N25 ACCESS AND SAFETY EQUIPMENT SPECIFICATION CLAUSES

Fall Prevention Cable Systems

To be read with The Main Contract Preliminaries, General Conditions, Sub-Contract Preliminaries.

MINIMUM CONTRACTOR STANDARD

This equipment is highly specialised and the Tendering Sub-Contractor must provide the following information with the Tender – failure to provide this information will disqualify the Tenderer;

- Evidence of sub contractor's **Professional Indemnity Insurance**, €6.5 million minimum. Professional Indemnity Insurance provided by third parties will not suffice.
- Evidence of **ISO9001 & OHSAS 18001** Quality Systems Accreditation.
- The name of the **Health & Safety Manager** within the organisation and evidence of qualifications.
- Confirmation that the Tenderer's **Cable Support Posts** are strictly as per **Clause 210** below – i.e. posts are one piece with no internal force management system.
- Confirmation that the Tendering company has been in the fall prevention industry for at least 10 years.

On request of the architect / design team the Tenderer must forward confirmation of the following:

- Employers Liability Insurance to €13m.
- Public Liability Insurance to €13m.
- Products Liability Insurance to €13m.
- Appropriate Professional Indemnity Insurance to €6.5m as above.
- Three years audited accounts.
- Membership of CIRI
- Membership of Irish Health and Safety associations like NISO, ISHA etc.
- Membership of an Irish based Trade Union.
- Membership of the CFOPS pension / CIF sick pay scheme.
- Names of the proposed installation crew and proof that they are trained as banksmen and have training in Work at Height, particularly Rescue from

Height.

- Name of company Safety Representative along with copies of their certification / qualifications.
- Name and qualifications of the company's FETAC Level 6 Trainer on staff to undertake handover training.
- Names of three projects of equal size completed in Ireland in the last 3 years along with contact names and numbers for reference checks.
- Contact names and telephone numbers for the facilities manager in charge of each of the above three projects, (to check that on-going maintenance contracts are in place and that the installations are fit-for-purpose).

4.01 Reference Documents

The schedule of references is not exhaustive and shall also be supplemented by those listed under each related work section. Note that where a standard comprises a number of parts, the latest issues and amendments of each part shall apply.

The Sub-contractor must comply with all relevant standards, etc. at the time of supply.

EN and B.S. Documents Referred to in this Section Include:

EN 795 1997 or 2012 Personal Protective Equipment against Falls from a Height -Anchor Devices - Requirements and Testing.

BS7883 2005: Application and Use of Anchor Devices Conforming to BS EN 795.

EN 354 2002: Personal Protective Equipment against Falls from a Height - Lanyards.

EN 355 2002: Personal Protective Equipment against Falls from a Height - Energy Absorbers.

EN 358 2000: Personal Protective Equipment against Falls from a Height - Work Positioning Systems.

EN 361 2002: Personal Protective Equipment against Falls from a Height - Full Body Harnesses.

EN 363 2008: Personal Protective Equipment against Falls from a Height - Fall Arrest Systems.

EN 365 2004: Personal Protective Equipment against Falls from a Height - General Requirements for Instructions for Use and for Marking.

BS8437 2005: Code of Practice for Selection, Use and Maintenance of Personal Fall Protection Systems and Equipment for use in the Workplace.

EN970 1997: Non-destructive Examination of Fusion Welds. Visual Examination.

HSA documents referred to in work section N25 are:

Health, Safety and Welfare at Work Act 2005 and Regulations as follows;

- Construction Regulations 2013
- General Applications Regulations 2007; Part 4 Working at Height.

4.02 RELATED WORK SECTIONS

X20: Fixings/adhesives

TYPE(S) OF SYSTEM/EQUIPMENT

210 GUIDED TYPE FALL PREVENTION SYSTEM FOR: PITCHED AND FLAT ROOF AREAS

- Drawing reference(s) see Architect's drawing # _____.
- Manufacturer Skyway Safe Access Equipment +353 469241771
- Anchorage device: 8mm Stainless steel cable.
- Overall system length: as sub-contractors design.
- Anti-Pendulum Anchors as required by the design to prevent swing-fall.
- Intermediate support spacing: as sub-contractors design.
- Accessories/other requirements: as subcontractors design.
- System to be installed in accordance with the BS 7883 and EN 795 by the system

manufacturer or a contractor approved by the system manufacturer.

- System must be continuous at all intermediate and corner brackets – users must not have to detach from the system to bypass brackets.

- Cable system to be supported on posts as below. Sub-contractor to prove the roof can take the loads from the posts. Posts may deform in the event of a fall but must not come apart – i.e. must be fully welded with no internal spring or other active force management mechanisms.

Note to specifier – please choose from the following roof types and delete others as appropriate

- **Composite Panel Roofs**; Stainless steel posts to attach to the top skin of composite roof panels.
- **Standing Seam Roofs;** Stainless steel posts to attach to the standing seams of roof panels/sheets with stainless steel, aluminium or plastic clamps.
- **Membrane on Insulation on Timber or Metal Deck;** Stainless steel posts to sit on top of finished roof membrane and attached to deck with stainless steel toggle bolts after the membrane is complete. Weathering by others.
- **Concrete Roofs;** Galvansied posts attached to the concrete with chemical type anchors.
- **Slate or Tiled Roofs;** Stainless steel posts fixed to timber rafters beneath using stainless clamp brackets and M12 Stainless bolts. Weathering by others
- **Wall mounted** fixings must be stainless steel and in strict accordance with the details provided.

215 DESIGN / LAYOUT OF SYSTEMS:

- The Tenderer's submission must allow for 100% safe access to all roof areas unless strictly specified otherwise by the Client.

- The Tenderer must, if necessary, advise that equipment is required in areas where the architect or design team may have missed potentially hazardous areas.

- Furthermore, the Tenderer must highlight on a drawing or in writing any areas of the roof that are not covered by the Tenderer's design with a reason why these areas are not included.

- AutoCAD Drawings must be submitted to the design team for approval. However, note that the architect is not an approving authority. The architect may comment on drawings as submitted for approval but it

remains the responsibility of the Tenderer to meet the design requirements of all Health & Safety Regulations and Standards as listed above.

220 TESTING OF CABLE SYSTEMS

- Tenderer to provide a copy of their in-house policies and procedures document on proof testing of the swage joints on site using Hydrajaws Cable Test Equipment.

- No less than 8 swages or a minimum of 50% of all swages, which ever is greater, including splices must be proof tested on site to 10kN.

- At least one test must be witnessed by the contractor / client.

225 PERSONAL FALL PROTECTION EQUIPMENT (PFPE)

- Unless specified otherwise in the Bill of Quantities supply the following for storage on site and used by trained personnel only:
  - 2 Skyway Full Body Harness
  - 2 Skyway Standard 2m shock absorbing lanyards
  - 2 Skyway 10m Rope & Grabs
  - 2 Skyway Cable Shuttles.
  - Accessories/Other requirements: as per Bill of Quantities Description.

Note all PFPE must be CE marked – however CE marking does not apply to the elements fixed to the building (posts, cables etc).

310 INFORMATION TO BE PROVIDED WITH TENDER

Submit the following:

- General arrangements drawing(s) at suitable scales showing the proposed layout of access/safety equipment.

- Proposed details of all necessary fixings and abutments with the building fabric.

- Location, direction and magnitude of all significant loads imposed on the building structure/fabric by the equipment.

- Schedule of builder's work, with drawings as necessary, showing extent and details of all work associated with the installation for which the equipment manufacturer/supplier is not contractually responsible.

- Schedule of special provisions and special attendances by others.

- Confirmation that 100% of the roof areas are covered – if this is not the case the reasons why must be highlighted. Refer to Clause 215 above. No extra work/variations will be entertained by the client/design team at a later stage.

320 INFORMATION TO BE PROVIDED AFTER ACCEPTANCE OF TENDER:

Detailed AutoCAD drawings to fully describe fabrication and installation as follows:

Drawing content:

- Contractor's name and contact number.
- If third party manufacturers are used provide their name along with model numbers of equipment proposed.
- General arrangement of the complete installation.
- Detailed description on how initial access to the roof is achieved.
- Restricted areas/ other areas not covered by the design and reasons why.
- Proposed details on how each element (posts etc) are attached to the building.
- Full Design Notes with design loads (as applied to the building), notes on use, installation and certification of the systems.

DESIGN/ PERFORMANCE REQUIREMENTS

420 WIND LOADING

- General: Design the access/ safety system to withstand specified wind loads with equipment in position of maximum exposure and in parked position.
- Wind loads: Severe.

430 FINISHING

- General: The equipment as installed must have no irregularities/ projections capable of inflicting personal injury.
- Finished surfaces and edges of all accessible parts: Regular and smooth.

440 DESIGN LIFE/ MAINTENANCE PROGRAMME

- Design life of access/ safety system: Not less than 30 years.
- Schedule for maintenance and for replacement of components: Submit.

460 ASSESSMENT/ TESTING OF FIXING POINTS FOR ANCHOR DEVICES

- Design and installation of fixings in steelwork or timber: Verified by calculation to be capable of sustaining the relevant static and dynamic test forces specified in BS EN 795, clause 4.3.
- Fixings in other materials: Verify suitability by carrying out a test in a sample of the material. The sample must be capable of sustaining the relevant static and dynamic test forces specified in BS EN 795, clause 4.3. Thereafter, each structural anchor installed in that material must be subjected to an axial pull out force of 6 kN to confirm the soundness of the fixing. The structural anchor must sustain the force for a minimum of 15 seconds.

FABRICATION, ASSEMBLY AND INSTALLATION

510 FABRICATION AND ASSEMBLY GENERALLY

- Machine cutting, drilling and assembly: Carry out as much as possible in the workshop. Obtain approval for any reassembly on site.
- Dissimilar metal surfaces of assembly components/ supports/ fixings: Isolate to prevent electrolytic or bi-metallic corrosion.

520 PROTECTION

- General: Do not deliver to site any components or assemblies that cannot be installed immediately or unloaded into a suitable well protected storage area.

530 SUITABILITY OF STRUCTURE/ FABRIC

- Visual, geometric and structural survey of supporting structure and fabric: Carry out before commencing installation of access/ safety system. Report immediately if structure/ fabric will not allow required accuracy or structural adequacy or security of fixing.

540 MECHANICAL FIXINGS

- Materials: Unless otherwise recommended by equipment manufacturer:
  - Connecting bolts and other fixings fully accessible for inspection: Mild steel hot dip galvanized to BS 7371-6.
    Nuts: Tapped after galvanizing.
  - Cast-in anchors and other fixings not accessible for routine inspection: Zinc plated or austenitic stainless steel, grade 1.4401 (316) to BS EN 10088-1.

560 FIXINGS FOR SECURING EQUIPMENT

- Adjustment capability: Adequate three dimensional adjustments to accommodate building structure/ fabric irregularities.

570 FIXING ANCHOR INSTALLATION

- Site drilling or cutting into structure/ fabric: Permitted only in approved locations.
- Distance between all fixing devices and edges of supporting material: Not less than recommended by fixing manufacturer.

610 IDENTIFICATION AND REGISTRATION LABELS FOR FALL PREVENTION SYSTEMS

- Provision: Provide and fix to each piece of equipment a permanent label giving:
    - Manufacturer's name, address and telephone number.
    - Name and/ or reference code of installation/project.
    - Maximum number of users that may be sustained by the equipment.
    - Confirmation if Fall Arrest or Fall Restraint system.
    - Name of certifying engineer and date of certification.
    - Indicate restriction of use by pictogram or other suitable marking.
    - Any other special features or restrictions.
- Location: In positions such that labels can be easily read prior to attachment to the system.

810 SERVICE/ MAINTENANCE OF FALL PREVENTION SYSTEM

- General: Following acceptance of the completed installation, service and maintain the equipment for the period stated below as and at intervals recommended by the manufacturer. Such maintenance to include a 'call-out' service during normal working hours to maintain the equipment in an acceptable and safe condition.
- Service/ Maintenance period: As recommended by manufacturer but not more than 12 months between certification visits.

820 OPERATING INSTRUCTIONS

- Equipment and accessories: Where appropriate, mark in such a way that it is possible to identify the correct mode of operation for their safe use.

830 OPERATING AND MAINTENANCE MANUAL (SAFETY FILE)

- General: Before Completion provide, for inclusion in the Building Manual/Safety File, printed instructions and recommended procedures to be established by the Employer for operating and routinely maintaining the equipment. Provide diagrams where appropriate.

- Content:
    - As-built drawings as per clause 840 below.
    - Instructions for pre-use inspections and attachment to equipment.
    - Comprehensive operating/use instructions, including training required and safety/emergency procedures.
    - Certificates showing that all equipment is certified to governing standards and is fit for use.
    - Servicing and planned maintenance procedures, including assembly instructions where maintenance necessitates dismantling of parts.
    - List of replacement parts, with references if necessary.
    - Recommended procedures for testing / recertifying equipment.

840 AS BUILT DRAWINGS

- General: After commissioning/testing of the equipment and before Completion provide As-Built drawings for inclusion in the Safety File - Number of sets: 2.

Drawing content:

- Contractor's name and contact number.
- Date of Certification/As-Built.
- Equipment Manufacturer's name, model and type numbers.
- General arrangement of the complete installation.
- Detailed description on how initial access to the roof is achieved.

- Restricted areas/ other areas not covered by the design.
- Accurate details on how each element (posts etc) are attached to the building.
- Full Design Notes with design loads (as applied to the building), notes on use, installation and certification of the systems.

851 TRAINING

Allow for one free training session for the client / facility manager / building owner as follows:

- Company to have at least one FETAC Level 6 Trainer on staff to oversee training.
- Training plan to be submitted to the client for approval prior to training session.
- Training to include initial class room session on the correct storage, inspection and use of PFPE (harnesses etc).
- All trainees to demonstrate competency in the use of PFPE before going out on the roof.
- All trainees to be shown how to use the fixed equipment on the roof and demonstrate competency in use of same.
- Training to be assessed by the trainer using standard bank of questions and feedback forms.
- Training certificates to be issued within 24 hours of completion of training.

End of Section