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**Policies, Procedures & Principles**

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|  | **SMS 6.13.2 Work at Height;** **Roof Access and Work on Roofs**  |

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| **Title**  |

**Work at Height; Roof Access and Work on Roofs**

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| **Summary** |

The document provides guidance specific to work on roofs but is not exhaustive and does not

dictate a particular roof work method.

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| **Reference Number** |

MS 6.13.2

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| **Linked documents** |
| **Internal** |
| SMS 6.13.1 Working at Height |
| SMS 6.13.3 Work at Height; Safety Harnesses and Associated Equipment |
| SMS 6.13.4 Work at Height; Safe use of Ladders |
| SMS 6.13.5 Mobile Elevated Work Platforms |
| SMS 6.7.1 Management of Asbestos |
| **External** |
| The Work at Height Regulations 2005 |

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| **Document history** |
| **Version** | **Date** | **Comment** |
| 1.0  | 10/01/13 | New SSI UK Document |
| 2.0 | 13/02/18 | Changes reflect the new ownership of the Teesside site from SSI UK to South Tees Site Company Ltd.Task owner now responsible for giving third parties a hazard id sheet via the Work Request form..Daily Permits to work are now signed by safe working party leader, STSC Task Owner & the Site shift Manager. |
| 2.1 | 23/05/2018 | Introduction of a pre inspection report for roof permit issue and to pass on information to third parties in a written format.Combine documents SMS 6.13.3 Work at Height; Roof Access/Roof Work and SMS 6.13.3A (Guidance for work at roofs and structures. |

**1. Introduction**

**1.1 General**

Most of the flat roofs within the Teesside site are found on offices, amenities and other substantial brick and concrete buildings such as substations. These roofs are usually strongly constructed and safe to work on and the main danger is that of falling from an unprotected edge.

However there are other roofs types both inside and outside plant buildings that are constructed from lighter materials which could deteriorate and become fragile such as steel cladding or those which are either not designed to be load bearing such as Filon, asbestos roofs, or those with fragile parts to them i.e. GPR or glass skylights, vents etc.

Roof work and work at heights has consistently given rise to a substantial number of fatal and serious accidents each year. The causes of roof work accidents and preventative measures are widely known and publicised.

Working at height and on roofs therefore requires careful planning and controls to protect those working at height and those who could be affected by their actions. The main safety considerations are; fall of person(s) from height and fall of object from height.

**1.2 Statutory Requirements**

The Company has a statutory obligation to make proper provision for the Safety, Health & Welfare of all persons employed by them and also a responsibility for Contractors under Section 3 of the H.A.S.A.W.A. the Work at Heights Regulation 2005, Provision of Work Equipment Regulation 1998 and other such legislation as noted in section 7.

Any work concerned with the construction or structural alteration of any building, the repair or maintenance of a building (including repainting, redecorating and external cleaning) is classed as a building operation and subject to the Construction Regulations.

In the final analysis, these obligations are vested in line management who have responsibilities for the safety of their plant and employees.

**1.3 Work at Height Regulations 2005 (amended 2007) – Relevant information**



**Fragile surfaces**

**Regulation 9 (Work at Heights Regulation 2005)**

*(1) Every employer shall ensure that no person at work passes across or near, or works on, from or near, a fragile surface where it is reasonably practicable to carry out work safely and under appropriate ergonomic conditions without his doing so.*

*(2) Where it is not reasonably practicable to carry out work safely and under appropriate ergonomic conditions without passing across or near, or working on, from or near, a fragile surface, every employer shall:*

*(a) ensure, so far as is reasonably practicable, that suitable and sufficient platforms, coverings, guard rails or similar means of support or protection are provided and used so that any foreseeable loading is supported by such supports or borne by such protection;*

*(b) where a risk of a person at work falling remains despite the measures taken under the preceding provisions of this regulation, take suitable and sufficient measures to minimize the distances and consequences of his fall.*

*(3) Where any person at work may pass across or near, or work on, from or near, a fragile surface, every employer shall ensure that:*

*(a) prominent warning notices are so far as is reasonably practicable affixed at the approach to the place where the fragile surface is situated; or*

*(b) where that is not reasonably practicable, such persons are made aware of it by other means.*

*(4) Paragraph (3) shall not apply where members of the police, fire, ambulance or other emergency services are acting in an emergency.*

***Inspection of places of work at height***

*Every employer shall so far as is reasonably practicable ensure that the surface and every parapet, permanent rail or other such fall protection measure of every place of work at height are checked on each occasion before the place is used.*

**1.4 Definitions**

* **Work at height** - Work in any place, including a place at or below ground level, where, if measures required by the Work at Height Regulations 2005 were not taken, a person could fall a distance liable to cause personal injury.
* **Fragile** - A surface which would be liable to fail, if any reasonably foreseeable load was to be applied to it.
* **Sloping roof** - over 10 degrees of pitch
* **STSC** – South Tees Site Company Limited

**1.5 Competent person(s)**

**Inspection** – Person(s) with sufficient knowledge and training, preferably with a structural background; to assess the condition of the roof material, roof support structure, access routes, guardrails and other associated roof components.

**Pre inspection** – Person(s) with sufficient knowledge and training, preferably with a structural background and preferably the person responsible for the annual structural inspection of that particular roof.

**Roof permit issuer** – Person(s) authorised by the STSC Works Engineer or Deputy, to be the designated roof owner who should be familiar with the layout and construction of the roof and should liaise closely with the person who has completed the pre-work inspection. This is essential to provide accurate information and conditions to be placed on the roof permit.

**1.6 STSC Policy for Working at Height and on Roofs**

All work at height shall be carried out in strict compliance with the relevant legislation including the Work at Height Regulations 2005.

Working at height should only be carried out if there is no other, safer more practical way of carrying out the work without placing personnel at height.

Those responsible for the control of persons working at height will ensure that all work is carefully planned and that a suitable and sufficient risk assessment is carried out to identifyall hazards associated with working at height and that the risks are suitably controlled or eliminated (see risk assessment section below).

All personnel working at height shall be supervised by a safe working party leader and will have undertaken suitable training in the use of any safety equipment associated with the work tasks.

All work at heights shall be controlled by a STSC Daily Permit to Work System and if the work is on roofing an additional Roof permit is required (unless stated otherwise by the designated roof owner).

Additional Permits may include one or more of the following;

* Hot Work
* Confined space
* Crane Standing Orders

Roof inspections carried out by competent personnel for the purpose of completing the annual inspection or a pre inspection as part of the requirements of a roof permit; require only that a Daily Work Permit be issued.

Where equipment is used to arrest a fall (safety harness, safety nets, etc) or a fall from height risk exists requiring medical aid; provisions must be in place to provide emergency and rescue from height.

All access/egress routes, flooring, parapets, guardrails and work platforms should be inspected by competent, trained personnel prior to work commencing. Safety equipment used for height work, including any safety harnesses, lanyards, anchorage points, safety latch way systems, etc and lifting equipment should be inspected periodically and prior to use.

All fragile areas should be identified and suitable controls in place to prevent access or protect personnel from fall at height. Provisions should also be in place to prevent accidental fall of objects from height including the use of chutes, look out men and barriers at ground level to cordon of the area.

Weather conditions which could endanger personnel should be considered including intense sunshine, rain, ice, wind speeds and lighting strike risks. Weather conditions should be checked prior and during the height work and work postponed if conditions become unsafe.

Considerations should include;

* Wind speeds in excess of 23 MPH will need to be risk assessed at the actual location, to determine if this poses a risk to personnel at height including those working below who may be affected by the actions.
* Ice – Refrain from accessing ladders and roof areas
* Lightening risk – Level 1 (High to Very High risk) do not access high structures
	+ - * Level 2 (Med to High risk) only access in Emergency
			* Levels 3-5 (Very Low to Low risk) acceptable

**Infrequent access**

Where necessary man load bearing covers should be provided to make walkways safe and personnel instructed to use only these paths as access to their work. Where people use a valley or parapet gutter as a means of access and the adjacent roof is covered with fragile materials, means should be taken to prevent a person falling through the fragile material.

Valley gutters which are overhung by roof sheets to such an extent; that there is inadequate clearance to allow personnel to walk without the risk of stepping on to the sheeting must not be used for access along the roof.

**Frequent access**

Flat roofs which are used frequently for access or as a working platform, and where there is a danger of falling from the edge; must be provided, where reasonably practicable, with permanent guard-rails as edge protection. If permanent guard-rails are not considered reasonably practicable other means such as temporary scaffold barriers etc must be provided to ensure the safety of personnel.

**Warning notices/signs**

Permanent notices warning of fragile materials must be affixed to all roofs that are not safe to walk on. Roof lights can be an unseen danger when they are discoloured by dirt, age, moss or algae, making them undistinguishable from the solid roof. They must at all times be clearly identified by signs and detailed on Roof Plans.

**Fragile Roofs**

When working on fragile roofs or roofs containing fragile panels or skylights, it is essential that the fragile parts are identified and suitable precautions taken. Roof coverings can give false sense of security for those who are working on or passing over them. Such coverings may support a distributed load, but not carry the point loading such as that applied by the heel of a man walking or wheelbarrows.

**Asbestos roof materials**

See – ‘SMS 6.7.1 Management of Asbestos’ for further guidance.

**Edge Protection**

When accessing or working in close proximity (within 2m) to an open edge, appropriate guardrails and toe boards should be provided at the edge of a flat roof or opening in a roof. If an opening is covered as an alternative precaution, it is essential that the covering should be constructed so as to prevent personnel or materials falling through and either securely fixed in position, or clearly and boldly marked to show its purpose.

Where guardrails are not practicable a suitable fall restraint system should be employed (tight wire/rail lock system) with access restricted to those personnel trained in the safe use of the employed systems.

On large roofs it may be more practicable to designated boundaries which identify and established the safe work areas and or access/egress routes to and from them.

If employed the following should be in place:

* Boundary should be at least 2m from the open edge or fragile material
* Boundary does not need to comply with full edge protection standards, but there should be a physical barrier
* A painted line or bunting is not acceptable unless a safety look out is employed at all times during the work.
* All persons are fully safety briefed and given all relevant safety information.

**Sloping Roofs**

On all sloping roofs ladders are essential. On those covered by fragile materials at least two ladders or crawling boards are required so that personnel will have one ladder to stand on while moving the other to a new position. Roof ladders should be regularly inspected and be of sound construction and adequate strength to support personnel when spanning across the supports for the roof covering and be secured or placed to prevent movement. Eaves gutters should not be used as a footing for roof ladders (point loading).

Any ladder anchorage at the top of a roof should be secured by some method which does not depend on the ridge capping.

**Safety Harnesses**

The wearing of safety harnesses should only be employed as a last resort, however where there remains a risk of personnel falling from height or there is a requirement to prevent a person reaching a fragile area or open edge, a safety harness should be utilised.

Safety harnesses should be inspected periodically by competent trained personnel and by the wearer prior to use.

Harnesses used must be to the relevant British Standard. All personnel must be trained in the use of safety harnesses

Planning of roof work must include the provision of anchorage points and safety harness certificates (if fall arrest) to ensure only appropriate anchorage points are used.

**Stacking of Materials**

If it is necessary to stack materials on a roof, the weight of the material should be limited to the amount the structure will carry safely. Sheets should be lashed down to prevent being blown away. All materials dismantled must be stacked and secured until such time as it can be lowered to the ground.

**Precautions to Prevent Injury to People Below**

Work on a roof will not commence until the area below is clear of personnel. A lookout person will be posted or all access to the area below will be hard barriered off and warning notices positioned where required.

The use of bunting can only be used, where a lookout person is present.

All materials must be lowered in a controlled way. Materials must not be thrown down during or subsequent to dismantling. The area at ground level being used must be barriered or a look out man posted.

**Weather Conditions**

Adverse weather conditions need to be anticipated and suitable precautions planned.

Avoid excessive exposure to sunlight.

**Burning/Welding**

All work activities which generate heat or sparks (welding, burning, grinding etc) on roofs will require a ‘Hot Work Risk Assessment’.

No burning or welding operations should be carried out on any roof which is constructed of combustible material or has a bituminous content or lining.

**Cat Ladders**

Cat ladders must only be used when there is continuous support from the sheeting. Their use should be restricted for access and as a place of work for removing and replacing fastenings in sheeting. ‘Youngman’s’ boards or pole ladders are to be used as walkways when carrying sheets up and down roofs.

**Electrical Cables or Service Pipelines**

Prior to work commencing, a survey of the working area including both sides of the sheeting line or roof will be conducted by STSC Ltd personnel to clearly identify service lines and electrical cables which could be affected by the work.

All service lines and electrical cables will be pointed out to the Working Party Leader undertaking the work who must confirm that he/she clearly understands the nature of the service and its location.

Any Permit to Work must specify the necessary precautions to be carried out by the Working Party and what isolations are necessary.

Where work involves the piercing of sheets by hand or mechanical means, a safety watcher must be present to ensure that the piercing medium is well clear of electric cables or service pipe lines. Effective communications must be established.

NB. When piercing holes within 1 metre of live electrical cables or service lines, the piercing medium must be an electric drill fitted with a penetration limiting device.

All electric cables and piped services must be assumed ‘live’ unless otherwise specified on the Roof Permit. In the event of encountering electrical cables or service lines not specified on the Permit, stop work immediately and consult the Permit Issuer.

**Weather Damage**

Openings created in roofs can expose electrical equipment to the effects of weather. Due account should be made of this in respect of protection or sequence of work.

**Gas/Fume**

Hazards of Gas or Fume which could affect personnel working on roofs should be assessed and the appropriate precautions taken (i.e. Co Monitors etc).

Wind direction and climatic conditions can be a major factor in determining risk from gas or fume.

**2. Access and Maintenance/Repair of Roofs**

STSC will have:

1. A designated roof permit issuer(s) who will be responsible for the control of all accesses, routine inspections, pre inspection and roof permit issue.
2. A designated Task Owner for any work on roofs including; cleaning, roof repairs, sheeting installation and or removal and maintenance of gutters.

The permit issuer must authorise all roof work and ensure all personnel who work on roofs are conversant with Safe Systems of Work and legal requirements.

All roof accesses should be fitted with locked doors, the keys to be held in the Site shift Managers office.

Roofs should be examined by a competent person within the schedule time of the inspection routine and all detailed findings should be recorded and updated on the roof or pre inspection report which should then be referred to when roof work is being planned/scoped.

A copy of the pre inspection report must be given to third parties when a roof permit is issued.

A pre-requisite of roof work is that it should only be undertaken by people who have the resources, knowledge and experience to do the job, in the planning and execution of the job a Safe System must be established, taking into account the type of equipment, the experience of the workmen and the level of supervision required and existing and forecast weather conditions.

When repair work is being undertaken a minimum of two men should be on the roof at any one time.

**2.1. Pre - Inspection**

A pre-inspection should be carried out and a pre inspection report created (see Appendix A) to identify what was or was not inspected, what part of the structure are deemed to be fragile and what parts appear to be safe to access. Components include; support structures, cladding, guard rails, access ladders, stair ways, and flooring (gutter walkways and parapets).

All identified hazards associated with the access route and specific work areas should be communicated via the pre inspection report and verbally to the designated roof owner.

A roof plan should be produced for large or complex roof areas (pre inspection report) indicating the main hazards, any fragile area or open edges and the agreed safe access route to the work area.

For fixed price contracts the pre inspection report should be sent to the third party to assist the contractor in the creation of a risk assessment, work method statement and safe working method statement.

**2.2 Permit to Work**

 All roof work should be subject to a properly authorised Roof Permit prepared by the designated person in charge of roofs and building structure. The Permit should not be issued until the roof and access route have first been inspected and safe means of access have been established complete with a suitable and sufficient risk assessment and safe working method statement.

Personnel issued with a Roof permits shall not be exempt from obtaining any other necessary Permits e.g. Crane Access Permit. Additional permits and certificates should be indicated on the Daily Permit to Work.

 All Daily Permits must be checked and signed by Site Shift Manager.

 **2.3 Systems of Work**

 A written Work Method Statement and Safety Method statement or Safe Working Procedure should be drawn up, giving detail of the sequence of operations and the precautions required. All personnel performing the work must follow the system. Personnel involved in the work should be thoroughly safety briefed. The safety precautions should be clearly explained and the method of working specified.

 **2.4 Personnel accessing roofs must:**

* Remain within the agreed area as defined on the roof permit, roof plan or as dictated by the roof permit issuer (including access and egress routes).
* Work to the agreed safe working method and instructions given on relevant STSC Daily Permit to Work.
* Only access roof areas whilst in the possession of a valid Roof Permit.
* Never walk on sloping roofs without lashed crawling boards, roof ladders
* Never walk on the purling line of sheeting.
* Never throw, drop or allow falling or slipping, any materials, sheets, tools, equipment, fastenings or fittings.
* Never leave any loose materials or equipment that could be blown off the roof. Any items that cannot be immediately removed should be safely secured.
* Never gain access to crane gantries without the appropriate crane permit issued
* Avoid point loading (storage of materials, using wheel barrows without spreader boards etc)
* Never walk directly on any unidentified or fragile roof material.
* Never use ladders on glass, Filon, GPR or translucent sheets without load spreader bars
* Never leave any holes on roofs unguarded.
* Never work alone on roofs, except for inspection purposes.
* On completion of the work, remove all materials and equipment.

**2.5 Permit issuers must:**

* Ensure that a pre-inspection complete with report of the roof work area including access/egress route has been carried out and communicated to the working party prior to work commencing.
* Identify all fragile areas, open edges, pipe/electric services, venting and any other hazards relevant to the work being carried out and communicate this information via a safety brief and by issue of a roof plan which should indicate the hazards and restricted access.
* Check and ensure that all persons accessing roof areas have a suitable and sufficient risk assessment and safe working method statement or procedure.
* Verify the weather conditions regarding lightning strike risk, wind speed, imminent rain or frost are within acceptable parameters prior to issuing the roof permit. (weather conditions should also be checked during the work if required)
* Ensure any interface between personnel working on the roof and personnel working below or nearby does not place either party at risk.
* On completion of all work, check to ensure that the work has been completed satisfactory and that the roof has been left in a safe condition.

**Appendix A – Pre roof inspection report template**



