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**Technical Specifications (In-Cash Procurement)**

**Rope works Technical Specification**

Rope works Technical Specification

## SERVICE

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### 1 Preamble

Efficiency, productivity and cost savings have become a paramount consideration for the ITER project. When it comes to construction and maintenance projects involving tall structures, accessing elevated areas can be a complex challenge. Traditionally, various means of access, such as scaffolding or aerial lifts, have been employed to reach these heights. However, an alternative approach, which has been proven to be more efficient in many cases, is using rope workers.

Rope access or rope works is a specialized technique that utilizes ropes and associated equipment to access difficult-to-reach locations. It has gained widespread recognition for its versatility and effectiveness in a wide range of industries, including construction, maintenance, inspection, and rescue operations. In this preamble, we will explore the reasons why placing a contract for rope works can be more efficient than providing other means of access.

Firstly, rope access eliminates the need for costly and time-consuming structures like scaffolding or the setup of aerial lifts. Setting up scaffolding takes a considerable amount of time, involve sometimes non negligible risks and can have a higher cost with impacts on the coordination and availability of the construction areas. By opting for rope access, organizations can bypass these resource-intensive steps, resulting in significant time and cost savings.

Secondly, rope access provides greater flexibility and manoeuvrability. Unlike fixed structures such as scaffoldings, ropes can be installed quickly and adjusted to suit the specific needs of the task at hand. Rope access workers, trained in specialized techniques, can navigate complex geometries and confined spaces with ease. This adaptability allows for efficient completion of tasks that might otherwise be challenging or impossible to achieve with conventional access methods.

Moreover, rope access offers embedded and enhanced safety measures. When compared to traditional means of access, such as ladders or scaffolding, rope access adheres to stringent safety standards. Technicians undergo rigorous training and certifications, making them well-equipped to handle potential risks while working at heights. The use of redundant safety systems and the expertise of well trained personnel contribute to a safer work environment.

In conclusion, the benefits of using this intervention method are evident. From substantial cost savings and increased efficiency to enhanced safety and reduced environmental impact, rope access stands as a reliable and advantageous alternative to conventional means of access.

This Technical Specification is to be read in combination with the General Management Specification for Service and Supply (GM3S) – [Ref 1] that constitutes a full part of the technical requirements.

In case of conflict, the content of the Technical Specification supersedes the content of Ref [1].

### 2 Purpose

The purpose of the present technical specifications is to define the requirements for the services to be provided by a company that will perform Rope Access workers to perform activities on the ITER site when other methodologies of work are not applicable due to technical, practical or safety constraints.

The interventions can be “specific and punctual”, with a limited duration or routine activities a the periodical cleaning of inaccessible structures and areas. When needed these shall be performed during night shifts in order to avoid coactivity without impacting the other contractor’s schedule.

The Contractor shall be capable to guarantee the services as detailed in section 6 of this specification.

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Due to the complexity and constraints of the worksite (i.e. NDEs occurring during the night), the resources working on the ITER site shall whenever possible be always the same. In case of unavailability the Contractor shall promptly provide (at no extra cost) another qualified resource. The replacement shall have same / equivalent or better qualifications as the original.

This document will be used to set up a Framework Service contract with the Contractor.

## 3 Acronyms & Definitions

### 3.1 Acronyms

Abbreviation	Description
<b>CRO</b>	Contract Responsible Officer
<b>GM3S</b>	General Management Specification for Service and Supply
<b>IO</b>	ITER Organization
<b>PRO</b>	Procurement Responsible Officer
<b>CI</b>	Cordage Institute (USA)
<b>CMA</b>	Construction Management-as-Agent (MOMENTUM) appointed by the IO to coordinate the construction and installation works at the ITER Site.
<b>HEPA</b>	High Efficiency Particulate Air (filter)
<b>IDM</b>	ITER Document Management Database
<b>ISO</b>	International Standards Organization
<b>IRATA</b>	International Rope Access Trade Association
<b>NDE</b>	Non destructive Examinations
<b>PPE</b>	Personal Protective Equipment
<b>PPSPS</b>	Individual Health Protection and Safety Plan (Plan Particulier de Sécurité et de Protection de la Santé)
<b>PTW</b>	Permit To Work
<b>UIAA</b>	International Mountaineering and Climbing Federation
<b>WAR</b>	Work Authorization Request
<b>WS1/WS2</b>	Work Site 1 / Work Site 2

### 3.2 Definitions

Definition	Description
<b>Anchor</b>	General term used as a noun to describe a fitted or unfitted anchor device, or a structural anchor containing an anchor point, or as a verb to describe the act of connecting to a fitted anchor device or a structural anchor
<b>Anchorage point</b>	Specific area used to fasten an anchoring device

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Definition	Description
<b>Anchor device</b>	Personal fall protection equipment comprising an assembly of elements with one or more anchor points or mobile anchor points and which is removable from the structure or natural feature
<b>Anchor point</b>	Point on an anchor device or structural anchor used for the connection of personal fall protection equipment
<b>Back-up device</b>	Ascending device/descending device or back-up device for a safety line, which accompanies the user during changes of position or allows adjustment of the length of the safety line and which locks automatically to the safety line, or only allows gradual movement along it, when a sudden load occurs
<b>Connector</b>	Openable device used to connect components, which enables the user to link himself or herself directly or indirectly to an anchor point
<b>Contractor</b>	Shall mean an economic operator who have signed the Contract in which this document is referenced.
<b>Expert Competent Person (SQEP)</b>	<p>For the purpose of the present technical specifications, the Expert Competent Person (SQEP) is the suitably qualified experienced person who is a person who is requested to perform the activity.</p> <p>The SQEP shall have satisfactorily completed full time formal training from a recognized institute or organization.</p> <p>The SQEP shall be equipped with all the specific Personal Protective equipment and tools requested for the activity to be performed.</p>
<b>Lifting equipment</b>	Work equipment for lifting or lowering loads, including its attachments used for anchoring, fixing or supporting it, e.g. chain or rope sling or similar; ring; link; hook; plate-clamp; shackle; swivel; eyebolt; webbing
<b>Rope access</b>	Method of using ropes, in combination with other devices, by which a user descends or ascends a working line to get to or from the workplace, and for work positioning, while further protected by a safety line, such that both lines are connected to the user's harness and separately secured to a reliable anchorage in such a way that a fall is prevented or arrested
<b>Work positioning</b>	Technique that enables a person to work supported in tension or suspension by personal fall protection equipment in such a way that a fall from a height is prevented or restricted

## 4 Applicable Documents & Codes and standards

### 4.1 Applicable Documents

This is the responsibility of the Contractor to identify and request for any documents that would not have been transmitted by IO, including the below list of reference documents.

This Technical Specification takes precedence over the referenced documents. In case of conflicting information, this is the responsibility of the contractor to seek clarification from IO.

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Upon notification of any revision of the applicable document transmitted officially to the contractor, the Contractor shall advise within 4 weeks of any impact on the execution of the Contract. Without any response after this period, no impact will be considered.

Ref	Title	IDM Doc ID	Version
1	General Management Specification for Service and Supply (GM3S)	<a href="#">82MXQK</a>	1.4
2	PGC SPS Vol 1	<a href="#">T6V4RP</a>	4.4
3	Specification_CMA_General Management Specification for Contractors - Deliverable 5.3	<a href="#">TYLAQ9</a>	4.1
4	Specification_CMA_Health, Safety and Environment Reference Guide	<a href="#">UBFFWS</a>	5.0
5	Work_At_Height_Instruction	<a href="#">Y5X8R7</a>	1.3
6	Contractual List of applicable Documents (LAD)	<a href="#">EAYZM8</a>	1.0

### 4.2 Applicable Codes and Standards

This is the responsibility of the contractor to procure the relevant Codes and Standards applicable to that scope of work.

Contractor is required to operate a management system for equipment certification, traceability and inspection in accordance with these relevant national regulations.

The contractor shall have an appropriate insurance coverage, e.g. for the rope access technicians, public liability and other aspects relevant to the worksite.

#### 4.2.1 Rope Standards

Acceptable standards for ropes are:

Ref	Title	Standard
CS1	Low-stretch kernmantle ropes	EN 1891; CI 1801 <sup>1</sup>
CS2	Dynamic kernmantle ropes	EN 892; UIAA-101
CS3	All types of kernmantle rope	CI 2005

#### 4.2.2 Harness standards

Acceptable standards for harness are:

Ref	Title	Standard
CS4	sit harnesses	EN 813
CS5	full body harnesses	EN 361; ISO 10333-1

<sup>1</sup> CI 1801 provides requirements for low stretch and static kernmantle ropes. The elongation requirements for low stretch kernmantle rope in CI 1801 are not the same as those in EN 1891: low stretch kernmantle rope conforming to CI 1801 is likely to be more elastic. The elongation requirements for low stretch kernmantle rope in EN 1891 are closer to those for static kernmantle rope in CI 1801.



**SERVICE***4.2.3 Connectors*

Acceptable standards for connectors are:

Ref	Title	Standard
<b>CS6</b>	All types, including self-closing and self-locking types	EN 362
<b>CS7</b>	Self-closing and self-locking types only	ISO 10333-5

*4.2.4 Descending Device*

Acceptable standards for descending devices are:

Ref	Title	Standard
<b>CS8</b>	Devices	EN 12841, Type C; ISO 22159
<b>CS9</b>	For rescue only	EN 341

*4.2.5 Ascending Device*

Acceptable standard for ascending devices is:

Ref	Title	Standard
<b>CS10</b>	Devices	EN 12841, Type B

*4.2.6 Back-up Device*

Acceptable standard for back-up device is:

Ref	Title	Standard
<b>CS11</b>	Devices	EN 12841, Type A

*4.2.7 Lanyards*

Acceptable standards for lanyards are:

Ref	Title	Standard
<b>CS12</b>	Devices	EN 354, ISO 10333-2
<b>CS13</b>	Construction of device lanyards and anchor lanyards	EN 892; UIAA-101

*4.2.8 Anchor devices*

Ref	Title	Standard
<b>CS14</b>	Devices	BS 7883 and EN 795

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### 4.2.9 Helmets

Acceptable standards for helmets devices are:

Ref	Title	Standard
CS15	Industrial EN 397; EN 14052	EN 397, EN 14052
CS16	Mountaineering	EN 12492

### 4.2.10 Pulleys

Acceptable standards for pulleys devices are:

Ref	Title	Standard
CS17	Devices	EN 12278
CS18	Devices	UIAA 127

## 5 Scope of Work

This section defines the specific scope of work for the service, in addition to the contract execution requirement as defined in Ref [1].

The scope of the present technical specifications is to define the technical requirements and qualifications requested to the Contractor for the performance of the works at height, works on ropes respecting the requirements of the French labour code and by the other applicable laws and regulations.

Since the activities required from the Contractor may vary for each intervention, this technical specification will outline only the general requirements.

Specific details and additional instructions for each intervention will be provided separately as needed either by the IO-CRO or will be defined upstream the intervention by the stakeholders. This approach ensures flexibility while maintaining a consistent standard of quality and compliance across all tasks.

The main activities expected to be carried out are (non-exhaustive list):

- Installation and removal of safety nets.
- Assistance during lifting<sup>2</sup> operations.
- Cleaning of inaccessible areas.
- Small mechanical works.
- Façade works.
- Minor painting and touch up activities.
- Installation of permanent or non-permanent systems including welding and NDE.

The details of each specific intervention, together with the supply of specific (typically) off the shelf material (i.e. mechanical expansion anchors, cables, or other) will be detailed and agreed before each specific intervention between the IO Technical Responsible Officer and the representative of the Contractor through the dedicated Instruction to proceed (ITP). The specific ITP will also detail any specific quality requirement that the Contractor shall respect during the execution of the works.

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<sup>2</sup> If needed a dedicated Lock out-Tag out shall be put in place

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The works can be carried out on the whole ITER site depending on the needs but will be mainly performed in the Building 13 (Tokamak Assembly Building) and B11 (Tokamak Building) in the areas commonly identified Ws1 and Ws2.

Working schedule will have to be adapted to the needs of the site, thus, working with extended time, working during weekends, night shift, in multiple shifts or on call might be requested.

All Contractor's questions or inquiries shall be reported to the IO Technical Responsible Officer or his delegate. The Construction Manager-as-Agent (Momentum) might be involved in the coordination matters.

### 5.1 Work Methods

Of primary importance is the principle of double protection realized with double anchor point. It is essential to include the provision of at least one additional means of protection to prevent a rope access technician falling, for example, a safety line in conjunction with the working line.

This means that, should any one item fail within the suspension system, there is an adequate safety back-up to protect the user. Therefore, when a rope access technician is to be in tension or suspension, there shall be at least two independently anchored lines, one primarily as a means of access, egress and support (the working line) and the other as additional back-up security (the safety line<sup>3</sup>).

The connection of a rope access technician to the rope access system or other personal fall protection system and disconnection from it shall be made in an area where there is no risk of a fall from a height.

The rope access technician shall be permanently connected to both the working line and the safety line via an appropriate full-body harness. To connect the working line and the safety line shall be used two different points on the harness.

The primary connection to the rope access technician of both the working line and the safety line shall always be via the harness, even if a work seat is being used.

Steps shall be taken to ensure a rope access technician is unable to descend inadvertently off the end of the working line or safety line and that, if the intention is to exit from them at the bottom, the anchor lines are long enough to do so.

An efficient communication system shall be established between all rope access technicians in the team and, where necessary, third parties, e.g. the control room, CMA coordinators, NDE coordinator, supervisors.

Rope access systems shall be planned to avoid falls. In the unlikely event of a fall, the impact<sup>4</sup> load on a rope access technician shall never be greater than 6 kN.

The distance and consequences of any potential fall shall always be minimized. No potential fall shall allow the rope access technician to impact with the ground or other structures in a way likely to cause injury.

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<sup>3</sup> Where appropriate, the safety line may be substituted by other forms of back-up security, which shall equal or better the performance of the one it replaces

<sup>4</sup> Potential impact loads can be reduced by keeping fall distances to a minimum, e.g. by positioning the back-up device high

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Rope access technicians shall work in teams of no fewer than two, **one of whom shall be a Level 3 rope access safety supervisor or equivalent** approved certification.

Lone working is not allowed on the ITER site.

Special precautions shall be implemented when the works shall be carried out in confined spaces.

The contractor shall provide his rope workers with all the PPEs (standard or specific) needed to perform the agreed task.

**5.2 Service Duration**

The expected duration for this activity is 48 months, with two optional periods of 12 months.

**5.3 Cleaning Works**

The contractor shall perform cleaning operations of the areas that are not accessible with other means. There will not be a single cleaning method to be used for the whole scope, this shall be adapted from time to time depending on the scope.

I.e. flat and regular surfaces can be cleaned with rags (dry or wet), irregular surfaces can be cleaned with vacuum cleaner.

In any case prior to intervene the contractor shall recover any foreign material found in the areas like nuts, bolts, welding rods, grinding disks or any other material or garbage found.

Waste (up to 1 Kg) shall be put immediately in plastic bags to avoid spreading any dust or contaminants in the environment.

Vacuum cleaner shall be equipped with HEPA filter.

The Contractor might be requested to perform Cleaning Works like:

- Cleaning (periodical or exceptional) of areas non accessible by the standard cleaning contractor,
- Other as required,

*5.3.1 Cleaning team composition*

Typically, the interventions will be organized according to one of the following team’s composition:

Team	Composition	Shift
<b>Configuration 1</b>	1 Rope Access L3 classification 1 Rope Access L2 classification 2 Rope Access L1 classification	Night or Day
<b>Configuration 2</b>	1 Rope Access L3 classification 0 Rope Access L2 classification 2 Rope Access L1 classification	Night or Day
<b>Configuration 3</b>	1 Rope Access L3 classification	Night or Day

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Team	Composition	Shift
	0 Rope Access L2 classification 3 Rope Access L1 classification	
<b>Configuration 4</b>	1 Rope Access L3 classification 1 Rope Access L1 classification	Night or Day

In case extra resources will be needed to perform the activities, these will be valued according to the approved Schedule of Price.

**5.4 Mechanical Works**

The Contractor might be requested to intervene to perform works / activities when other methodologies are not appropriate, safe or result being more expensive. Typical request can be the installation of lifelines not originally delivered by the building owners, to install segregations airlocks, to remove or intervene on part of the installation like water supply or ventilation systems. The Contractor might be requested to install permanent systems (or parts of it) on behalf of the IO like (such kind of work will be subject of dedicated instruction and method statement to be issued in conjunction with the IO).

Whenever possible the consumables shall also be pre-estimated by the Contractor and listed in the detailed offer to be used as basis for the ITP.

The Contractor might be requested to perform miscellaneous Mechanical Works like:

- Purge of unstable rocks and pebbles from cliffs,
- Sealing (airtight) of openings and penetrations/hatches,
- Installation of lifelines,
- Removal of materials, arrange cables,
- Procurement and installation of safety nets,
- Installation or modifications of the HVAC system,
- Other as required,

*5.4.1 Mechanical works team composition*

Depending on the type of work needed, the number and qualification of resources requested to carry on the activities will be agreed upstream between the IO Contract Responsible Officer and the Contractor.

**5.5 Painting and Touch up Works**

The Contractor might be requested to perform miscellaneous Painting and Touch Up works when providing access to other contractors will not be safe or setting up an access will be more expensive compared with the cost of a rope work team.

This intervention can be subject of a dedicated and detailed integrative Technical Specification to detail the application methods and controls to be performed.

Whenever possible the consumables shall also be pre-estimated by the Contractor and listed in the detailed offer to be used as basis for the ITP.

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### 5.5.1 *Painting works team composition*

Depending on the type of work needed, the number and qualification of resources requested to carry on the activities will be agreed upstream between the IO Contract Responsible Officer and the Contractor.

## 5.6 Welding and Non-Destructive Examinations Works

The Contractor might be requested to perform welding and associated NDE (other than Radiographic Tests) works when, providing access to other contractors will not be safe or setting up an adequate access will be more expensive compared with the cost of a rope work team.

This intervention will be subject of a dedicated and detailed integrative Technical Specification to detail the application methods, qualifications and controls to be performed.

Whenever possible the consumables shall also be pre-estimated by the Contractor and listed in the detailed offer to be used as basis for the ITP.

### 5.6.1 *Welding and Non-Destructive Examinations works team composition*

Depending on the type of work needed, the number and qualification of resources requested to carry on the activities will be agreed upstream between the IO Contract Responsible Officer and the Contractor.

## 6 Location for Scope of Work Execution

The Contractor can be requested to intervene in any area of the ITER site, either inside buildings (typically WS 1 & 2) or outside like in the gap between the external soil retaining wall and the Outer face of the buildings, on the facades or in any other location.

Some of the works might be performed in areas currently under the coordination of the CMA where the requirements of the General Management Specification for Executing Entities at the ITER Site (YX55YY) are applicable, see Ref [1] other works can be executed in area under the coordination of other entities, specific requirements or procedures might apply.

## 7 IO Documents

The IO Technical Responsible, IO Contract Responsible officer or a representative of the IO coordination team will be responsible to request / instruct the works to the Contractor, when feasible he/she will have to agree with the Contractor (whenever possible prior the intervention) the list of materials (consumables) to be used.

The IO Contract Responsible Officer will instruct the Contractor for each activity with a detailed Instruction to Proceed (ITP); at the end of the activity (or series of activities if the works are planned to last more than one day or shift), he/she will issue the correspondent Payment Certificate following the approval of the detailed intervention report issued by the Contractor.

Upon request of the Contractor the IO-CRO will coordinate within the organization to collect the evidence needed to validate the resistance of the structures used as anchoring point. These shall be transmitted to the contractor prior the start of the activities.

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### 8 List of deliverables and due dates

Within five (5) working days following the completion of the task or intervention, the Contractor shall submit a detailed report in English through the Document Management Platform (IDM) for review and acceptance by the IO Contract Responsible Officer. This report must comprehensively outline and document the following information:

- A Unique identifier / number,
- The activities performed, photos or evidence of the works performed under the specific ITP,
- Start time and finish of the intervention,
- Team composition,
- Any relevant observations, finding, anomaly found during the work,
- When applicable, the list and the price of ancillary materials used during the intervention,
- Pre job & post job check sheets with a special focus on the protections of Important components, preventive measures and FME.

In case of multiple interventions during a short period of time is accepted that the Contractor will join these into a single acceptance report to be submitted within 5 working days from the completion of the task.

#### 8.1 Acceptance Criteria

Once the report will be approved in IDM by the IO Technical Responsible Officer or delegate, he/she will issue a payment certificate within 14 calendar days. The contractor can then use it to invoice the activity.

If any errors or discrepancies are identified in the report, the IO TRO will request the Contractor to revise and resubmit a corrected version within seven (7) calendar days.

Upon receipt of the revised report, the approval process timeline of fourteen (14) calendar days will restart, allowing for a thorough review and acceptance of the updated submission.

Payment of invoices by the IO will not be made until the report has been fully accepted in IDM and the corresponding Good Receipt (GR) has been recorded in SAP.

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.

A minimum, (but not limited to), list of documents is available hereafter with associated due dates:

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Technical Design Family (TDF)	Generic Document Title (GTD)	Further Description	Expected date (T0+x) *
Contract Management	PPSPS	Detailed Health and safety plan	T0+2
Contract Management	ERP	Environmental Respect Plan	T0+2
Contract Management	QP	Quality plan	T0+2
Contract Management	MP	Management Plan	T0+4

(\*) T0 = Commencement Date of the contract; X in weeks.

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 Quality Assurance requirements

The organisation conducting these activities shall have an ISO 9001 accredited quality system or equivalent. The performer shall establish a dedicated Quality Plan for managing each IO project activity. The general requirements are detailed in ITER [Ref 1] GM3S section 8. For specific tasks subject of a dedicated ITP, a detailed quality plan can be requested. This shall respond to the requirements listed below.

## 10 Safety requirements

The scope under this contract does not cover PIC and/or PIA and/or PE/NPE components, [Ref 1] GM3S section 5.3 applies.

However, the personnel are required to respect all the precautions when working on or in vicinity of PIC or unique components. The concerned TRO might be requested to review and approve the method statements or provide additional instructions to prevent any damage to such components.

### 10.1 Nuclear class Safety

### 10.2 Seismic class

No specific safety requirement related to PIC and/or PIA and/or PE/NPE components apply.

## 11 Worksite 1 specific requirements

When the Contractor will have to work in the Worksite 1 (or in any other area where the cleanliness and FME protocol are applicable) the requirements of, [Ref 1] GM3S section 8.5 applies and shall be respected all the time.

### 11.1 Foreign material exclusion (FME)

The FME is a process aiming to prevent Foreign Material (FM) impacts on ITER Facility Structures, Systems and Components (SSCs), for details refer to document #17 of [6].

With FM is intended any object, part or material that is not part of the system as per the design.



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In order to guarantee the respect of the FME protocol at the end of each intervention the foreman / team leader shall fill a “post job report/checklist”.

A preliminary check list is provided for reference in appendix 14, the Contractor shall develop his own checklist adding any other possible check to better cover his activities.

The List of applicable documents [6] gathers all the current documents to be considered as applicable for the access and works in the areas subject of this protocol.

Given the significant number of metrology targets installed in the site, the Contractor shall exercise particular care in identifying and monitoring these elements throughout the preparation and the works. In cases where any of these “spheres” (metrology targets) are positioned in locations that are not clearly visible or readily accessible during the execution of the works, the Contractor shall promptly seek clarification from the designated coordinators before proceeding. This is to ensure that all measurement reference points are properly safeguarded and that no target is inadvertently obstructed, displaced, or damaged during construction activities.

### 11.2 Cleanliness

The Contractor, through the Cleanliness Correspondent shall maintain evidence of the respect of the Work Site 1 Cleanliness Protocol.

Deliver recurrent trainings for all the personnel, the Contractor shall define the specific methodologies procedures for the management of the cleanliness for their work scope, including the highlight of any issue regarding cleanliness

In order to guarantee the respect of the cleanliness conditions in the working area, at the end of each intervention the WS1 foreman / team leader shall fill a “post job report/checklist”. A preliminary one is provided for reference in appendix 14, the Contractor shall develop his own checklist adding any other possible check to better cover his activities.

The List of applicable documents [6] gathers all the current documents to be considered as applicable for the access and works in the areas subject of this protocol, the main ones are the reference #17 and #58 of applicable doc [6].

### 11.3 Worksite 1 Material Acceptance

The Contractor shall request to the IO the approval for any material, (including ropes, carabineers, tools, etc...) that are intended to be used in the WS1 and that can cause a contamination of the environment.

Wherever possible the PPEs and material shall be reserved for the sole use on the ITER site and shall be kept as clean as possible.

### 11.4 PPEs and Clean Clothes

In addition to the standard PPEs foreseen for the works performed through Alpinist techniques, the Contractor shall provide to the personnel working in the Ws1 (and extensions) suitable clean / white clothes respecting the requirements detailed in the Cleanliness Strategy [\[WW78E8\]](#) reference # 58 of [6].

**SERVICE****12 Specific General Management requirements**

Requirements of [Ref 1] GM3S section 6 applies except:

Section Number	Title
7.3.2	<i>Inspection and test Plan</i>
7.3.3	<i>Control points</i>
7.3.4	<i>Invitation process</i>
7.3.7	<i>Radiographic Test requirements</i>
7.3.8	<i>On-site operations and tests</i>
7.3.9	<i>Final documentation</i>
7.5	<i>Measurement and Test Equipment</i>
9.1	<i>Planning</i>
9.2	<i>Cost estimating</i>
9.3	<i>Reporting</i>
10	<i>Project Risk and Opportunity Management</i>
11.3	<i>CAD</i>
13.2	<i>Construction work package / Installation Work Package Requirements</i>
14	<i>Completion management</i>
16.2	<i>Smartplant</i>
16.3	<i>Smartplant for Owner Operators (SPO)</i>
16.4	<i>Smartplant enterprise for owner operators system completion (SPOSC)</i>
16.5	<i>Smartplant construction (SPC) for workface planning</i>
16.6	<i>Primavera</i>
16.8	<i>Contract management Tool</i>
17	<i>Configuration management</i>
18	<i>Interface management</i>

**12.1 Contract Gates**

Not Applicable

**12.2 Work Monitoring**

This Contract will be regulated by ITP and each ITP will be considered as a free-standing activity with a limited duration (typically no longer than one week) that will make the monitoring of the work an unnecessary activity.

A progress meeting will be organized each semester to evaluate the activities and eventual corrective actions to be put in place to better suit the site needs.

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### 12.3 Delivery time breakdown

The interventions will be requested and agreed between the IO TRO and the Contractor with the intervention to occur within at least 72 hours. In exceptional cases, however, to resolve critical situations, the IO may need a quicker intervention within 24 hours.

#### 12.3.1 On call service

This section defines the requirements and operational conditions for the on-call service activities to be provided by the Contractor. The service ensures the timely intervention of qualified personnel in response to situations potentially requiring an immediate technical support.

##### 12.3.1.1 Requirements

The Contractor shall provide an on-call service guaranteeing that qualified personnel are available and ready to intervene within two (2) hours from the notification issued by the IO Contract Responsible Officer or requester.

The period of activation of the service will be detailed in writing by the IO-CRO in a dedicated communication.

The Contractor shall guarantee that all necessary means (i.e. personnel, tools, vehicles, communication devices) are always maintained in readiness during the whole on-call period.

##### 12.3.1.2 Activation of the service

The IO-CRO or the point of contact (requester) will notify the Contractor through the designated communication channel (telephone, SMS, or other appropriate communication channel) the need.

This notification time shall be considered as  $T_0$ .

- The Contractor must acknowledge the receipt of the notification within 15 minutes through an e-mail message to the requester and the IO-CRO.
- Intervention on site shall commence no later than  $T_0 + 2$  hours.

Failure to comply with these response times may result in the application of penalties.

##### 12.3.1.3 Intervention

The on-call intervention shall include, but not be limited to:

- Diagnosis of the issue/need.
- Implementation of corrective actions (temporary or permanent).
- When possible restoration of service to normal operating conditions or implementation of agreed mitigation actions.
- Recording of actions taken, time spent, and materials used.
- Submission of a written intervention report within 48 hours from completion.

##### 12.3.1.4 Compensation and Payment

- Availability Fee

A Fixed amount shall be paid to the Contractor to cover the costs associated with maintaining availability during the designated on-call periods. This fee compensates for the obligation to ensure readiness, regardless of whether interventions occur.

- Travel Compensation Fee

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For each intervention, a travel fee shall be paid for each technician.

The amount shall be in accordance with the Schedule of Prices and shall cover round trip cost (travel time, vehicle use, and related expenses).

- Compensation for Actual Work time

The actual time worked on site during an intervention will be compensated based on the hourly rates defined in the Schedule of Prices.

The recorded intervention time shall begin upon arrival on site and end upon completion of the corrective action or departure, as documented in the intervention report.

### 12.4 CAD design requirements

This contract does not imply CAD activities other than simple sketch or schematic for reporting of better detail the activities.

### 12.5 Implementation of the Contract

This Service Contract shall be implemented by means of Tasks Orders, intended as freestanding services activities.

Each Task shall be instructed by a specific Instruction to Proceed (ITP), issued by the IO TRO or CRO, in case particular activities/services will be requested to the Contractor, a dedicated additional technical specification or work statement can be provided to better specify or support the activity.

The global amount of the Service Contract is only a maximum ceiling amount that does not represent any formal commitment by the ITER Organization to the Contractor. Only an ITP signed by both parties will be a legally binding agreement.

The Contractor shall have in place, for the duration of the Contract, SQEPs possessing all the competences required to perform the task.

The full procedure relating to the formation of the Task will be detailed in the contract itself.

#### 12.5.1 Contractor Responsibilities

The Contractor shall perform (in team<sup>5</sup>) the required tasks according to the ITP issued by the IO Contract Responsible Officer and the agreed method statement

At the end of the activity the Contractor shall promptly issue a detailed “activity report” to be approved by the IO Contract Responsible Officer or delegate.

For each intervention Contractor shall provide at least one Level 3 rope access safety supervisor that shall be present on site during all the interventions being the SQEP responsible for the safety of the rope access systems and the Level 1 and Level 2 rope access technicians who work under his/her supervision.

Before work begins, at least the following personnel / roles shall in place to enable the rope access team to carry out a task safely:

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<sup>5</sup> Lone working is not allowed on the ITER site.

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1. a rope access manager with overall responsibility for the rope access site, this function might be covered by the L3 qualified personnel,
2. an appropriate number of trained and suitably equipped rope access technicians, with a minimum of two resources, one of which is a Level 3 rope access safety supervisor<sup>6</sup>;
3. additional assisting personnel as required, e.g. spotter

### 12.5.2 *Emergency procedures*

During standard working hours the safety is provided by IO through the emergency response team (ERT).

Outside standard working hours in case of emergency the intervention will be guaranteed by the fire brigade.

On their site the rope access technician shall endeavour always to be in a position such that, in the event of an incident, he/she would be able to rescue him/herself, or to be rescued quickly and efficiently by the dedicated on-site rescue team.

All the technicians shall be trained to practice rescue on rope interventions and at any time shall be able to put on the ground their teammate to facilitate the intervention by the rescue team.

All technicians shall refresh their rescue technique at least every 3 years.

### 12.5.3 *Exclusion zones*

Appropriate exclusion zones shall be established in coordination with the Contractor health & safety officer and the IO coordination team, to protect against falls where rope access technicians need to attach to the rope access system, e.g. an unprotected edge; to protect against falling objects from above; to protect people below the area of rope access operations and to protect against unauthorized persons entering the work area(s).

Exclusion zones may be necessary at several levels (elevations), e.g. above anchor level; at anchor level; at intermediate areas; at ground level depending on the specific task requested to be carried out.

### 12.5.4 *Planning*

Before any rope access intervention and based on the specific task required, a documented system shall be in place to define or provide at least the following:

1. clear line-management structure showing the responsibilities of personnel,
2. a risk assessment, which covers identification of hazards, assessment of the likelihood of an incident occurring and control measures to minimize the risk as per 12.5.7,
3. specific planning of the intervention,
4. confirmation that the rope access safety supervisor has the Contractor authority to act whenever necessary to ensure the safety of the rope access technicians,
5. the selection of qualified personnel.
6. records of the competence of personnel, e.g. skill levels and experience.
7. the selection of appropriate equipment.
8. a list of equipment with updated inspection records.

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<sup>6</sup> Depending on the specific task to be carried out, It may be necessary to have more than one Level 3 rope access safety supervisor present,

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9. when applicable, specific procedures to deal with hazardous materials, machinery, fixtures and tools and environmental hazards

### 12.5.5 *Pre-job checks*

Pre-job checks shall be carried out before any rope access work is undertaken, to confirm that rope access is a suitable method and to ensure control systems are in place to allow the work to be carried out safely.

Examples of minimum points to be covered are:

1. how the work area can be accessed and exited safely.
2. the ease and degree of safety with which a rope access technician will be able to use tools and equipment while suspended.
3. whether there might be a risk of loose materials or equipment falling onto people below.
4. whether the duration of the work in a location might put the rope access technician at risk.
5. whether rope access technicians could be rescued quickly from any potential position in which they might find themselves.
6. Perform an accurate reciprocal check “buddy check” of the equipment and PPEs

### 12.5.6 *Post-Job checks*

The Contractor shall develop his own post Job checklist based on the draft proposed in appendix 14 and this shall be submitted together with the intervention report to the IO-CRO for approval.

### 12.5.7 *Risk assessment*

The Contractor shall identify the hazards generated/involved with the activity and examine how they can be removed or, if this is not possible, how the risk can be mitigated to an acceptable level. This is determined by carrying out a risk assessment.

The details provided in the risk assessment shall be in proportion to the risks. Once the risks are assessed and considered, insignificant risks can then often be ignored, unless the type of work to be carried out would increase those risks.

Hazard identification shall comprise identification of anything with the potential to cause harm, for example:

1. power cables, which could pose a risk of electric shock,
2. the presence of any movable device (i.e. overhead crane, trolley, lift or similar) close to the anchoring point or in the working area that might require the adoption of a Lock Out- Tag Out Procedure,
3. any hazard placing the public or other workers at risk, in particular, persons working on the ground on to which debris or tools could be dropped,
4. the presence of other activities,
5. the type of tools being used,
6. moving or carrying heavy tools or equipment,
7. repetitive use of tools or equipment,
8. the unavailability of anchor points of suitable size, shape and strength for the proposed access method and work to be carried out,
9. sharp or rough edges on which the anchor lines could be cut or abraded,
10. hot surfaces or hot work that could damage anchor lines or injure rope access technicians,
11. hazardous substances, or works in confined spaces,

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### 12. adverse weather conditions.

After the hazards have been identified, the risk assessment shall continue with a careful study of all the hazards identified, to determine the level of risk posed by each.

As a first step, wherever possible, hazards shall be reported and eliminated. If this is not possible, specific measures shall be taken to minimize the likelihood of persons being harmed. Thus, the chance of an incident occurring in the first place is reduced. In addition, the undesirable possibility of having to deal with an incident and its consequences is also reduced.

The hazard identification and risk assessment shall be documented and cover all aspects of the work to be undertaken. The document(s) shall be communicated to the personnel working on-site and acknowledged by them before the work, if during the works any of these risks will change, the risk assessment shall be updated accordingly to take account the new risks.

Any activity is subjected to a specific permit-to-work (PTW) which will include also Lock-out Tag-out when needed.

The risk assessment will include detailed consideration of foreseeable emergency scenarios and planning as to how any rescue would be carried out.

### 12.6 Qualification and competency requirements

According to IRATA International Qualifications, there are three levels (grades): Level 1, Level 2 and Level 3, the third level being the highest.

A rope access team consists of at least two rope access technicians, one of whom has to be a Level 3 rope access safety supervisor.

Other certifications like:

- CATC - Certificat de qualification professionnelle Agent Technique Cordiste, or
- CQP - certificat de qualification professionnelle de cordiste

can be also accepted.

### 12.7 Personnel Qualifications

#### 12.7.1 *Rope Access Technician/spotter*

To be considered competent, a rope access technician needs to have sufficient professional or technical training, knowledge, actual experience and authority to enable them to:

1. carry out their assigned duties at the level of responsibility allocated to them,
2. understand potential hazards related to the work under consideration and be able to carry out appropriate workmate rescue procedures,
3. detect technical defects or omissions in their work and equipment, recognize implications for health and safety caused by such defects or omissions, and be able to specify a remedial action to mitigate those implications.

Rope access technicians shall have adequate skill and experience to:

1. understand the limitations of their level of training regarding work practices,

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2. understand the various uses of the equipment they use and its limitations,
3. select and use equipment and PPEs correctly,
4. inspect their equipment,
5. maintain and store the equipment they use.

### *12.7.2 Level 1 workers*

This is a rope access technician who can perform a specified range of rope access tasks under the supervision of a Level 3 rope access safety supervisor.

To be classified as IRATA International Level 1 rope access technician, candidates have to undertake an IRATA International approved training course of a minimum of four days followed by a one-day assessment by an independent IRATA International assessor. Once the training course and assessment have been satisfactorily completed, the person may then be allowed to work using rope access techniques.

### *12.7.3 Level 2 workers*

This is an experienced rope access technician who has Level 1 skills plus more complex rigging, rescue and rope access skills, working under the supervision of a Level 3 rope access safety supervisor.

To be classified as IRATA Level 2 rope access technician, the Level 1 technicians have to log at least 1 000 working hours using rope access techniques and have worked for a minimum of one year at Level 1. They have then to undergo a minimum of four days further training followed by an assessment by an independent IRATA International assessor.

### *12.7.4 Level 3 workers*

This is a rope access technician who can demonstrate the skills and knowledge required of Levels 1 and 2; is conversant with relevant work techniques and legislation; has an extensive knowledge of advanced rigging and rescue techniques; holds an appropriate and current first aid certificate and has knowledge of the IRATA International training, assessment and certification scheme. He/she can be a rope access safety supervisor with responsibility for rope access safety.

To be classified as IRATA Level 3, a rope access technician shall work a minimum of one year as Level 2 and at least a further 1 000 working hours using rope access techniques have to be logged. A minimum of four days of further training followed by an assessment by an independent IRATA International assessor are required.

It is the Contractor responsibility to ensure that Level 3s are competent to supervise.

The L3 worker is also responsible for the respect of the cleanliness and FME protocol.

### *12.7.5 Rope Access Managers*

Rope access managers are responsible for defining, planning, implementing and reviewing the operation of a safe system of work. They shall have:

1. competence and experience for the work being managed,
2. the ability to communicate requirements to rope access safety supervisors,



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3. the ability to create, implement and review control systems, and be able to assess which control measures are appropriate for each project,
4. the ability to ensure correct operation of the rope access management system.

Rope access managers have a duty to ensure that rope access safety supervisors and other rope access technicians are competent for the particular rope access task in hand.

The role of rope access manager and rope access safety supervisor might be carried out by the same person.

### *12.7.6 Rope Access Safety Supervisor*

The rope access safety supervisor's role is to ensure that the work and the workers proceed in accordance with the applicable code of practice, in the manner set out in the documentation for the work project and with the aim of no accidents, no waste and no defects (known as zero targeting).

Under the IRATA International scheme, only Level 3 rope access technicians are permitted to be rope access safety supervisor.

Alternative approved certification can be accepted under the condition of proven hierarchy and equivalence to the IRATA standards.

Rope access safety supervisors shall be:

1. competent in supervisory skills,
2. competent in rope access techniques appropriate to the particular worksite and shall understand the limitation of those techniques,
3. responsible for hazard identification and risk assessment for rope access related tasks,
4. competent in workmate rescue/retrieval techniques appropriate to each worksite and be able to organize and put into effect a workmate rescue/retrieval appropriate to that worksite.
5. are trained in first aid and are required to hold an in-date qualification.

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**13 Appendices - Equipment inspection checklist**

Considering the peculiarity of the works and the associated risk, this checklist represents a typical guideline for the contractor to ensure that that main aspects are being evaluated.

The checklist does not replace other documents required to perform the actives like a Permit to work (PTW) a PPSPS (Plan Particulier de Sécurité et de Protection de la Santé) or other applicable documents.

Equipment	Inspection procedure
<p>All equipment manufactured from man-made fibres</p>	<p>These general checks apply to all equipment manufactured from manmade fibres</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I have read the information supplied by the manufacturer</li> <li><input type="checkbox"/> The equipment is within the manufacturer's recommended lifespan</li> <li><input type="checkbox"/> The equipment has not been subjected to loads in excess of the manufacturer's limitations</li> <li><input type="checkbox"/> The equipment has not been reported as having arrested a fall Carry out a visual and/or tactile check for:                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Excessive wear to any part</li> <li><input type="checkbox"/> Abrasion, particularly to load-bearing parts</li> <li><input type="checkbox"/> Any abrasion protection intended to be fitted is in place</li> <li><input type="checkbox"/> Furry webbing or rope (This usually indicates abrasion)</li> <li><input type="checkbox"/> Stitching: abraded, broken or cut</li> <li><input type="checkbox"/> Cuts, particularly to load-bearing parts</li> <li><input type="checkbox"/> Dirty webbing or rope (Dirt accelerates abrasion, both externally and internally)</li> <li><input type="checkbox"/> Legibility of marking for identification</li> <li><input type="checkbox"/> Evidence of unauthorized modification</li> <li><input type="checkbox"/> Damage by chemicals, e.g.                                     <ul style="list-style-type: none"> <li><input type="checkbox"/> a powdery surface</li> <li><input type="checkbox"/> discolouration</li> <li><input type="checkbox"/> hardened areas all of which can signify chemical contamination</li> </ul> </li> <li><input type="checkbox"/> Damage by heat, e.g. glazed areas</li> </ul> </li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Equipment is beyond recommended lifespan: remove from service</li> <li><input type="checkbox"/> Equipment has been subjected to loads in excess of manufacturer's limitations: remove from service</li> <li><input type="checkbox"/> Equipment has been reported as having arrested a fall: remove from service</li> <li><input type="checkbox"/> Excessive wear to any part: remove from service</li> <li><input type="checkbox"/> Abrasion: if excessive, remove from service. A small amount of abrasion is permissible</li> <li><input type="checkbox"/> Intended abrasion protection is not in place: remove from service</li> <li><input type="checkbox"/> Stitching cut, broken or abraded: remove from service</li> <li><input type="checkbox"/> Cuts: remove from service</li> </ul>

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	<ul style="list-style-type: none"> <li><input type="checkbox"/> Dirty: clean according to the manufacturer's instructions</li> <li><input type="checkbox"/> Marking for identification is not legible: ensure legibility before allowing the product into service</li> <li><input type="checkbox"/> Evidence of unauthorized modification: remove from service</li> <li><input type="checkbox"/> Chemical contamination: remove from service</li> <li><input type="checkbox"/> Heat damage: remove from service</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
<p>Working lines and safety lines</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All equipment manufactured from man-made fibres</li> </ul> <p>Additionally:</p> <p>Carry out a visual check on:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Ends of anchor lines for excessive wear</li> <li><input type="checkbox"/> Inside and outside of any terminations, e.g. attachment-point loops, for wear</li> </ul> <p>Carry out a visual and tactile check:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> For contamination by grit, externally and internally, if possible</li> <li><input type="checkbox"/> For external and internal damage. On cable-laid ropes used as anchor lines (unusual), open up the lay and inspect as above. On kernmantle ropes, feel for unusually soft or hard areas, both on the sheath and the core. (This signifies damage.) Check particularly the ends of ropes</li> <li><input type="checkbox"/> That all knots are secure</li> <li><input type="checkbox"/> That knot overlaps are sufficient</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Excessive wear to any part of the anchor line: remove from service</li> <li><input type="checkbox"/> Excessive external and/or internal grit: clean in accordance with the manufacturer's instructions. If it is not possible to remove the grit, inspect the rope for damage by abrasion more frequently than normal</li> <li><input type="checkbox"/> Unusually soft or hard areas: remove from service. (Sometimes, the damage is only local, so damaged areas can be cut out.)</li> <li><input type="checkbox"/> Knots: if in doubt, remove from service. Knots may be retied by a competent person. Tension knots with body weight and ensure that there is sufficient overlap (minimum 100 mm). If the knots in an anchor line appear to be very tight, either retie the knots or replace the anchor line.</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
<p>Harnesses</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All equipment manufactured from man-made fibres</li> </ul> <p>Additionally:</p> <p>Carry out a visual and tactile check:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inside and outside any terminations, e.g. textile attachment-point loops, for all the points listed under the general checking procedure</li> <li><input type="checkbox"/> on fastening and adjustment buckles for:</li> <li><input type="checkbox"/> Correct assembly</li> </ul>

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	<ul style="list-style-type: none"> <li><input type="checkbox"/> Correct functioning</li> <li><input type="checkbox"/> Excessive wear</li> <li><input type="checkbox"/> Corrosion</li> <li><input type="checkbox"/> Cracks</li> <li><input type="checkbox"/> Other damage</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Textile terminations: treat in accordance with the general checking procedure</li> <li><input type="checkbox"/> Fastening and adjustment buckles, other safety critical metal or plastics components: <ul style="list-style-type: none"> <li><input type="checkbox"/> Incorrect assembly: correct assembly</li> <li><input type="checkbox"/> Incorrect functioning: remove from service</li> <li><input type="checkbox"/> Excessive wear: remove from service</li> <li><input type="checkbox"/> Corrosion: remove from service</li> <li><input type="checkbox"/> Cracks: remove from service</li> <li><input type="checkbox"/> Other damage: remove from service</li> </ul> </li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
Lanyards and slings	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All equipment manufactured from man-made fibres</li> </ul> <p>Additionally:</p> <p>Carry out a visual and tactile check:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Inside and outside any terminations, e.g. textile attachment-point loops, for all the points listed under the general checking procedure</li> <li><input type="checkbox"/> All knots for security</li> <li><input type="checkbox"/> That knot overlaps are sufficient</li> <li><input type="checkbox"/> That knots in anchor lanyards and device lanyards are not too tight (i.e. that they would still provide some energy absorption)</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Textile terminations: treat in accordance with the general checking procedure</li> <li><input type="checkbox"/> Knots: if in doubt, remove from service. Knots may be retied by a competent person. Tension knots with body weight and ensure that there is sufficient overlap (minimum 100 mm). If the knots in an anchor lanyard or device lanyard appear to be very tight, either retie the knots or replace the lanyard.</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
Energy absorbers	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All equipment manufactured from man-made fibres</li> </ul> <p>Additionally:</p> <p>Carry out a visual and tactile check:</p>

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	<ul style="list-style-type: none"> <li><input type="checkbox"/> Inside and outside any terminations, e.g. textile attachment-point loops, for all the points listed under the general checking procedure</li> <li><input type="checkbox"/> That there are no signs of any deployment (i.e. partial activation) of the energy absorber</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Textile terminations: treat in accordance with the general checking procedure</li> <li><input type="checkbox"/> Any sign of deployment: remove from service</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
<p>All metallic equipment</p>	<p>These general checks apply to all equipment manufactured from metal</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> I have read the information supplied by the manufacturer.</li> <li><input type="checkbox"/> The equipment is within the manufacturer's recommended lifespan.</li> <li><input type="checkbox"/> The equipment has not been subjected to loads in excess of the manufacturer's limitations</li> <li><input type="checkbox"/> The equipment has not been reported as having arrested a fall Carry out a visual and/or tactile check for:             <ul style="list-style-type: none"> <li><input type="checkbox"/> Build up of foreign matter, e.g. grit; grease; sealant; paint</li> <li><input type="checkbox"/> Wear, particularly to friction-inducing surfaces, e.g. bobbins, and wear indicators, where present</li> <li><input type="checkbox"/> Cuts</li> <li><input type="checkbox"/> Heavy marking or scoring and crazing of surface finish (crazing often indicates distortion)</li> <li><input type="checkbox"/> Burring</li> <li><input type="checkbox"/> Cracks</li> <li><input type="checkbox"/> Corrosion, e.g. rusting; stress corrosion cracking; galvanic corrosion</li> <li><input type="checkbox"/> Contamination by chemicals</li> <li><input type="checkbox"/> Deformation, e.g. twisted</li> <li><input type="checkbox"/> Evidence of unauthorized modification</li> </ul> </li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Equipment is beyond recommended lifespan: remove from service</li> <li><input type="checkbox"/> Equipment has been subjected to loads in excess of manufacturer's limitations: remove from service</li> <li><input type="checkbox"/> Equipment has been reported as having arrested a fall: remove from service</li> <li><input type="checkbox"/> Remove any foreign matter</li> <li><input type="checkbox"/> Excessive wear: remove from service. Some wear is permissible: refer to manufacturer's information</li> <li><input type="checkbox"/> Cuts, heavy burring, marking or scoring, crazing of surface finish: remove from service</li> <li><input type="checkbox"/> Cracks: remove from service</li> <li><input type="checkbox"/> Bad corrosion: remove from service</li> <li><input type="checkbox"/> Contamination by chemicals: remove from service</li> </ul>

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	<ul style="list-style-type: none"> <li><input type="checkbox"/> Deformation: remove from service</li> <li><input type="checkbox"/> Evidence of unauthorized modification: remove from service</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
Descending devices	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All metallic equipment</li> </ul> <p>Additionally:</p> <p>Carry out a visual and tactile check to ensure:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Moving parts function correctly, e.g. handles; locking devices; cams; springs; locking catches</li> <li><input type="checkbox"/> Hinge pins are in good condition</li> <li><input type="checkbox"/> Threaded assemblies are fully tightened and correctly secured</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Incorrect functioning: remove from service. If any moving parts do not function correctly, remove from service</li> <li><input type="checkbox"/> Hinge pins not in good condition: remove from service</li> <li><input type="checkbox"/> Threaded assemblies not properly tightened or are unable to be tightened if it is the intention that the user may do so: remove from service and correct the problem</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
Ascending devices / Backup devices	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All metallic equipment</li> </ul> <p>Additionally:</p> <p>Carry out a visual and tactile check to ensure:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Moving parts function correctly, e.g. cam; springs; locking catch</li> <li><input type="checkbox"/> There is no damage to cams, e.g. broken teeth</li> <li><input type="checkbox"/> Hinge pin is in good condition</li> <li><input type="checkbox"/> Threaded assemblies are fully tightened and correctly secured</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Incorrect functioning: remove from service. If any moving parts do not function correctly, remove from service</li> <li><input type="checkbox"/> Hinge pin not in good condition: remove from service</li> <li><input type="checkbox"/> Threaded assemblies not properly tightened or are unable to be tightened if it is the intention that the user may do so: remove from service and correct the problem.</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
Connectors	<p>Carry out all the appropriate general checks listed under the heading All metallic equipment</p> <p>Additionally:</p> <p>Carry out a visual and tactile check to ensure:</p>

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	<ul style="list-style-type: none"> <li><input type="checkbox"/> Moving parts function correctly, e.g. keeper locates in body correctly; spring returns the keeper correctly; keeper locking mechanism operates correctly (screw gate, twist-lock); any threaded parts run correctly</li> <li><input type="checkbox"/> Hinge pin is in good condition</li> <li><input type="checkbox"/> Catch pin is not bent</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Incorrect functioning: if any moving parts do not function correctly, remove from service</li> <li><input type="checkbox"/> Hinge pin not in good condition: remove from service</li> <li><input type="checkbox"/> Catch pin bent: remove from service</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
<p>Lanyards and slings made from metal, e.g. wire strops</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Carry out all the appropriate general checks listed under the heading All metallic equipment</li> </ul> <p>Additionally:</p> <p>Carry out a visual check for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Wear or damage to wire strands inside and outside the attachment point loops and that the attachment-point loop terminations are undamaged and secure</li> <li><input type="checkbox"/> Excessive wear to any other part, especially load-bearing parts, e.g. broken wire strands</li> </ul> <p>Carry out a visual and tactile check to ensure:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Any abrasion protection intended to be fitted is in place</li> <li><input type="checkbox"/> Any moving parts function correctly</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Wear or damage to wire strands inside and outside the attachment point loops: remove from service</li> <li><input type="checkbox"/> Excessive wear or damage to any other part: remove from service.</li> </ul> <p>Some wear is permissible: refer to manufacturer's information</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Any abrasion protection intended to be fitted is not in place or is damaged: remove from service</li> <li><input type="checkbox"/> Incorrect functioning: if any moving parts do not function correctly, remove from service.</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
<p>Helmets</p>	<ul style="list-style-type: none"> <li><input type="checkbox"/> I have read the information supplied by the manufacturer.</li> <li><input type="checkbox"/> The helmet is within the manufacturer's recommended lifespan.</li> <li><input type="checkbox"/> The helmet has not been subjected to loads in excess of the manufacturer's limitations</li> </ul> <p>Carry out a visual and tactile check for:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Cracks, deformation or other damage to the shell</li> <li><input type="checkbox"/> Damage to the cradle/chinstrap assembly</li> <li><input type="checkbox"/> Excessive wear to any part</li> <li><input type="checkbox"/> Evidence of unauthorized modification</li> </ul>

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	<p>Check that:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The chin strap adjusts fully and easily to achieve a correct fit</li> <li><input type="checkbox"/> The headband adjusts fully and easily to achieve a correct fit</li> <li><input type="checkbox"/> Labels, e.g. self-adhesive labels (‘stickers’), placed on helmets not by the manufacturer are in accordance with the helmet manufacturer’s instructions</li> </ul> <p>Actions:</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Helmet beyond recommended lifespan: remove from service</li> <li><input type="checkbox"/> Helmet has been subjected to loads in excess of manufacturer’s limitations: remove from service</li> <li><input type="checkbox"/> Any cracks, deformation or other damage, including scoring or cuts to the shell: remove from service</li> <li><input type="checkbox"/> Damage to the cradle/chinstrap assembly: remove from service</li> <li><input type="checkbox"/> Excessive wear to any part: remove from service</li> <li><input type="checkbox"/> Evidence of unauthorized modification: remove from service</li> <li><input type="checkbox"/> No chin strap, or chin strap does not adjust fully and easily: remove from service</li> <li><input type="checkbox"/> Headband does not adjust fully and easily: remove from service</li> <li><input type="checkbox"/> Headband adjustment does not stay in position: remove from service</li> <li><input type="checkbox"/> Labels placed on helmets that are not in accordance with the helmet manufacturer’s instructions: remove from service</li> </ul> <p><b>If in doubt on any point, remove from service</b></p>
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14 Post Job checklist (Draft)

Post Job Inspection	
Day:	Hour:
Team	1) 2) 3) 4) 5) 6)
Works performed:	
Tag(s):	
Checklist	
Any dropped object during the activities	Yes No
HSE & mangement were informed	Yes No
Were the items found	Yes No
Is the area clean	Yes No
Does the area require an intervention of the cleaning Contractor	Yes No
Working area was inspected at the end of the activities?	Yes No
All materials returned to the storage area inside the pit	Yes No
Internal Storage area was inspected at the end of the activity	Yes No
All materials returned to the storage area outside the pit	Yes No
External Storage area was inspected at the end of the activity	Yes No
Any material to be repaired	Yes No
List:	
Observations:	
Signature	