Shrink wrapping risk assessments and method statements

After carrying out shrink wrap installation jobs over many years we have identified a number of typical hazards / risks that are of particular significance to shrink wrapping scaffolding.

Note - this is not intended as a comprehensive guide to all risks and you should always carry out your own risk assessments and method statements relevant to the project you are working on.

Scaffold shrink wrapping - key hazards / risks

1. Risk - FIRE & HOT WORKS

Control measures
- CO₂ or Powder Fire Extinguishers will be available at hand or at designated vantage points adjacent to the work area.
- Prior to hot work, Rhino Shrinkwrap supervisor will obtain or issue a hot works permit as required.
- Hot work permit to be activated at the start of each shift as required.
- Hot work must cease at least 1 hour before end of shift, fire watch and thorough inspection to be of area to be observed.
- Hot work permit to be closed at the end of each shift as required.

2. Risk - LIQUID PROPANE GAS – STORAGE, TRANSPORTATION & HANDLING

Control measures
- All LPG bottles will be transported and stored upright and made secure at all times.
- Smallest practicable cylinder for carrying out task will be used. Only one days supply will be brought to work area.
- All operatives will be trained in the manual handling and transportation of LPG bottles and equipment. Where possible, gas cylinder trolleys will be used.
- A daily equipment check list will be used at the start and end of each daily shift. This includes a check on all fittings, threads, hoses, gun valves etc. to ensure safe operation of the equipment.
- All LPG bottles will be clearly identified / labelled and stored in well ventilated areas.
- LPG bottles to be kept clear of access and egress routes.
- LPG storage areas will be located or protected from sources of ignition, hot work activities and possible falling objects.
- Hot Work operations shall not be carried out within 3 metres of any LPG storage area.
- All cylinders will be turned off when not in use, including but not limited to: at each rest/meal break, at the end of each working shift and when unattended. Rhino Shrinkwrap supervisors will ensure adherence and ensure all cylinders and equipment are secured

3. Risk - SHRINK WRAPPING GUN BURNS

Control measures
- Use tools with quick release trigger which shuts off flame when released or tool is dropped
- Wear PPE: safety gloves; long sleeved clothing and safety glasses
- Do not use heat tool in confined spaces or where angled surfaces could bounce back hot air towards you
- Never point heat tool at anyone.
- Restrict access by unnecessary & unauthorised personnel
- Do not touch any elements of the heat tool which become hot during use
4. Risk - HIGH WINDS MAKING INSTALLATION HAZARDOUS

Control measures
- Daily and weekly weather forecasts obtained with monitoring of weather conditions is required.
- Typically, scaffold shrink wrapping can not take place in wind speeds over 20 mph.

5. Risk - WORKING FROM MOBILE EQUIPMENT WORKING PLATFORMS (MEWPs)

Control measures
a) Safe Working Loads – Safe Working Load specifications will be complied with at all times.
b) Safe use of MEWPs. Only trained personnel will operate the equipment. Safety Tool Box Talks will be given to ensure users are aware of the safety precautions. It will be the responsibility of Rhino Shrinkwrap supervisors to carry out Tool Box Talks when required. Operatives will wear harnesses whilst using MEWPs.
c) General equipment safety requirements. Only equipment in good working order will be used. Customers must ensure that all working platforms they supply are in good order before they are used. Rhino Shrinkwrap staff will report any unsafe defects immediately.
d) Equipment checks.
- Check equipment maintenance record is up to date.
- MEWP operators will carry out & record daily equipment checks.
- Consider whether the equipment seems overloaded – MEWPs will not be used for Lifting Operations (inc. carrying materials).
- Consider whether there are unsafe obstructions or unstable ground.
- Check the platform is suitable for shrinkwrapping to be carried out.
- Check toeboards and guardrails are safe.
Check access to and from the platform is safe.

6. Risk - WORKING FROM TOWER SCAFFOLDS

Control measures
a) The Assembly Instructions, Safety Guide, Maintenance Rules, Safe Working Load etc., will be followed at all times.
b) Design & Assembly
- All scaffolds will be designed and erected by competent people (PASMA trained).
- Guardrails will be securely fixed in place at a maximum spacing of 470mm.
- Toe-boards of a minimum height of 150mm (6 inches) will be installed.
- The working platforms of mobile towers will be fully boarded.
- Scaffolds will be erected to cope with their intended purpose e.g. weight of materials.
- There will be safe access to all working platforms.
- All scaffolds will be erected in a manner that they are stable in use.
- Mobile towers will only be erected on a firm level surface.
- Mobile towers will be secured to the adjacent fixed structure where necessary.
- When erecting and dismantling tower scaffolds, the Advanced Guardrail/3T (Through The Trap) method of installing or removing guardrail braces will be followed.
- Stabilisers/Outriggers will be fitted to mobile towers where necessary to increase stability.
- The base to height ratio of mobile towers will comply with the manufacturer’s instructions.
- Mobile towers with built in ladder or rung sections will be used to gain access and egress from the working platform.
c) Safe Working Loads – Safe Working Load specifications will be complied with at all times.
d) Safe use of Mobile Tower Scaffolds. Only PASMA trained personnel will alter the scaffold.
- Sections of guard-rail that have to be removed for the landing of materials are replaced as soon as possible afterwards.
- Alternative fall prevention methods are employed whilst any section of guard-rail is removed.
- Mobile towers have effective brakes which are applied at all times when the tower is not being moved.
- The working platform is cleared of people, materials, tools etc., before a mobile tower is moved.
- Mobile towers to be reduced in height to 4m before moving.

e) General equipment safety requirements. Only equipment in good working order will be used. Rhino Shrinkwrap staff will report any unsafe defects immediately.

f) Equipment checks
- Check equipment maintenance record is up to date.
- Scaffold inspection reports are prepared by the person inspecting the scaffold as necessary.
- Scaffolds are inspected by a competent person at intervals not exceeding 7 days:
  - before they are first used;
  - after substantial alteration;
  - after any event likely to have effected their stability.

7. Risk - MANUAL HANDLING

Control measures
- Manual handling will be kept to the reasonably practicable minimum and where large or heavy quantities of materials are required to be lifted or positioned; mechanical aids will be used wherever possible.
- All staff and contractors have been instructed on the potential dangers of manual handling, and have received manual handling training. Staff and contractors will not lift items of tools or equipment beyond their capabilities.
- Heavy or awkward items will be broken down into smaller pieces or dual lifted where this is not possible.
- It is the responsibility of the Rhino Shrinkwrap Installations Manager & supervisors to identify and control potentially dangerous manual handling situations as they occur.

8. Risk - TRIPS ON HEAT TOOL HOSE

Control measures
- Demarcate working area
- Ensure cylinder is kept close to the area of work (though at least 3m from heat tool) and minimise long hose runs

9. Risk - ENVIRONMENTAL CONTAMINATION

Control measures
- No CoSHH substances to be used
- All waste to be secured against the wind at all times
- Ensure all skips/bins are covered
- All shrink wrap sheeting to be secured against the wind at all times
- All tools & materials to be stored securely when not in use
- All unused fixings / materials to be disposed of properly / stored securely for reuse
Scaffold shrink wrapping - method

Shrinkwrap sheeting is a flame-retardant low density polythene sheeting which is overlapped and heat welded onto itself to provide a weatherproof barrier. It is engineered to provide a weather protection and environmental containment to construction projects.

Shrinkwrapping is a hot-works activity and should only be carried out by trained operatives working under a hot works permit system. There are no specific HSE guidelines relating to scaffold shrinkwrapping, however general industrial shrinkwrapping guidelines such as the use and storage of gas cylinders should be observed.

The installation team comprises of Rhino Shrink Wrap employees, who are trained & experienced in the use of scaffold wrapping techniques and all operatives have previous experience with installing scaffold shrink wrap sheeting.

During the encapsulation and containment of scaffolding structures is that the shrink wrap must be heated to its softening point for welding & shrinking. This is achieved using a propane gas shrink wrapping gun. The heat guns used by Rhino Shrink Wrap incorporate a safety cut-out and dead-man's handle so that as soon as the operator releases the handle, the gas and heat is immediately shut-off.

The scaffold shrinkwrap is securely attached to the scaffold structure wrapping the film around a scaffold tube and heat welding it back onto itself. Alternatively, particularly for projects that require total containment, the shrink film can be battened to a scaffold board or solid surface such as a floor, wall or ceiling.

Adjacent sheets of shrinkwrap film are joined to each other by overlapping the sheets by approx. 30cm and heating the overlap almost to the melting point of the polythene film and then pushing the sheets together creating a weld. This weld may also be taped with high-tack adhesive tape and/or battened to a scaffold tube where the weld is particularly exposed.

Once a sheet has been secured on all sides it is heat shrunk by the installer using a propane gas hot air gun, to give a ‘drum tight’ finish. Only materials supplied and qualified by Rhino Shrinkwrap and client are to be used. Materials to be used: Shrinkwrap film; Polyester strapping; Adhesive ‘patch’ tape; Rhino clips; Silicon sealant; Timber battening; Screws/Nails. No hazardous materials (CoSHH) are to be used.

Prior to work starting each day, the Rhino Shrink Wrap supervisor will carry out a team brief and at least once a week a tool-box talk will be carried out.

Once the encapsulation and containment has been completed a handover certificate will be produced and the Customer’s on-site representative will be invited to check the work completed and sign the handover certificate.

Rhino Shrink Wrap will remove any waste they have produced and ensure the site is free from shrink wrapping materials and equipment.
Scaffold shrink wrap installation process - summary

1. Cut scaffold shrink wrap sheets to size.
2. Position and secure sheets around scaffold tube using Rhino shrink wrap clips.
3. Unfold sheets and clip into place using Rhino clip until required section is covered.
4. Securely attach sheet to scaffold board using baton and screw or via heat weld to the required sheeting scaffold tube.
5. Join sheets together via heat weld using propane gas heat gun and tape.
6. Remove Rhino clips.
7. Once the full perimeter of sheet is securely fixed shrink off required sheet using propane gas heat gun.
8. Tape welds if necessary with Rhino shrink wrapping patch tape.
9. Carry on with task in repeat stages until complete.
10. Check for quality of finish.
11. Remove all waste and inspect the site, ensure site is left in a clean and tidy condition.
12. Produce handover certificate.

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