RW	Raw Water
TPC	Tube de protection des cables, / English: duct to protect cable,
RFI	Request for Information
PIC	Protection Important Class
PIA	Protection Important Activity
EIC	Environmental Important Component
Site	Places provided by the ITER Organization where the Works are to be executed, and any other places specified in the contract as forming part of the Site
LOTO	Lockout / Tag out permit
PF/EP	Permis de fouille / Excavation permit
Works	The work and design to be performed by the Contractor including temporary work and any variation
GNT	Grave non traitée/ Non treated gravelled
PF2	Bearing capacity of a platform
ARx	Quality of the platform following earthwork guide
Qx	Compaction of a Platform

5 Reference documents

- [1] General Management Specification for Service and Supply (GM3S) (ITER_D_82MXQK)
- [2] Chemical product management procedure, (ITER_D_W6EREY)
- [3] CAD instructions for companies, (ITER_D_9PNNM4)
- [4] Permit to Work Procedure, (ITER_D_UBET39)
- [5] Access procedure, (ITER_D_6Z6SN9)
- [6] Internal Regulations, (ITER_D_27WDZW)
- [7] PGCSPS Volume 1 – Health and Safety General Coordination Plan for the construction of ITER Project,(ITER_D_T6V4RP)
- [8] Alert procedure, (ITER_D_7LB8NY)
- [9] Environmental Management Plan, (ITER_D_97W4PN)
- [10] Environmental requirements, (ITER_D_97WRFP)
- [11] COORDINATION DRAWING – Temporary Networks Approximate Layout
- [12] In-Cash Procurement Technical and Management Documentation Exchange and Storage Procedure, (ITER_D_G8UMB3)
- [13] ITER Policy on Safety, Security and Environment Protection Management, ref. (ITER_D_43UJN7)
- [14] Housekeeping instruction, (ITER_D_XJKR3R)
- [15] ICPE pre-screening memorandum, (ITER_D_XJ8K6C)
- [16] Environmental Respect Plan, English template, (ITER_D_9FUP5C)
- [17] Daughter PTW procedure for IO Areas under CNST/SIM coordination (ITER_D_2BW3ZV)
- [18] Lifting Instruction (ITER_D_YJ9MBD)
- [19] Work at Height Instruction (ITER_D_Y5X8R7)
- [20] ITER Procurement Quality Requirements (ITER_D_22MFG4)
- [21] Procedure for management of Nonconformity (ITER_D_22F53X)
- [22] Procedure for the management of Deviation request (ITER_D_2LZJHB)
- [23] Quality Classification Determination (ITER_D_24VQES)
- [24] Requirements for Producing Quality Plan (ITER_D_22MFMW)

6 Work Description

6.1 Location

The working area is located on the East side of the ITER site on the zone 5, lot 3.

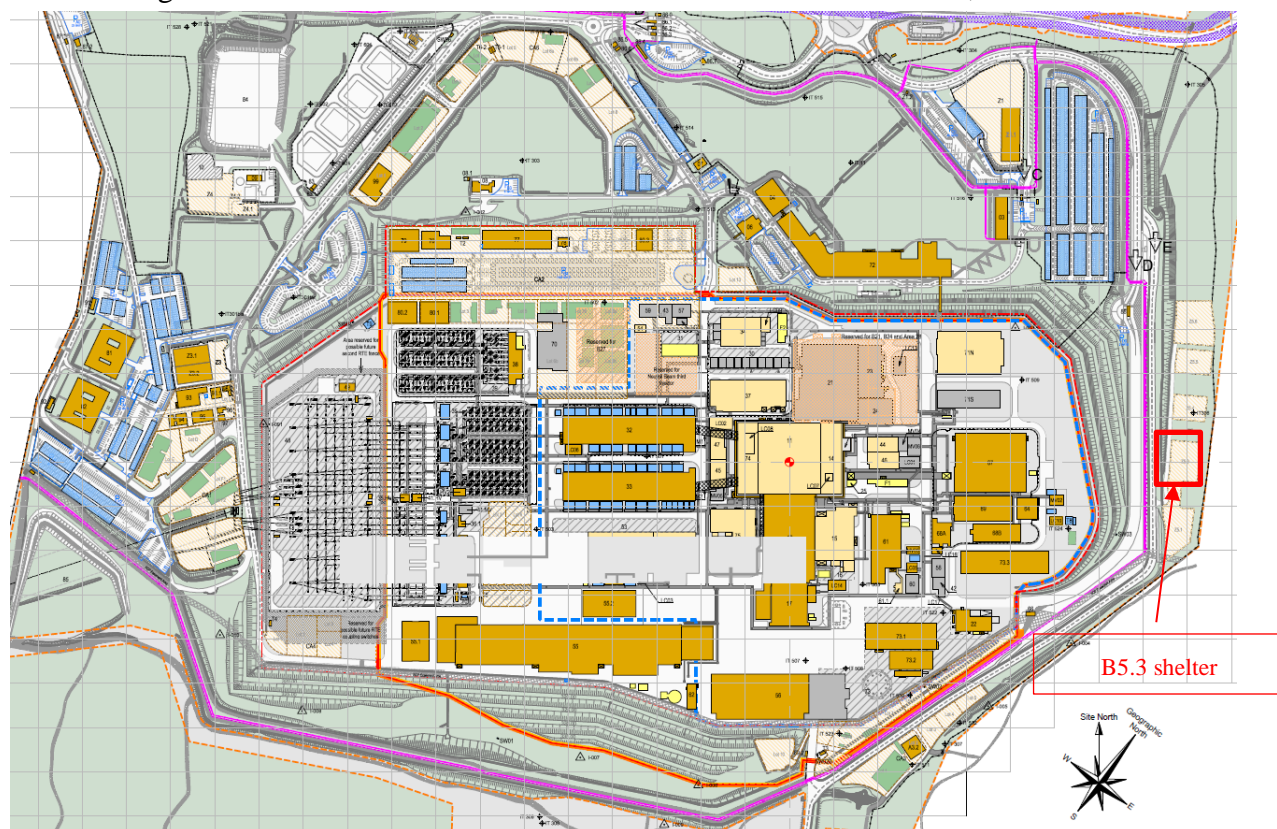


Figure 1 – Location of the works

6.2 Introduction

The Contractor shall install a shelter which shall meet the following minimum requirements:

- Weather tight roof and sides to protect the ITER components in storage against the main climatic risk;
- Compliant with the relevant safety and health regulations applicable in France and Europe;
- The building shall be designed for life of 5 years and to withstand the local climatic conditions e.g. snow and wind; and, according to the Eurocodes 0, 1, 3 and 8.

The Contractor shall take into account that the shelter need to be constructed at short notice (less than 3 months). The warehouse dimension shall be: 25m wide, 40m long and 6m high (free clearance).

The Contractor shall design and built the appropriate direct anchoring solutions for the storage shelter – anchoring piles, according to the ground conditions, in this case: non reinforced concrete slab (laydown area: road type). Appropriate sealing shall be installed between the walls bottom and the ground (asphalt) in order to avoid any water ingress.

The Contractor is fully responsible for the design, manufacturing, delivery, installation, commissioning and dismantling of the shelter, including but not limited to:

- Any necessary investigation of ground conditions;
- Assessment of the suitability of access to the location of the storage facility to be constructed;
- Any administrative formality to enter and work at the ITER Site as described in the reference documents;
- The supply of all shelter components and all necessary tools and equipment for the installation and commissioning.

6.3 Size of the building

The following size of shelter is expected to be constructed at the ITER Site:

Shelter	B5.3
Minimum usable height (m)	6m
Width usable (m)	25m
Length usable (m)	40 m long
Surface	1,000m ² – usable surface

The warehouses shall have free spans, i.e. without intermediate columns inside the building.

The main structure of the building shall be incombustible, fire class A1 and protected against rust .

6.4 Roof

To improve the thermal insulation and avoid condensation, a passive double-roof structure must be used. If the Contractor chooses a fabric roof solution, then the following minimum specific requirements must be met:

- The external skin of the roof shall be made of PVC coated 100% anti-UV polyester fabric with the unit weight of minimum 650g/m², and the flame retardant should be M2 French standard;
- The internal skin of the roof shall be made of PVC coated 100% polyester fabric with the unit weight of minimum 650g/m², and the flame retardant should be M2 French standard;
- The roof complex shall be translucent to let the natural light pass through.

6.5 Shelter rain gutter

The warehouse is to be equipped with rain gutters in aluminium with downpipes on the two long lateral sides to effectively evacuate the rain water from the warehouse roof. The dimension of the gutters should be designed taking into account the local weather conditions.

To evacuate the rainwater of the long west lateral side, the downpipes on the lateral sides will be collected by a main pipe and directed to the north end side of the storage facility. The aim is to avoid the releasing of rain water on the west façade.

For the east side of the shelter, there is no need of main collector, the downpipes will go independently till the platform level and an elbow will direct the water toward the shelter.

6.6 Cladding

The walls of the shelter shall be closed with polyurethane foam sandwich panel of minimum 40mm without CFC and the flame retardant should be M1 French standard. The panels shall be Pre-lacquered outside surface and the colour shall be chosen at later stage by the IO. Proper finishings shall be done at each singular points as corner, panels junctions...

The material chosen to close the wall shall be sufficiently resistant to withstand the climatic conditions of the ITER site.

The contractor shall propose a robust waterproofing system at the interface between the walls and the platform. In any case, the waterproofing system shall be inserted in the platform structure, and, not only laid on the surface.

The contractor shall propose an option in their offer with rockwool sandwich panel of 40mm and a variant with a thickness of 80mm.

6.7 Doors

The warehouse shall be equipped with the different door types as specified below.

6.7.1 Pedestrian door (emergency exit)

The warehouse shall be equipped with insulated doors to allow the ingress and exit of the pedestrians. The quantity and location of the pedestrian doors (emergency exits) shall be designed by the Contractor to be compliant with applicable regulations during the design phase.

The doors shall meet the requirements listed below:

- A single door leaf, shall be provided with these dimensions: 0.9m usable wide and at least 2m usable high – same colour than the cladding;
- Anti-panic push bar shall be equipped inside, with a door handle and a key hole for European cylinder dimensions 30/10 outside (locks to be provided by the IO);
- Thermal insulation shall be U-value $< 2.0 \text{ W/m}^2\text{K}$;
- The European fire classification shall be at least EI 2 with fire resistance during 30 minutes;
- Fixing devices shall be in steel and base plates in galvanised steel;
- An observation oculus window shall be on the upper side of the door;
- Doors shall be equipped with a strip seal or other element to prevent the ingress of water. In any case, the system must avoid tripping hazard or provide appropriate warning-safety signage.
- A PVC Photoluminescent evacuation panel unit shall be installed above each door to mark the pedestrian exit (conform to standards NF X 08-050-1 and NF X 08-050-2);

6.7.2 Manual sliding large door

On its south west side, the warehouse is to be equipped with a manual sliding large door providing an access for vehicles delivering components.

The door shall meet the following requirements listed below:

- The dimensions shall be: 4m wide and 4.5 m high free clearance;
- The full structure shall be protected against rust, and, the fixing devices shall be in steel and base plates in galvanised steel. The structure shall be mounted inside the building.
- Double metallic sliding leafs – same colour than the cladding;
- The leafs shall be equipped with internal and external handles to operate the door. A lockable system compatible with a padlock shall be installed (padlock will be provided by the IO).
- Doors shall properly position in front the grating gutter (installed by another contractor – out of the scope) to prevent the ingress of water;
- No floor rail type shall be acceptable, it shall be only a top guide rail;

6.7.3 Autonomous External lighting

Above each door (pedestrian and sliding), on the façade with appropriate robust fixation, the contractor shall install an autonomous solar external light projector with movement sensor detection and twilight sensor respecting the below specification:

- CE marked, Ip65 minimum and LED type,
- LED Colour shall be of natural tone: 4000,
- Power: 40W minimum, 4800Lumens minimum,
- LED lifetime shall be minimum 50,000 hours.

6.8 Anchoring of the Building

The contractor is responsible to design and built the anchoring system for the shelter.

The pavement structure is composed of, from the top to the bottom:

- 6cm of BBSG – asphalt traffic class T5,
- 30cm of GNT subgrade with a minimal characteristics: PF2qs (>80MPa), q3, AR2 – laid on a geotextile 200g/m2 minimum,
- General backfilling from the site, type C1B5, with a minimal characteristics: PF2 (>50MPa), q3, AR1.
- Natural soil,

Upon request, IO will be able to provide to the contractor the results of test performed on the backfilling layers.

6.12 Fire protection

The Contractor shall define the type, number and location of the fire extinguishers according to APSAD R4 regulations. Provision and installation of the fire extinguishers shall be the scope of the Contractor.

The signalization panel of each fire extinguisher shall be fluorescent (Photoluminescent).

All fire extinguishers shall be equipped with the identification plates providing the key details (unique ID number, type, size and date of fabrication as a minimum).

7 Site constrains

7.1 Site data

7.1.1 *Geotechnical data*

Refer to the chapter 6.8 above.

7.1.2 *Existing buried networks*

There is no existing buried networks in the area of the works as shown on reference document [11].

7.1.3 *Necessary information*

The Contractor shall be deemed to have obtained all necessary information as to risks, contingencies and other circumstances which may influence or affect the works. To the same extent, the Contractor shall be deemed to have inspected and examined the site, its surroundings, the above data and other available information, and to have been satisfied as to all relevant matters including (without limitation):

- The form and nature of the Site, including sub-surface conditions;
- The hydrological and climatic conditions;
- The extent and nature of the work and goods necessary for the execution and completion of the Works and the remedying of any defects;
- The laws, procedures and labour practices in France.

7.1.4 *Forest and protected trees*

The Works are located in the vicinity of a forest. Smoking is prohibited in the whole worksite area. Any soil pollution shall be avoided with adequate measures.

During dry periods, the Contractor shall implement measures to limit the spreading of dust as well as reduce fire risk.

The area is subject to the Prefectural Order regarding access to the forest. Therefore, the Works shall respect the access conditions associated to the daily fire risk level communicated during the summer months by the Prefecture, every evening for the next day:

- Green: works allowed with caution during all the day,
- Yellow: works allowed with particular caution from 5.30am to 1.00pm,
- Orange: access allowed but works forbidden,
- Red: access forbidden – risk too high

The Contractor shall take into account this risk and adapt its working hours and/or methodology accordingly, if necessary.

7.2 Electricity provision

As there is no electrical network in the working area, if needed, the Contractor will be required to provide its own power generator. In the case the IO can provide an electrical connection to a nearby transformer, the temporary electrical worksite installation shall be foreseen in the scope of the Contractor.

7.3 Installation

The Contractor is fully responsible for the design, manufacturing, delivery, installation and commissioning of the warehouse, including but not limited to:

- Any necessary investigation of ground conditions (Geographical survey for the altimetry and network measures, Altimetry correction of the warehouse depending on the slope, tensile stretch test is asked at minimum);
- Assessment of the suitability of access to the location of the warehouse to be constructed and preparation of the works area (mobile worksite fence and mobile traffic light to ensure the safety and security of the worksite are in the scope of the Contractor);
- Any administrative formality to enter and work on the ITER Site,
- The supply of all the warehouse components and all necessary tools and equipment for the installation and taking over.
- Any container or temporary office to allow the workers to gather, drink and study the layouts of the structure, as well as chemical toilets. Potable water provision is also in the scope of the Contractor. The IO will provide access to sanitary block with shower and toilets but no lockers and the access to the worksite cantine which is at 3 minutes by car from the warehouse worksite.

7.4 Interfaces

The worksite is located in a storage area called zone 5 composed of 6 lots, and, it is surrounded by different areas with some constraints:

- The South, North and East side of area is directly facing the forest which is an area difficult or impossible to access,
- The West side is the common delivery road for the storage lots of the zone 5. Even if it shall be reduced to the minimum, the impact there can be possible and will be discussed in coordination meeting.

Nonetheless, due to the constraints listed above, the Contractor shall forecast as much as possible to erect the storage area within the storage facility footprint with a methodology minimizing the impacts on surrounding areas. The means to erect the structure shall be adapted to the narrow environment listed below, all these points shall be considered in the proposal of the Contractor:

- North side: a strip of 3m of gravelled area should be considered between the forest area and the façade with a difficult access from outside,
- West side: the gravelled road, lower than the platform of the building (from 0 to -1.2m), should be considered for the building erection as the strip between the building façade and the edge of the platform will be narrower than 2m,
- East side: a strip of 4m of gravelled area should be considered between the forest area and the façade with a difficult access from outside,
- South side: a strip of 3m of gravelled area should be considered between the forest area and the façade with a difficult access from outside,

During the works, the main storage/working area shall be on the south side of the future warehouse – refer to the figure 2 below.

Any impact on a surrounding area shall be addressed as soon as possible and shall be validated by the Health & Safety Coordinator and the coordinator responsible of the area.

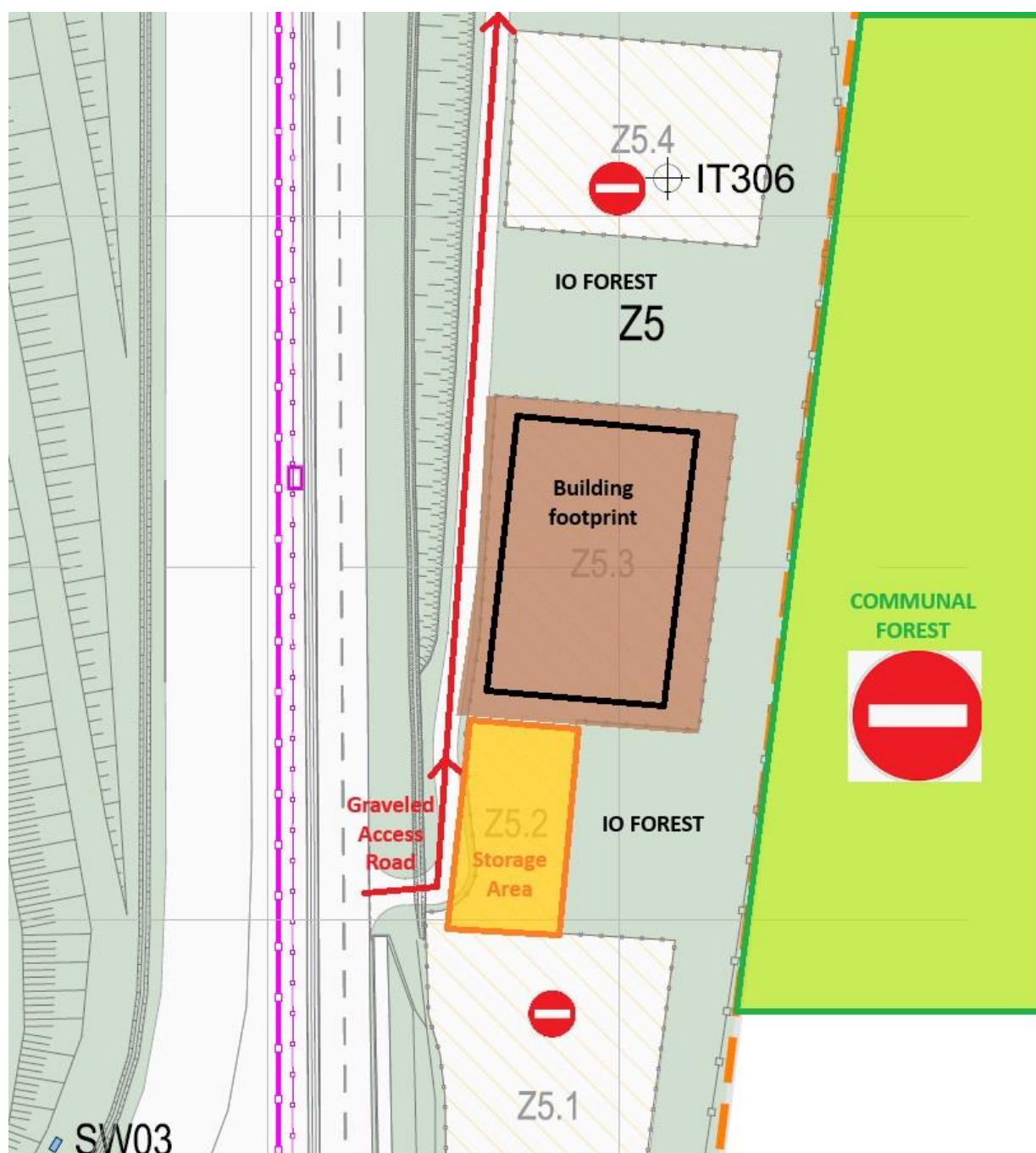


Figure 2 – Environment of the works

8 Specific General conditions and requirements

8.1 Applicable codes and standards

The Contractor shall comply with French design and construction standards or with European design and construction standards if such European standards exist and they are broadly equivalent to the French standards.

Unified Technical Documents (DTUs) and NF DTU specifications and calculation rules shall be considered as industry practice and are applicable to the Contract.

In case the Contractor's manufacturing process is not compliant with the DTU specifications, it shall provide a European (or French) technical assessment from EOTA (or CSTB).

The Contractor shall comply with the machinery directive 2006/42/CE. The equipment, when required, shall be CE marked.

For all products and materials subject to quality standards, the Contractor must only use products and materials that comply with said standards and be able to present evidence of compliance on ITER Organization request.

8.2 Coordination of the works

Coordination meetings shall be held at the ITER Site on a weekly basis, at which the Contractor, the ITER Organization and the Health & Safety Coordinator shall be represented.

At the meeting, the Contractor shall present a report showing its current and foreseen activities (with 2-week look-ahead) versus the current Schedule of Works. The Contractor shall record the minutes of the meeting and distribute them to all Parties who attended the meeting within 2 working days following the meeting.

8.3 Site facilities, cleaning and maintenance of the site

The Contractor shall provide its own temporary site facilities in conformity with the decree of January 8th, 1965, modified by the decree n°95608 of May 6th, 1995.

The Contractor shall secure the Site with a perimeter fence.

The Contractor shall establish a point of contact within his organisation that shall be available 24/7 (including weekends, bank holidays and site closure days) to deal with any incidents concerning the Contractor's Site in a fast and effective manner. The Contractor shall provide the ITER Organization with the direct contact details of this person and/or an on-call duty telephone number.

The temporary site facilities shall be located in the area close to the working area. In the case where the Contractor plans to connect its facilities to the existing networks, it shall be responsible for all necessary studies and works to implement these connections. The Contractor shall install relevant meters to ensure accurate monitoring of the consumptions. The ITER Organization shall not provide waste and wastewater connections to the Site. The Contractor shall be able to present the regulatory control reports of its premises without observation.

The roads and the areas around the worksite footprint shall be maintained in a constant state of cleanliness. The Contractor will take all necessary measures (scrubber, scraper, sweeper, karcher...). Should any said cleaning fail to be performed, it shall be done by a third party at the expense of the Contractor.

The Contractor shall be in charge to ensure:

- The permanent site clean and tidiness sustainability pavement used and rehabilitation of the site after work and dismantling of facilities;
- Removal, as and when they are produced, of the improper cuttings, rubble, demolition products, packaging, etc., produced by itself or by its subContractors;
- The cleaning of its Works and existing structures damaged by its work (cleaning or restoration with appropriate products) during the works period;
- Thorough general cleaning prior to Taking-Over.

The Contractor shall, prior to Taking-Over by the ITER Organization, ensure that all the Contractor's temporary facilities and plant are removed from the Site.

8.4 Protection of existing facilities

The Contractor shall ensure that existing facilities are not damaged by the Contractor while executing the Works and that suitable protection is put in place when working in the vicinity of existing facilities.

In case of any damages to the existing facilities and/or third party assets caused by the Works execution, the Contractor shall cover the cost of the remedial works.

8.5 Health and safety requirements

The Contractor shall respect the French Labour Code and apply the nine general safety principles listed in article L4121-2 thereof.

The Contractor shall also comply with the following documents and all proceedings arising therefrom:

- Internal Regulations [6];
- General health and safety coordination plan (PGC SPS) Vol. 1 - IO&F4E [7];
- Housekeeping Instruction [14];
- Lifting Instruction [18];
- Work at Height Instruction [19];

The ITER Organization has placed a contract to provide the services of a Health and Safety Protection Coordinator (HSPC) during the construction works. This contract is under the authority of the ITER Safety Department. The HSPC is mandatory for construction projects performed under the French Decree 94-1159. The HSPC defines the health & safety rules applicable on the site, reviews the specific health and safety plans (PPSPS) and co-ordinates activities from a health & safety perspective.

The Contractor's work will be subject to regular inspections by the HSPC and/or the ITER Safety Representative to ensure compliance with the health & safety practices, including but not limited to working at heights, housekeeping and storage of hazardous materials.

The Contractor and its subContractors shall establish a specific health and safety plan (PPSPS) using the ITER template (in French) and transmit it to the HSPC at least 15 working days (8 working days for subContractors) prior to the start of the Works.

Prior to the start of the on-site works, the HSPC performs a Common Inspection with the Contractor and its subContractors, in accordance with R4532-13 and R4532-14 of the French Labour Code.

All the Contractor and subContractor staff must follow a newcomer's safety training within 6 working days after the issuance of a permanent access badge. It does not relieve the Contractor

of its responsibilities with regards to the training of its staff for their work stations and the general safety rules in accordance with articles L4141-1 and following of the French Labour Code.

The Contractor shall pay specific attention to the safe and respectful behaviour of its on-site personnel. This includes supplying and wearing of appropriate personal protective equipment. In case the works involve the use of chemical products, the Contractor shall comply with the Chemical product management procedure [2] and fill in a chemical product acceptance form.

8.6 Nuclear Safety - Environmental protection

ITER is a basic nuclear facility (in French: “Installation Nucléaire de Base”) identified in France by the number INB-174 and subject to the French Order of 7 February 2012 relating to the general technical regulations applicable to basic nuclear facilities.

For these activities, the Contractor shall comply with environmental protection requirements and procedures applicable at the ITER Site, as described in [9] and [10].

The Contractor shall ensure that these activities are carried out by Suitably Qualified and Experienced Persons. For this purpose, the Contractor makes the necessary provisions for training in order to maintain the required skills and qualifications for its staff and, whenever necessary, to develop them, and – in case these activities are carried out by sub-Contractors – ensures that its sub-Contractors make analogue provisions for their own staff.

Furthermore, the ITER Policy on Safety, Security and Environment Protection Management – refer to [13], presenting the strategical objectives of the ITER Organization for protecting the interests mentioned under Article L593-1 of the French Environmental Code, must be circulated, known, understood and applied by all staff of the Contractor and cascaded down in the managerial lines of the Contractor and its sub-Contractors.

An Environmental Respect Plan (PRE) shall be produced using the ITER template [16] and provided by the Contractor at a minimum of ten (10) working days prior to the start of the on-site Work.

The Contractor shall submit a monthly environmental report, at the latest, on the 5th day of each month forming part of the monthly report, containing the information for the previous month.

8.7 Access to the site

Access to the ITER Site is subject to entrance and exit control measures as defined in the ITER Site access Procedure [5]. The Contractor shall manage his accesses using HELIOS system in a timely manner.

Regular access hours for the ITER construction site are from 5:30 to 22:30 (Monday to Saturday).

Access to the ITER Site outside regular access hours shall be possible for specific activities.

Specific controls are applied to personnel entering the site. For security purposes, access may be refused or withdrawn for any worker without justification.

8.8 Permit To Work

Prior to the start of any Works on the ITER Site, a Permit To Work must be obtained in accordance with the Permit To Work Procedure [4].

8.9 Language

All communication with the ITER Organization shall be in the English language.

The Contractor shall ensure that there is at least one person present on the construction site at all times capable of communicating in English.

8.10 Quality Assurance

The Contractor shall have an ITER approved Quality Assurance (QA) Program or an ISO 9001 accredited quality system.

The general requirements are detailed in ITER Procurement Quality Requirements - refer to [20].

The Contractor shall obtain written agreement from the IO to any modifications to the design, scope and/or the requirements described in this specification. Deviations and non-conformities shall be processed in accordance with Procedure for management of Nonconformities – refer to [21] and Procedure for the management of Deviation Request – refer to [22]. The Contractor shall commit to process non-conformities reports (NCR) and associated remedial and corrective actions expeditiously. The list of the NCRs and the deviation requests (DRs) shall be included in the monthly report issued by the Contractor – refer to Section 9.5.2.

The project will be realised under Quality Class 4 as described in Quality_Classification_Determination_ - refer to [23].

9 Contractor Deliverables

9.1 List of planned document deliverables

At the start of the contract, a list of planned document deliverables shall be established between the ITER Organization and the Contractor. For this purpose, at the latest 2 weeks after the signature of the contract, the Contractor shall submit a draft list of deliverables and their planned issue date using the ITER template.

The Supplier shall provide IO with the documents and data required in the application of this technical specification, the GM3S Ref [1] and any other requirement derived from the application of the contract.

Supplier is requested to prepare their document schedule based on the above and using the template available in the GM3S Ref [1] appendix II ([click here to download](#)).

9.2 Document and data exchange

All deliverables (except drawings and diagrams in PDF format) shall be transmitted through the ITER Document Exchange Area in IDM.

Drawings and diagrams in PDF and native format shall be exchanged too.

9.3 Document format

All deliverables shall be provided in electronic format (PDF and native file) through IDM or SMDD.

The as-built file shall also be provided on CD-ROM or USB key and in paper format (3 copies). Drawings shall comply with reference document [\[15\]](#).

PDF documents shall have text recognition and include bookmarks.

All drawings produced by the Contractor shall comply with the CAD instructions for companies [\[3\]](#).

All documents shall be provided in English, unless stated otherwise in this document. The ITER Organization shall provide the Contractor with the AutoCAD files of the up to date version of [\[12\]](#) which on completion of the Works shall be updated by the Contractor accordingly.

9.4 Document review and approval

The Contractor shall allow for a review period by the ITER Organization of 20 working days. The review period shall start after the upload and the Contractor's signature of the document in IDM.

In case the ITER Organization disapproves the document or requests a revision, the Contractor shall update and resubmit the deliverable within 10 working days, taking into account the comments issued by the ITER Organization.

9.5 Preliminary list of deliverables

9.5.1 *Early deliverables*

The Contractor shall provide the following documents prior to the start of the design works:

- Operational flow chart;
- Environmental Respect Plan (refer to [\[10\]](#));
- Site installation plan;
- Detailed Schedule of Works;
- List of subcontractor(s), if any;
- Plan (PPSPS) for the Contractor and each sub-contractor(s) - submitted to the ITER Organization no later than 8 working days prior to the Works commencement;
- Access requests for personnel – submitted to the ITER Organization minimum 8 working days prior to the Works commencement;
- Permit to Work Request including all the construction documentation - submitted to the ITER Organization no later than eight (8) working days prior to the Works commencement;

The construction work shall not start before the above documents have been approved by the ITER Organization.

9.5.2 *Construction design and works*

The Contractor shall provide the following documents during the execution of the construction works:

- Detailed Schedule of Works – updated if needed,
- Approved construction design drawings;
- Documentation defining the materials used and origin and justification of their characteristics;
- Results of control tests performed by the Contractor during the execution of the work;
- Statements relating to the hold points for control by the ITER Organization;
- Non-Conformance Reports (NCR) register and status - to be updated and issued on a monthly basis;

- Request for Information (RFI) reports register and status - to be updated and issued on a monthly basis;
- Monthly progress reports;
- All required documents concerned with the Contractor Quality Plan and Safety Plan or the environmental specifications of the ITER Organization or necessary to the traceability of the work.

Works construction without ITER Organization approval or in the absence of approved documents and samples shall be sanctioned by a stop work order until the situation has been rectified. All consequences of the work stoppage shall be borne by the Contractor.

A Monthly Report shall be submitted by the Contractor for acceptance by the ITER Organization five (5) working days after the end of each calendar month.

The Monthly Report shall contain:

- A narrative description of activities that have taken place over the period including photographic evidence of the progress of the Works;
- An update of the Schedule of Works (refer to Section 7.11.3 below) showing actual progress against planned progress;
- In the case where the Works are not progressing in accordance with the Schedule of Work, the report shall contain a detailed explanation of how the Contractor intends to recover the Schedule;
- A list and status of all RFI's submitted by the Contractor;
- A list and status of all Deviation Requests submitted by the Contractor;
- A list and status of all NCRs affecting the Works;
- A list and status of all ITER Organization requested Variations to the Works;
- A list of health and safety statistics;
- A number of worked hours on the Site;
- All accidents (including environmental issues / observation sheets) occurring on the Site (or elsewhere if connected to the Project);
- The number of accidents with lost working days;
- The number of lost working days per accident;
- A brief report of the causes of accidents or incidents as well as the corrective measures implemented following the accidents or incidents;
- An assessment of the training and safety awareness courses carried out during the month;
- Total number of workers curves as well as the number of hours worked per week;
- A list of environmental statistics including:
 - electricity consumption,
 - potable water consumption,
 - raw water consumption,
 - fuel consumption,
 - quantities of waste generated, distinguishing between hazardous waste, non-hazardous waste, inert waste, concrete laitance and the overall percentage of recycled waste.

9.5.3 *As-built file*

After the execution of the Works, and prior to Taking-Over, a complete as-built file shall be provided by the Contractor, including:

- Detailed as-built drawings taking into account any change implemented during construction. The plans shall be revised as a final "as-built" version;

- Final design calculations;
- Register of all NCRs and RFIs reports raised during the execution of the contract (including the reports);
- Results and statements of the tests on site;
- Final topographic surveys, with DWG versions and statements of the Works carried out;
- Auto control tests showing the results of the control tests performed by the Contractor during the execution of the Works;
- Commissioning report showing the results of the control tests performed by the Contractor during the execution of the work;
- Worksite pictures folder documenting the as-built status of the Contractor deliverables.

The documents listed above shall be formally submitted to and approved by the ITER Organization. The Contractor shall allow for a review period by the ITER Organization of 10 working days.

9.5.4 *Number and format*

All deliverables shall be provided in electronic format (PDF and native file) through IDM.

Drawings shall comply with reference document.

All documents shall be provided in English, unless stated otherwise in this document.

10 Taking-over

The Works shall be taken over by the ITER Organization when they have been completed in accordance with the contract, except for any minor outstanding work and defects which will not substantially affect the use of the Works for their intended purpose.

The Works shall not be considered as to be completed for the purposes of taking-over until the as-built documents have been provided by the Contractor.