

N25 ACCESS AND SAFETY EQUIPMENT SPECIFICATION CLAUSES

Suspended Access Systems or Building Maintenance Units (BMU's)

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. The policy must clearly describe that the sub-contractor is covered for the design of Suspended Access Equipment.
- 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 Tendering company has been in the Suspended Access industry in Ireland 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 two 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 two projects, (to check that on-going maintenance contracts are in place and that the installations are fit-for-purpose).

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

EN 1808: Suspended Access Equipment

BS6037 2003 Code of Practice for the planning, design, installation and use of permanently installed access equipment.

EuroCodes 0 to 4 Structural Steel in Building.

BS729 Hot Dip Galvanise Coatings on Iron and Steel Structures.

HSA documents relevant to 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.
- Code of Practice for Roof Work II, 2011.

4.02 RELATED WORK SECTIONS

X20: Fixings/adhesives

TYPE(S) OF BUILDING MAINTENANCE UNIT (BMU)

(DELETE CLAUSES AS APPROPRIATE)

110 PERMANENT ATRIUM ACCESS SYSTEM – INTERIOR GANTRY & POWER CRADLE

- Drawing references(s) see architects drawing # _____, & Skyway drawing # _____.
- Designed manufactured and installed generally to EN 1808 and BS 6037.
- Manufacturer : Skyway Safe Access Equipment Ltd (046) 9241771 or equivalent.
- Construction: Fabricated from mild steel sections, shot blasted, zinc sprayed and painted for protection. All other items are suitably protected against corrosion and electrolytic actions (if exposed to corrosive conditions).
- Movement: powered along the track, powered left and right, cradle powered up and down.
- Power Supply – Buss bar by subcontractor attached to building power supply system by the Project Electrical Contractor. All else by subcontractor.
- Power Supply: 380/440v.3ph.50Hz.16 amp.
- Technical Data : Safe working load 240 kg in the cradle.
- Rate of traverse / hoisting /lowering : 8m/min
- Track System : Twin CHS,RHS,UB or PFC track – finish galvanised, zinc coated or painted to architects specification. Fixed back to main structure as per architect/structural engineer’s details.
- Carrying capacity: 2 persons.
- Maximum vertical distance: 40m.
- Provide at least one safety harness attachment point per person.
- Cradle System parking location by the design team – provide for long pendant controller for initial access to cradle.

111 PERMANENT SUSPENDED ACCESS SYSTEM – MONORAIL & CRADLE.

- Drawing references(s) see architects drawing # _____, & Skyway drawing # _____.
- Designed manufactured and installed generally to BS EN 1808 and BS 6037.
- Manufacturer : Skyway Safe Access Equipment Ltd (046) 9241771 or equivalent.
- Type: Skyway aluminium or steel monorail system with zinc plated trolleys c/w end stops, continuous splice joints and all necessary hardware.
- Include for all monorail supports and connections back to the main structural steel or concrete structure.

- Mode of operation: Electrically powered up and down, manual traversing.
- Power Supply: 380/440v.3ph.50Hz.16 amp.
- Technical Data : Safe working load 240 kg in the cradle.
- Rate of traverse / hoisting /lowering : 8m/min
- Maximum vertical distance 40m.
- Carrying capacity: 2 persons.
- Provide at least one safety harness attachment point per person.
- Provide a PVC Type cover for the cradle.

112 PERMANENT SUSPENDED ACCESS SYSTEM – TROLLEY & CRADLE.

- Drawing references(s) see architects drawing # _____, & Skyway drawing # _____.
- Designed manufactured and installed generally to BS EN 1808 and BS 6037.
- Manufacturer : Skyway Safe Access Equipment Ltd (046) 9241771 or equivalent
- Type: Fully powered counterweighted steel trolley and cradle system.
- Tracks: Galvanised steel track with 4-bolt (stainless steel) holding down units supplied to the main contractor for casting into concrete plinths. Weathering of the plinths by the main contractor.
- Machine finish. Shot blast, zinc spray & paint.
- Mode of Operation: Fully powered up & down and traversing.
- Slew : = 360 degrees.
- Reach: _____m maximum.
- Power Supply: 380/440v.3ph.50Hz.16 amp.
- Safe working load in cradle – 250kg.
- Machine clearance required on roof as measured from roof edge – 2500mm.
- Maximum vertical distance: _____m.
- Carrying capacity: 2 persons. Provide at least one safety harness attachment point per person.
- All corners to be radius type – no turntables permitted.
- Provide a PVC type cover for the cradle.

215 DESIGN / LAYOUT OF SYSTEMS:

- The Tenderer's submission must allow for 100% safe access to all façade areas including atrium glass, features such as lights, smoke vents, services etc 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 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 BMU SYSTEMS

- Tenderer to provide a copy of their in-house policies and procedures document on proof testing of the BMU systems prior to delivery and post installation.
- All machines to be load tested prior to delivery to 125% of the SWL.
- All machines to be load tested to 110% of the SWL over the full length of the track / monorail prior to first use.
- 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
 - 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 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 suspended access system is achieved.
- Restricted areas/ other areas not covered by the design and reasons why.
- Proposed details on how each element (track, plinths 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 onto steelwork: Verified by calculation to be capable of sustaining the relevant static and dynamic test forces specified in EN1808 and BS6037.
- Fixings on concrete roofs – trolley & cradle machines: Stainless Steel Holding Down Units (HDU's) supplied by the sub-contractor and cast into concrete plinths by others.
- Provide loads, as above, to project structural engineer so that the building structure can be designed to suit.

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: 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 SUSPENDED ACCESS 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 supported by the equipment and the SWL.
 - 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 rigging.

810 SERVICE/ MAINTENANCE OF BMU SYSTEMS

- 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 6 months between certification visits and 12 months between full load tests.

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 anchor points in the equipment.
 - Comprehensive operating/use instructions, including training required and safety/emergency and rescue 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 system is achieved.
- Restricted areas/ other areas not covered by the design.
- Accurate details on how each element (plinths 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 using the equipment.
- All trainees to be shown how to use the equipment 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