



29 April 2016

Accident Advisory: Worker Fell Through Roof

Ref: [1516116](#), WSH Alert accident notification dated 10 March 2016

On 3 March 2016, at about 1615 hours, a worker fell through the roof of a workshop that was undergoing replacement of asbestos roof sheets and landed on the ground. He was pronounced dead by attending paramedics.



Photo of Accident Scene

Recommendations*

Occupiers and employers with similar activities in their workplaces are advised to consider the following risk control measures to prevent similar accidents:

Planning for Roof Works

- Ensure that a Fall Prevention Plan (“FPP”) is effectively developed and implemented when conducting roof works. A FPP for roof works should include but not limited to the following:
 - A policy for fall prevention
 - Responsibilities of relevant stakeholders
 - Risk assessment (“RA”)
 - Safe work method
 - Personal fall prevention equipment
 - Inspection and maintenance regime
 - Training
 - Incident investigations and emergency procedures
- Ensure that a proper safe work method is established for removing roofing sheets with consideration of the characteristics of the roof (e.g. the roof material, profile, slope and height) as well as the duration and frequency of work.

Permit-to-work (“PTW”) for Working at Heights

- Ensure that a PTW system should be implemented for every roof work activity where workers can potentially fall from a height of more than 3 metres.

Safe Roof Access and Egress

- If work on top of a roof is unavoidable, careful planning is required to provide safe and proper means (e.g. by erecting scaffold access) for workers to get to and exit from the rooftop work location
- For safer access and work on fragile roofs, the use of crawl boards and roof ladders should be deployed to prevent workers from stepping directly on the surface of the fragile roof.

Provision of secure anchorage point

- Ensure that secure anchorage points are provided for safety harnesses to be anchored to. The anchorage used must be able to at least support the forces generated by a fallen person.
- All lifeline anchors and anchor points must be assessed for suitability and security before use. Single point anchor devices (e.g. an eyebolt) and flexible horizontal lifeline systems should be installed and tested in accordance to SS 570: 2011 Personal protective equipment for protection against falls from height – Single point anchor devices and flexible horizontal lifeline systems.

Fall Protection

- Educate workers on the importance of anchoring their full body harness or travel restraint belt to a secure anchorage point or lifeline at all times when working at height. Where appropriate, consider the use of double lanyard harnesses and 100% tie-off where at least one lanyard is to be anchored to the lifeline at any time.
- If there is a risk of a worker falling through the roof, install a safety mesh or safety net (capable of preventing a person from falling through) either directly on top of or underneath the fragile roof area.

Management of Asbestos-Containing Materials (“ACM”)

- Ensure that a plan of work must be effectively developed and implemented when handling any ACM. The plan of work should include but not limited the following:
 - Scope of work
 - Location of asbestos related works
 - Particulars of persons involved
 - Method statement
 - Decontamination facilities
 - Decontamination procedures
 - Disposal arrangement
 - Monitoring of asbestos levels
 - Emergency procedures
- Ensure that asbestos-removal work is carried out by an approved asbestos-removal contractor and under the supervision of a competent person for asbestos-removal work.
- Ensure asbestos-removal work is completed before the commencement of other works in the area.

Risk Assessment

- Conduct a thorough RA for all work activities to manage any foreseeable risk that may arise in connection with working on roofs. The RA should cover all foreseeable risks and include the following:
 - Risk arising from working at heights
 - Risk arising from handling roof material e.g. asbestos roof sheets

Further Information

Workplace Safety and Health Act (Chapter 354A)
Workplace Safety and Health (Risk Management) Regulations
Workplace Safety and Health (General Provisions) Regulations
Workplace Safety and Health (Work at Heights) Regulations 2013
Workplace Safety and Health (Construction) Regulations 2007
Workplace Safety and Health (Asbestos) Regulations 2014
Code of Practice on Workplace Safety and Health Risk Management
Code of Practice for Working Safely at Heights
WSH Guidelines for Working Safely on Roofs
WSH Guidelines on Personal Protective Equipment for Work-At-Heights
WSH Guidelines on Anchorage, Lifelines and Temporary Edge Protective System
WSH Guidelines for Management and Removal of Asbestos
CP 79:1999 Code of Practice for Safety Management System for Construction Workers
CP 14: 1996 Code of Practice for Scaffolds
Singapore Standard 570: 2011 Personal protective equipment for protection against falls from height
– Single point anchor devices and flexible horizontal lifeline systems
Singapore Standard 528: 2006 (2014) Specification for personal fall-arrest systems
Part 1: Full-body harnesses
Part 2: Lanyards and energy absorbers
Part 3: Self-retracting lifelines
Part 4: Vertical rails and vertical lifelines incorporating a sliding-type fall arrester
Part 5: Connectors with self-closing and self-locking gates
Part 6: Systems performance tests
WSH Council's Activity Based Checklist for Working on Rooftops
WSH Council's Activity Based Checklist for Working Safely at Heights
UK Health and Safety Executive's "Health and Safety in Roof Work"

***Information on the accident is based on preliminary investigations by the Ministry of Manpower as at 28 March 2016. This may be subject to change as investigations are still on-going. Please note that the information provided here is not exhaustive and is for the benefit of enhancing workplace safety and health so that a recurrence may be prevented. The information provided is not to be construed as implying any liability to any party nor should it be taken to encapsulate all the responsibilities and obligations under the law.**

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