DEMOLITION STANDARD SYSTEMS OF WORK

HAMPSHIRE
ENVIRONMENTAL SERVICES

DEMOLITION STANDARD SYSTEMS OF WORK

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Introduction

These Standard Systems of Work have been developed for tasks that are considered to be everyday risks to employees of the company. They are significant risks, but because of experience and competence they are dealt with by the following standard systems. Copies of these systems will be laminated and held in a plastic file available on site.

Method statements and other documentation will refer to the standard system but they must be relevant for them to be used, or a specific risk assessment/method statement will be produced before the work commences.

Any updates or amendments will be communicated across the company by the Director.

Demolition Standard Systems of work cover the following:

G01	Hand Tools
G02	Use of Electrical Equipment
G03	Mobile Elevating Work Platform (MEWP)
G04	Lightweight Tower Scaffolds
G05	Safe Use of Ladders, Steps and Trestles
G06	Safe Use of Scaffolds
G07	Manual Handling
A01	Taking of Asbestos Samples
A02	Asbestos Cement: Hand Removal
A03	Asbestos Cement: Mechanical Removal
A04	Removal of Asbestos Floor Tiles with of Asbestos Adhesive
A05	Removal of Asbestos Floor Tiles
A06	Surface Picking of Asbestos
D01	Soft Strip
D02	Crushing
D03	Crushers: Blockages of Jaw Crushers
D04	Crushers: Removal of Excessive Stone Hydraulic Jaw Crusher
D05	Crushers: Clearing Stalled Crushers – Jaw Types
D06	Crushers: Clearing Blocked Jaw Crushers – NON Hydraulic Types
D07	Crushers: Burning Rebar and Tramp Metal
D08	Use of Chainsaws
D09	Burning & Cutting
D10	Changing Machine Tools
D11	Plant Hire
D12	Site Set Up
D13	Machine Transport
D14	Crane Man Basket
D15	Hook Wagon

Appendix Confirmation of receipt and understanding of this document.

G01

Hand Tools

Risks:
Operative: Electric shock, Cuts, Eye injury, Dust, Hearing loss
Others: Electric shock, Cuts, Eye injury, Dust

Safety Equipment: as necessary
- Gloves to EN388 standard
- Eye protection to EN166 standard
- Hearing protection EN 352 –3 standard
- Respiratory protection to P3 EN149 standard

Safety Measures
- Always use the correct tool for the job, if not sure, ask.
- Before using a tool check it over, if defective don't use.
- Keep blades sharp and clean, look after the tools.
- Wear the necessary safety equipment, don't chance it.
- All power tools will be subject to routine inspections and should be regularly tested.
- Plan where you lead will go and try not to trip people up.
- An electric shock on the ground is bad enough, but 10 meters up a ladder is fatal.
- If possible, use 100V AC power tools.
- Protect all 240v AC power tools with a residual current device.

G02

Use of Electrical Equipment

Risks:
Operatives: Shock, burns, falls from height, fire, and explosion
Others: Hit by falling object, fire, explosion

Safety Equipment:
- 240/100V AC transformers
- Insulated footwear
- Residual current devices
- Double insulated tools

Safety Measures:
- Only use 110V AC updated tools and equipment, double insulated indicated by symbol ▣.
- Always use a 30s/30mA RCD (separate or included in connector).
- Check appliance before use for:
    - Damage to the tool body (cracks to casing, bits missing)
    - Damage to lead (cuts, abrasions, deterioration) or plug
    - Cable secure in plug cord grip
    - Signs of overheating on plug
- Operatives trained in the action needed if someone receives an electric shock.
- All portable and moveable electrical equipment tested regularly, particularly extension leads.
- Place 240/110V transformer close to power outlet.
- Electrical wires are not interfered with unless a competent electrician has confirmed that they are dead, supply fuses removed and locked away.
- Do not use tools and equipment if there are concerns.
- Maintenance log in use to record results of tests and next test date.
- Use insulated ladders when working in the vicinity of electrical circuits.

G03

Mobile Elevating Work Platforms (MEWP)

Risks:
Operatives: Overturning, collapse, head strike
Others: Hit by overturning/collapse or item dropped, trespass

Safety Equipment:
- Hardhat to EN: 397 if any risk of head strike
- Harness and lanyard

Safety Measures:
- Only trained operatives who hold certificates of competence will operate this type of equipment. The equipment will only be hired from a reputable hire company who will provide certificates of examination required under the Lifting Operation and Lifting Equipment Regulations. If it is a scissor lift a check will be made that the scissor mechanism is guarded.
- The area where the platform is to be sited will be firm and level with a clear working area around.
- All non-authorised persons will be excluded from the work area and around the base. The area around the base will be declared a hardhat area when the platform is operational. If the MEWP is being used where people may enter the danger area fencing or barriers will be erected.
- Operatives will not overreach from the platform where necessary the platform will be repositioned.
- If the platform is carrying loads the total weight including the operatives will be considered before commencing.
- Before the platform is used the operatives will familiarise themselves with the controls and ensure people on the ground are aware of the emergency including lowering procedures.
- When the platform is not in use it will be secured to prevent unauthorised use, normally the keys removed and secured away.
- In normal operation the platform will not overhang the boundaries of the work site if it is required, then the person in charge will produce a specific risk assessment.
- Harnesses will be worn and clipped on in boom / cherry picker machines
- The method statement will state whether harnesses are required for platform / scissor lifts
- Diesel MEWP give of fumes and should not therefore be used within enclosures or poorly ventilated areas unless they are externally vented.
- If used inside enclosure the equipment must be thoroughly cleaned and inspected by an analyst usually during the 4 stage clearance before being removed from the enclosure.

G04

Lightweight Tower Scaffolds

Risks:
Operatives: Falls, Electrocution, Collapse, overturning, Hand injury
Others: Trespass, Falls, Collapse

Safety Equipment:
- Gloves to EN388 standard
- Hard Hat to EN397
- Safety footwear to EN345

Safety Measures:

- These items will only be hired from a reputable company and the height required will be known before ordering.
- When you accept delivery, there must be a set of instructions for the tower.
- Anyone who assembles or dismantles this equipment will be trained. The manufacturer's instructions will be available and consulted before assembly or alteration.
- Each component is to be in good order and any damaged or defective parts will not be used
- The scaffold will only be assembled on a flat hard surface and the levellers will not be used to gain extra height, blocks bricks, or timbers are not good enough. Ensure the brakes are used and turned outwards.
- The guardrails will always be used to protect the working area. Do not overreach move the tower. Towers will only be moved from the base and nobody will be on the working platform until newly positioned and secured.
- Tower scaffolds do have a maximum weight, the item will become dangerous if overloaded, refer to the manufactures safety limits, if you do not know ASK. Always try to tie the tower to a solid structure if possible.
- As a general rule of thumb the towers height should not exceed externally 3 times the narrowest width of the base or 3.5 if internally. If sheeting or netting is used or adverse weather is expected, the height will need to be reduced. The use of outriggers may allow extra height. The exact height etc of the tower will be on the instructions from the hire centre
- The tower scaffold must be checked by a trained person, normally the supervisor before use.
- If the tower scaffold is used as a fixed scaffold in one place for over a week it must be inspected and records kept.

G05

Safe use of Ladders, Steps and Trestles

Risks:
Operatives: Fall from height
Others: Struck by falling object

Safety Equipment:
- Rope or straps for lashing ladder
- Footwear that provides a good grip
- Shoulder bag or belt for carrying tools (hands free)
- Trestle toe boards and guardrails (over 2m)
- Safety equipment required for asbestos removal – see relevant Standard System of Work.

Safety Measures:
- All ladders, steps and trestles are subject to regular maintenance checks
- All ladders, steps and trestles to be inspected for damage, loose rungs/steps, cleanliness (no grease, oil or mud) before use. Clean as necessary.
- Set on firm, level ground at 75^{o} to the horizontal.
- Ladders properly secured at the top – to be footed whilst securing takes place.
- Do not over reach, move ladder or steps.
- Place steps at right angles to the work area, ensuring fully open with retaining mechanism locked.
- Have safe method of moving tools/equipment to keep hands free.
- Establish exclusion zone beneath work area.
- Ladders used with scaffolding must reach 5 rungs past working platform or have a secure hand hold a meter up post step off point.
- Operatives trained in basic ladder safety.
- If working in the area of live electricity that cannot be isolated, insulated ladders should be used.

G06

Safe Use of Scaffolds

Risks:
Operatives:Fall from height
Others: Struck by falling object

Safety Equipment:
- Hard hats to EN397 standard
- Safety footwear
- Safety equipment required for asbestos removal – see relevant Standard System of Work.

Safety Measures:
- Ensure scaffold is fully boarded and erected by competent contractor in accordance with their method statement.
  N.B. scaffolders should half board and guardrail their working lifts as they go up and down! And hook themselves on with their harnesses
- Ensure that before work starts a signed handover certificate is obtained from the scaffolder and the scaffolding is inspected.
- Arrange for the scaffold to be inspected weekly by a competent person and obtain a signed inspection report.
- If scaffold subject to high winds or collision with moving vehicle, scaffold to be inspected by competent person before further use.
- If taking over scaffold ensure it has been inspected within the last seven days and a certificate has been issued.
- Do not alter the scaffold in any way unless you are a competent scaffolder

A01

Taking Asbestos Samples

Non Licensable Work specific exclusion in Control of Asbestos Regulations 3.2

Risks:

Operatives: Fibre release, falls, cuts
Others: Fibre release

Safety Equipment:

- Respirator to P3 Standard EN149 minimum
- Dustproof overalls/overshoes (dependant on type and number of samples)
- PVA spray
- Small mist sprayer and AS strip

Safety Measures

Because of the risk of exposing both the sampler and any other people it is important to follow this simple procedure for taking samples. HSG264 gives further guidance:

- Anyone not involved in the sampling should be excluded from the immediate area
- The person taking the samples should have received asbestos awareness training and training in how to safely take samples
- The sampler should be wearing as a minimum a disposable respirator to EN149 P3 in accordance with their face fit test
- Depending on the degree of contamination of the surrounding area or that to be created by the sampling, then consideration should be taken regarding wearing a Tyvek coverall/overshoes.
- Access will normally be via hop up, or steps. Sometimes additional height will be needed and assessed.
- The area under where the sample is to be taken should be covered with polythene to collect any debris
- The sample should be taken using a small mist spray and as strip where the breakage or core is taken from and should be double bagged in sealable sample bags.
- The area where the sample has been taken from must be sealed using PVA spray or tape or other decorative finish as required by the client.
- The polythene must be cleaned using a wet wipe and this be disposed of as waste.
- A Type H vacuum should be available for emergency de-contamination.

Expected fibre release:
Previous work and guidance predicts levels about 0.05 f/ml of air the above system is used

A02

Asbestos Cement: Hand Removal

Non Licensable Work under Control of Asbestos Regulations 3.2

- **exposure sporadic and low intensity**
- **and below Control Limit**
- **fibres firmly linked to matrix**

Risks:
Operatives: Fibre release, work at height, manual handling
Others: Fibre release, Trespass

Safety Equipment

- Respirator (P3) EN149 Standard
- Dustproof overalls
- Gloves to prevent physical
- Wellington Boots or
- Industrial Shoes with steel toecaps

Safety Measures:

Anyone involved in this work must have had asbestos awareness training and training specifically in how to do this work.

- All non-asbestos material will be removed from the working area and unauthorised persons excluded.
- If necessary for cleaning purposes plastic sheeting will be laid securely on the floor.
- As access arrangements will vary with each site, they will be identified specifically**. Under no circumstances** will anyone work on an asbestos cement fragile roof without the use of secured crawling boards with handrails and safety nets. A safe system of work is required for working at height.
- Where sheets have securing bolts (normally J bolts) they will be cropped or cut and the whole sheet removed without damaging it. If the sheet is whole and in good condition it will be placed within a skip / lorry or a vehicle with a sealed back compartment. This must be sealed from the driver and passengers and there should nothing else in the back.
- If the sheets edges are loose or it is broken, the sheet will be dampened or PVA applied before removal and then wrapped within thick gauge plastic sheeting before being placed within the covered skip/ lorry or vehicle.
- If the sheet has to be broken, this will only be carried out as a last resort after both sides of the sheet have been dampened.
- If the sheet has to be cut then it should if possible be carried out with hand tools and a gelling agent such as wallpaper paste, if not the lowest possible speed tools should be used. If power tools are used they should have extraction attachments to a vacuum with an H type filter. Operatives should be trained in manual handling techniques and gloves should be worn when handling the sheets.
- Use wet rags to clean equipment, access platform, ladders etc and place in covered skip.
- Coveralls and RPE should be removed in accordance with training, leaving masks until last and wet wipes used to clean exposed skin.
- Visually inspect equipment, working platform and surrounding area to make sure properly decontaminated.

Expected fibre release:
Previous work and guidance predicts levels about 0.15 f/ml of air if the above system is used.

A03

Asbestos Cement: Mechanical Removal

Non Licensable Notifiable Works

- **exposure sporadic and low intensity**
- **and below Control Limit**
- **fibres firmly linked to matrix**

Risks:

Operatives: **Fibre release, operation of plant, falls from access equipment**
Others: Fibre release, contact with plant, Trespass,

Safety Equipment

- Respirator with a FFPS3 filter EN149 standard
- Dustproof overalls
- Wellington Boots or
- Industrial boots with steel toecaps

Safety Measures:

- All non-asbestos material will be removed from the working area and unauthorised persons excluded.
- Anyone involved in this work must have had asbestos awareness training and training specifically in how to do this work.
- If necessary for cleaning purposes plastic sheeting will be laid securely on the floor.
- The operator of the plant will be trained to CITB or equivalent standard and wearing the safety equipment, unless the cab gives them the same protection. The Machine will have a roll protection system and cab protection to comply with PUWER. The sheets to be collapsed will be dampened down and kept damp, normally using fine misting of water from a fire engine or a hose line mounted on a scissor lift. There is a fine balance between suppressing the fibre release and flooding! Using the arranged system of collapse the driver will bring down all sheets onto the floor.
- Once the mechanical collapse has finished the asbestos material will be carefully loaded into a covered skip/ lorry again using a fine misting of water. Final clean will be by hand after the driver has scraped the surface. For this the operatives will wear disposable masks and coveralls.
- This system of work does not take account of anybody going on top of the roof, which will not normally happen. If people have to go on to the roof a separate risk assessment and method statement will be produced.
- All plant and equipment will be rinsed off before leaving site. The method statement will detail any specific steps to be taken.
- Use wet rags to clean equipment place rags in covered skip.
- Personal decontamination is as per training – i.e. coveralls taken off and reversed and mask left on until last.
- Visually inspect equipment and surrounding area to make sure properly decontaminated.

Expected fibre release:

Previous work and guidance predicts about 0.01 f/ml of air.

A04

Removal of asbestos floor tiles with asbestos adhesive

Non Licensable Work under Control of Asbestos Regulations 3.2

- **exposure sporadic and low intensity**
- **and below Control Limit**
- **fibres firmly linked to matrix**

Risks:
Operatives: Fibre release
Others: Fibre release

Safety Equipment

- Respirator with P3 to standard EN1149 fitted
- Dust proof overalls
- Wellington boots
- H-type vacuum
- Asbestos warning signs
- Waste sacks
- Decontamination Unit

Safety Measures:

- All non-asbestos containing material will be removed from the work area.
- Anyone involved in this work must have had asbestos awareness training and training specifically in how to do this work.
- Wearing dust proof overalls and Respirators with FFP3 filters, the tiles will be removed either by using Hand tools e.g. large scrapers, shovels or if the tiles prove difficult to remove, 110v power tools such as a Kango with wide shovel heads attached. Shadow Vacuuming will be done if power tools are used. Under no circumstances are tools that use an Abrasive action to be used.
- Once the tiles have been removed they will be bagged in clear asbestos waste sacks and taken to an approved disposal site.
- The work area will be cleaned with a Type H vacuum.
- Overalls will be disposed of as Contaminated Waste.
- Personal and site decontamination will be via a type H vacuum. Depending on the client's requirements, the floor surface will be appropriately treated e.g. covering with boards or self-levelling floor screed.

A05

Removal of Asbestos Floor Tiles

Non Licensable Work under Control of Asbestos Regulations 3.2

- **exposure sporadic and low intensity**
- **and below Control Limit**
- **fibres firmly linked to matrix**

Risks:
Operatives: Fibre release
Others: Fibre release

Safety Equipment

- Disposable mask P3 standard EN149
- Dust proof overalls
- Wellington boots
- H-type vacuum
- Asbestos warning signs
- Waste sacks

Safety Measures:

- All non-asbestos containing material will be removed from the work area.
- Anyone involved in this work must have had asbestos awareness training and training specifically in how to do this work.
- Wearing dust proof overalls and disposable masks the tiles will be removed either by using large scrapers or if the tiles prove difficult to remove, 110V Kango with wide shovel heads attached will be used.
- Under no circumstances will tools that use an Abrasive action are to be used.
- Once the tiles have been removed they will be bagged in clear asbestos waste sacks and taken to an approved disposal site.
- The people carrying out the work will decontaminate themselves by either the use of wet wipes or vacuuming their selves of using an H-Type vacuum.
- Overalls, Disposable Masks and protective Gloves will be disposed of as Contaminated Waste.
- Depending on the Clients requirements, the floor surface will be appropriately treated e.g. covering with boards or self-levelling floor screed.

A06

Surface Picking of Asbestos

Non Licensable Work under Control of Asbestos Regulations 3.2

- **exposure sporadic and low intensity**
- **and below Control Limit**
- **fibres firmly linked to matrix**

Risks:
Operatives: Fibre release, adverse weather conditions
Others: Fibre release

Safety Equipment:

- Disposable mask P3 standard EN149
- Dust proof overalls
- Wellington boots
- H-type vacuum
- Footbath
- Asbestos warning signs
- Barrier tape
- Waste sacks
- Water sprayer

Safety Measures:

- Anyone involved in this work must have had asbestos awareness training and training specifically in how to do this work.
- Wearing dust proof overalls, Wellington boots and respiratory protection, put up barrier tape and asbestos warning signs around the contaminated area.
- Place the footbath at the entry/ exit of the contaminated area, this is the only way in and out of the area.
- If it is a large area needing to be cleared of asbestos it is advised to break it into small sections. This may be achieved by making a grid using rope.
- Once picking has started, any pieces of asbestos that are found will be sprayed with a P.V.A and water solution, to suppress the asbestos fibres and put into clear waste sacks
- Before the waste sacks get too full they will have the air removed, sealed and stored in an arranged secure area.
- When the surface pick has been completed, wash Wellington boots in the footbath at the exit.
- All overalls, tape, ropes etc used will be placed within the waste sacks and disposed off as contaminated waste.

Expected fibre release:
Previous work and guidance predicts levels of <0.01f/ml.

D01

Soft Strip

Risks:
Operatives: asbestos, electrocution, use of hand tools, needles, zoonoses, manual handling, work at height
Others: asbestos fibre release

Safety Equipment:
• Disposable mask P2 standard EN149
• Dust proof overalls
• Boots

Safety Measures:
• Services will need to be disconnected in most instances before work commences
– If they are live then the method statement will detail additional precautions

• Asbestos will need to have been removed after a demolition/refurbishment survey has been carried out before we will carry out any soft strip.

• The supervisor will brief operatives regarding the exact nature of the work

• Potential contamination from needles or pigeon debris will be identified and controlled as per a specific method statement

• Work at height will be planned and controlled e.g. from tower scaffolds or cherry pickers. Any ladders used over 3 m will be footed

• Hand tools will be used in a workman like manner

• Consideration to manual handling issues will be given – operatives generally are in control of the size of material they produce – large / heavy / awkward items will be considered as part of the overall method statement

D02

Crushing

Risks:
Operatives: Falling into Crusher. Struck by objects on belt or plan. Exposure to noise, dust and vibration. Injured by moving parts, machinery and belts, Injured clearing blockages. Transport associated with loading and unloading, Injured walking on an unconsolidated stockpile.
Others: No unauthorized persons should be in the vicinity of the machine, if unauthorized access is attempted the above risks would also apply.

Safety Measures:
Carry out an analysis of the requirement for crushing as part of the contract information for the pre-tender assessment. The following should be considered:

Set-Up:
• Positions of pre and post crushed stockpiles
• Traffic routes
• Local residents
• Working area
• Water supply
• Operatives required, their training and interchange ability (where possible).
Drivers and operators must be CITB trained or equivalent
• Routine for removing metal
• Removal and transportation arrangements

Loading
☐ Loading, unloading and excavating machinery must be operated by CITB (or equivalent) trained staff.
☐ Material too large to go through the crusher will be broken up by IPH hammer, reinforced concrete will be processed by Cracker to remove the rebar.
☐ Dust suppression may be required.
☐ Walking on an unconsolidated stockpile can result in broken ankles and should be kept to a minimum.

Crushing
Operator carries out daily checks, to include:
☐ All guards in place **(machine must not be operated with any guards missing.)**
☐ Emergency stops working
☐ Visual inspection
If machine is not serviceable, urgent advice is to be sought from the Director.
Operatives “picking” from the platform must wear correctly fitted harnesses. All harnesses are registered so that they can be called up for cleaning and inspection every
6 months.
The crusher is designated a “noise protection zone” when in operation and all operators and visitors must wear ear protection when in close proximity. If dust suppression cannot be used the operator must wear a powered respirator with P3 filters.

If a blockage occurs the operator must isolate the machine before making a visual inspection.

The procedure to be followed will then depend on the type of crusher – some crusher jaws cannot be de-powered and therefore until they have been jammed with tyres or chains to act as a chock it would be suicidal to go in to the crushing area. Other types can be entered safely.

Before anybody enters the crusher for whatever reason, removing the key must physically isolate the machine. The person entering the crusher must hold the key. Operators must not misuse or abuse the machinery nor misbehave in its vicinity. The company will consider such action a disciplinary offence

Maintenance/Inspection

• The machine will be inspected in accordance with the requirements of the Provision and Use of Work equipment and Lifting Operations and Lifting Equipment Regulations if appropriate for the 360 degree excavator, the driver will carry out and record a daily inspection which must be signed for.

• Specialist engineers will regularly maintain the crusher to a planned programme and an agreed schedule. Any defect affecting safety will be rectified before the machine is used.

• The manufacturer's handbook is kept on site and in the main offices.

D03

Blockages of Jaw Crushers

Risks:
Operatives: Falling into crusher
Injury from moving rock
Injury from manual handling of rock, rebar or tramp metal.
Exposure to dust and noise.
Injury walking on an unconsolidated stockpile

Others: All other persons should be well out of the way. Anybody in the vicinity will be at risk from exposure to dust and walking on the unconsolidated stockpile.

Safety Equipment:
• Hard hats to EN397 standard.
• Appropriate gloves toEN388 standard
• Eye protection to En166 standard
• Facemask to at least P3 EN149 standard.
• Safety footwear with toe and midsole protection

Causes of crusher blockages can be grouped under two main headings:

1. ***Stalling due to:***
• Electrical or mechanical failure
• Material jammed in the chamber causing an overload
• Overfeeding material
• Entry of tramp metal or wood
• Accumulation of stone
• Accumulation of fine material in the crusher discharge chute

2. ***Bridging due to:***
• Oversize stone
• Excessive clay in the crushing cavity preventing small stones passing through the crusher
• A foreign body in the crusher or discharge chamber obstructing the stone

Prevention
Every effort must be made to prevent oversize material or tramp metal entering into the crusher feed hopper by:

• Reducing oversize material by prior processing

• Training and instructing the loader driver not to load oversize material.

• Following the manufacturer's recommendations on the rate, presentation of feed and crushing settings.

• Good housekeeping to prevent scrap steel entering into shovel buckets.

• Ensuring the size of buckets is appropriate to the capacity of the crusher.
• Regular inspection of metal parts, e.g. bucket teeth, dumper wear plates etc to ensure they are unlikely to break off and enter the crusher feed.

• Adequate maintenance of drive systems

• Removal and adequate cleaning of the discharge chute particularly on crushing rolls.

D04
Crushers – Removal of Excessive Stone Hydraulic Jaw Crusher

Risks:
Material Remover:
Fatal or severe injury from inadvertent starting of machine.
Injury from falling or moving rock.
Being struck by projected material
Manual handling of material and equipment.
Injury from components moving without warning.
Snagging of lifting tackle
Dust.
Falling due to poor ground conditions and siting of removed material.

***Supervisor*:** Dust
Falling due to poor ground conditions and the position of removed material.
Manual handling of material and equipment.
No unauthorized persons must be in the vicinity of the crusher.

Safety Equipment:
• Ear protection (if needed) to EN352 standard
• Eye protection to EN166 standard
• Face mask to at least P3 EN149 standard
• Gloves to EN388 standard
• Safety footwear with toe and midsole protection
• Hard hat to EN397 standard
• Overalls
If it becomes necessary for excessive stone to be removed from the crusher the crusher operator will supervise the activity after discussion with the site foreman and Director if necessary.

When the crusher becomes blocked, loading needs to stop immediately.
The following must be considered **before** work starts and safe procedures adopted:
• Poor or difficult access
• Accidental start up of feeder, grizzly, crusher or adjacent plant
• Being struck by rock from the feeder, grizzly, chute or projected material.
• The movement of any rocks present inside the crusher, slipping or falling.
• Manual handling of rocks and equipment. Unexpected movement of crusher components.
• Damaged electrical components.
• Noise
• Stored energy from electrical, hydraulics, compressed air and mechanical sources.
• Unsafe placement of material removed from the crusher. How the work is done will depend on the situation and may be a combination of hand and machine.
The first step is to turn off and isolate the crusher. The crusher operator or site foreman must supervise the work.

An excavator can be used effectively to dislodge bridged rocks, options:
• Break material using IPH hammer.
• Push material down using the bucket.
• Hook material out using the bucket. (All staff must be kept well clear)
• Pass chain / strop around the material and lift out.

Note: Extreme caution must be exercised to ensure that the excavator is not overloaded by trying to lift out a jammed rock.

You need to consider:
• Incorrect estimation of weight of rock.
• Additional stress forces caused by the rock entrapment
• Insecure attachment of lifting tackle to the rock
• Sudden failure of cables or lifting tackle.
• Entanglement of lifting gear in crusher.
• Poor communication.

If it becomes necessary for a person to enter the crusher to position hooks or slings:

The Operating Manual needs to be consulted specifically
• The crusher and feeder must be stopped.

• Safety harnesses worn.

• **The crusher must be hydraulically and electrically isolated and source padlocked off, keys must be retained by the person in the crusher**

• **Non-electrically powered machinery must be locked off, valves removed and ignition keys retained by the person in the crusher.**

Alternative Methods:
The following methods will not normally be used but if one or more becomes necessary a detailed risk assessment and appropriate method statement must be developed before work starts.

• Gas or Chemical expansion
• Use of pinch-bars, hand hammers. **The use of wedges is prohibited.**
• Jack hammers and hydraulic splitters.

D05

Clearing Stalled Crushers – Jaw Types

Risks:
M**aterial Remover** / **Slinger:**
Noise and dust
Fatal or severe injury from inadvertent starting of machine.
Injury from falling or moving rock.
Being struck by projected material
Injury by forcibly ejected material
Manual handling of material and equipment.
Injury from components moving without warning.
Falling due to poor ground conditions and siting of removed material.
Snagging of lifting tackle.

Supervisor:
Dust and noise
Falling due to poor ground conditions and the position of removed material.
Manual handling of material and equipment.

No unauthorised persons must be in the vicinity of the crusher.
Safety Equipment:

• Ear protection to EN 352–3 standard

• Eye protection to EN166 standard

• Face mask to at least P3 EN149 standard

• Gloves to EN388 standard

• Safety footwear to EN345 standard

• Hard hat EN397 standard

• Overalls

• Reliable means of communication

• Safety harness.

A stalled crusher **must** be treated as possibly being jammed with tramp metal that could be ejected with fatal consequences. The Director must be contacted and will decide if we can clear it. A safe system will include the following:

• Isolation of the crusher, and associated plant if necessary.

• Area cleared of personnel.

• Careful examination to try to ascertain if there has been an electrical or mechanical failure**.**

If there appears to be no reason to suspect such a failure then the crusher is probably jammed by tramp metal and is in a hazardous state.
Wherever possible and from a position of safety, any inspection of the crushing cavity of a jaw should be carried out from below the crusher NOT from above.
Remember:

Fatal accidents have also occurred to people who have examined the crushing cavity of a stalled crusher from above Safe system of work

This must be agreed with the Director

• Isolate plant. This must include associated plant systems that may endanger people involved in the inspection procedure

• **Consult the Handbook**
• It may be possible to operate the drive flywheel in reverse direction using a chain block to release pressure on any tramp metal.

• Alternatively, the shaft may be assisted downwards by jacking between the spider and the shaft nut. This may only be done after making the crushing cavity safe by filling with stone or by covering with a suitable protective shield. Care must be taken that the shaft does not drop violently or unexpectedly.

• On machines too small to allow jacking, drive the shaft down using a sledgehammer, possibly in conjunction with counter rotation.

• Release the tramp – burning may be the only option.

D06
Clearing Blocked Jaw Crushers – NON Hydraulic Types
Refer to Standard System of Work D05

Procedure:

• If a crusher stalls under load, any stored energy within the mechanism due to tramp material can be reduced to an insignificant level by ensuring that the jaws are moved to the open position.

• The end of the eccentric shaft and flywheel rims of each jaw crusher should therefore be marked relative to a fixed reference point, preferably on the crusher frame, to clearly indicate this position.

Note: In the event of a crusher stalling precisely at this marked position, it should not be assumed that any tramp metal present is free from compression.

• Should the crusher come to rest with the jaw stock in any other position, the flywheel should be turned under control, avoiding the fully closed jaw condition, until the fully open jaw condition is reached.

• This operation should be carried out using a chain block or Tirfors at or near crusher foundation level and not from above.

• When the jaws are fully open and the tramp metal not under compression. The stone and tramp metal may be removed from the crusher, exercising due caution. Where possible, and it is safe to do so, tramp metal should initially be freed from below the jaw cavity. If this method fails, it may be necessary, as a last resort, to burn tramp metal from the crushing chamber. This can only be done with permission from the contracts manager and following a safe system of work.

D07

Crushers: Burning Rebar and Tramp Metal

Risks:
Cutting Equipment Operator:
Noise and dust
Burns
Smoke/fume inhalation
Eye damage
Fatal or severe injury from inadvertent starting of machine.
Injury from falling or moving rock.
Being struck by projected material
Injury by forcibly ejected material
Manual handling of material and equipment.
Injury from components moving without warning.
Falling due to poor ground conditions and siting of removed material.
Snagging of oxygen pipeline

2nd Operative: Same as above.

No unauthorised persons must be in the vicinity of the crusher.
Safety Equipment:
• Ear protection.
• Eye protection including infra red/ultra violet filters to EN166
• Facemask to at least P3 EN1349 standard combined fume particle required if the material is galvanised.
• Welding/hot cutting gloves to EN407 standard
• Safety footwear EN345
• Hard hat EN397
• Overalls (not nylon)
• Reliable means of communication
• Fire extinguisher
• Protective shield
Potential hazards when it is necessary to burn rebar and tramp metal from a crusher:
• Ejected metal
• Molten metal
• Infra-red and ultra-violet radiation from burning equipment
• Hot objects
• Difficult communications
• Fume
• Fire
The following is a generic system that should be used as a basis for specific risk assessments.
• Ensure that filling the crusher with heavy objects, e.g. scrap tyres, reduces impact of ejected material.
• Two operatives are required so that emergency procedures can be initiated. Both must be trained in the use of flame cutting equipment and how specifically to do the job. Because of the risk associated with the fall of molten splatter, both operatives must wear appropriate protective clothing.
• One person will carry out the burning operation whilst the other controls the oxygen supply valve from a safe location but with good visual contact.
• There must be good communications and suitable fire extinguishers at hand.
• Whenever practicable the tramp metal should be burned from beneath the crusher. Care must be taken to protect the lance operator from falling molten splatter.

If the tramp metal cannot be reached from beneath:
• The operator carrying out the burning must be sufficiently protected by full enclosure and be as far away as feasible from the trapped obstruction. The torch should be passed through slots cut in the protective shield and on through the restraining mesh, both of which will help to support the weight of the lance, and aid accuracy.
• The tramp metal can be ejected from the crusher with extreme force. Its' trajectory cannot be predicted and shelter for both persons must afford adequate protection from ricochet from any angle. All other persons must be moved well away from the area.

• Tramp metal should be melted from the centre not to the sides, this will allow any build up of pressure to be released gradually. Care should be taken not to damage the crusher concaves.
• The process should continue until the tramp metal falls through into the crash box below. The metal must be allowed to cool before removal.

D08

Use of Chain Saws

Risks:
Operatives: Noise
Vibration
Contact with moving parts of machine
Fuel
Others: Same as above

Safety Equipment
• Ear defenders to EN 352 (3 for helmet mounted) or EN352 (1 for muffs) - the SNR should be 30+
• Visor to PREN1731 or goggles / face mask to EN 166 1F
• Chainsaw gloves to EN388
• Chainsaw trousers with ballistic nylon or equivalent.
• Helmet should be to EN397
• Other clothing worn must be close fitting to avoid snagging and wear the following PPE:
    • Hard Hat to EN397
    • Helmet Mounted Hearing Protection to EN 352-1
    • Helmet Mounted Mesh Visor to EN 1731 or Goggles to
    • Chainsaw boots to EN381-6 (i.e. containing Ballistic nylon)
    • Leg Protection to EN381-5 (i.e. containing Ballistic nylon)

Safety Measures
Training - All operators **must** by law be adequately trained in order to use chain saws safely and possess a valid certificate of training.

Operative checks - before use, the operator must ensure that the chain brake is working. The machine must be maintained in line with the manufacturer's instructions and if there are any problems do not use it.

Public Protection - chapter 8 precautions will be necessary for operations on the highway or footpath. The measures to be taken to prevent public access to the work zone will be site specific. See the "Red book" for more details.

Noise and Vibration - Chain Saws produce high noise levels and hearing protection must be worn at all times. The levels of vibration given out by the machine will vary with the machine set up. This means that as well as the company sourcing models with good vibration performance characteristics, it is important that they are correctly maintained and set up.
The use is so limited that operators are not under health surveillance for audiometry and Hand arm vibration.

Fuel cans - petrol is obviously flammable and explosive. It must never be stored in anything other than a container, which is designed for the purpose. When fuelling use a pouring spout or funnel, clean up any spillage from the machine and move at least 10m away before starting the machine. Large jobs will need a specific fuelling area.

First Aid - an emergency aid kit with large wound dressing must always be on site when chain saws are in use.

D09

Burning and Cutting

Risks:
Operatives Fire, Explosion, Lead fume/Dust, Metal Fume fever
Manual Handling, Craneage, Eye damage
Burns, Premature Collapse, Springing Steel
Oxygen Enrichment, Ergonomic Position, Ingestion
Others Explosion
Premature Collapse
Trips
Lead/Fume/Dust

Safety Measures:
- Ensure any tanks or pipes that may have carried flammable substances are purged before cutting and proved to be gas free (certificated). If not absolutely sure, cold cut.
- Authorisation by Hot Work Permit, particularly in a confined space.
- Use a fire watch, re-inspect area after cutting has finished.
- Lead is particularly dangerous when in fume or dust form, e.g. from cutting painted surfaces, pipes or gutters. Use powered respirator to P3, arrange medical surveillance, employ high standard of person hygiene, do not eat or smoke with unwashed hands.
- Bottles should be kept on a trolley and chained to prevent falling.
- Machines should be used to move oxygen pack across site if possible, e.g. crane, forklift truck.
- Gas bottles to have serviceable gauges and flash back arrestors.
- Gas bottles to be clean and free from oil, grease or other lubricants.
- Cutting equipment to be checked before use, particularly hoses.
- Do not run hoses across traffic routes. Hoses must be crimped, not jubilee clipped to equipment.
- Premature Collapse is a hazard. Mark main cuts and the extent of cut, train the burner so that it is possible to assess the likely consequences of the cut and then take up a position to avoid being hit.
- Springing material is to be cut by using a 1m torch. Ensure you are not in the Arc of the material spring.
- Beware of oxygen enrichment from leaks, do not purge for freshening, turnoff bottles.
- Only carry out leak checks using soap or detergent, never a flame.
- Do not leave charged hoses in poorly ventilated areas.
- Turn off bottles at the end of the day or completion of the job.
- Store bottles upright, in a well-ventilated area, preferably outside.
- PPE must include eye protection, coloured glass to EN169, proban overalls, gloves, respirator powered if dealing with lead), safety footwear with toe and sole protection, leggings and hard hat.
- Operatives must be trained in equipment use, dangers of structural collapse, springing and explosion from heating pipes or tanks not properly purged.
- If working from scaffold, lightweight tower or mobile elevating work platform, refer to Standard Systems of Work G03, G04 or G06 as appropriate.

D10

Changing Machine Tools

Risks:
Operatives: Crushing, manual handling, falls from height,
Public & Other Site Workers: Crushing

Safety Equipment:
• Hardhat to EN 397
• Goggles to EN 166
• Ear Protection to EN 352
• High Visibility/Coats/Jackets/Vests to EN 471 Class 1
• Safety footwear with protected toe and midsole to EN 345
• Overalls
• Gloves to EN388 or more specific

Safety Measures:
• There are a number of means of fastening attachments. Manually with pins – semi-automatic quick hitch which has a pin and fully automatic quick hitch which has no pins The safety pins will be in at all times. Sub-contractors and anyone changing a tool without "a fully automatic quick hitch" will identify a flat level place for tool changing. For large tools safe access arrangements, e.g. a hop up, may be required to drive the pin. Alignment will be checked using bars rather than fingers and pins will be hammered in and retained with circlips not re-bar.
• Once a tool has been changed then the driver must check that it has been properly fitted by e.g. lifting the boom and using the hydraulics to raise and lower the tool.
• As this may be an interesting spectacle it is important to ensure that everyone is kept at a safe distance in case the tool falls.
• Any quick hitch is classed as lifting equipment under LOLER and needs annual testing

D11

Plant Hire

Risks:
***Operatives*:** Injury through malfunction or misuse
Injury through lack of safety features
Injury through use in unsuitable environmental conditions.
***Others*:** Injury through impact with machine.
Machine creating hazards by malfunction or misuse.
Injury through lack of safety features.

Safety Equipment:
• Hard hat to EN397 standard
• Seat restraint belts
• Ear protection (if required) to EN 352 standard
• Safety footwear EN166 standard
• Gloves to EN388 standard
• Eye protection (if required) to EN 166 standard
• Roll over protection.
• Breathing protection (if required)

Safety Measures
Normally all machinery, including lifting equipment, hired to a third party will have a company driver/operator.

Before hiring out the Director will ensure that:
• The work proposed is subject to a risk assessment, proper planning, and a method statement has been produced either by the client or the Company that includes supervision arrangements.
• The equipment is suitable for the task required, has no defects that might affect its safe operation and use, and has a valid test certificate covering the period of hire. If the certificate expires before the machine is returned, the Director will arrange to have the testing carried out on site or the machine replaced.
• The company driver/operator is trained and competent and has the necessary Certificates, i.e. training, testing, lifting, for inspection if necessary. **Young or inexperienced staff will not be sent with hired equipment unless properly supervised.**
• The driver/operator is briefed on the task and any potentially hazardous situations.
• Any dangerous parts are fully guarded, particularly power take-offs.

The driver/operator will:
• Assess the suitability of his machine (stability, manoeuvrability, reach, weight, lifting capacity, configuration etc) to do the work required on site and proceed only when he is satisfied. If he has concerns, he will discuss them with the client and the Company if necessary.
• Be alert to changing environmental conditions that may affect the operation, and increase the risk, particularly when lifting, using a mini digger or forklift.
• Inspect the machine each time before use and report any defects immediately. The machine will not be used if the defects have a safety implication.
• Operate with a Banksman when necessary. Driver/operator and Banksman will agree hand signals to be used before work starts.

Hammers are hired out to the end user. They are inspected before hire by a competent fitter and are sent out in a fit condition with information about their use.

D12
Site Set Up

Risks:
***Operatives*:** Manual Handling, electrocution, falls, use of plant
Others: Trespass, use of plant

Safety Equipment:
• Hardhat to EN 397
• Goggles to EN 166
• Ear Protection to EN 352
• High Visibility/Coats/Jackets/Vests to EN 471 Class 1
• Safety footwear with protected toe and midsole to EN 345
• Overalls
• Gloves to EN388 or more specific

Safety Measures:
• Establishing the site, provision of office and welfare facilities and demarcation of areas that are not to be demolished as per the contract specification and identification of services.
• Unloading of cabin - use of excavator within date testing certificate under LOLER, or HIAB on delivery lorry, tested slings or chains, ladder access to unsling. If the vehicle has to reverse, a banks man will supervise it.
• Electricity will be provided by means of a mobile generator be connected to the site cabin by means of a weatherproof connection or connected directly to a mains supply by a competent person.. The foul will be connected directly into the sewer or toilet facilities will be provided by a temporary facility.
• Heras fencing will be erected. This will be supported at intervals by scaffold tube and fitting braces to improve stability if necessary.
• Traffic routes will be demarcated with road pins and flagged rope. Before road pins are put in a CAT scan will be carried out to check for buried services.
• The foreman will brief staff about the job. A formal induction will be carried out for all staff and for any visitor who will be allowed unaccompanied access.
• Any neighbouring houses will be informed by letter drop about the proposed works and the emergency contact number.
• Instructions for access for delivery drivers will be sent with the subcontract orders.

D13
Machine Transport

Risks:
Operatives: Use of machinery, load moving
Public: Use of machinery, load moving

Safety Equipment:
• Hardhat to EN 397
• Goggles to EN 166
• Ear Protection to EN 352
• High Visibility/Coats/Jackets/Vests to EN 471 Class 1
• Safety footwear with protected toe and midsole to EN 345
• Overalls
• Gloves to EN388 or more specific

Safety Measures:
• Machinery will be transported on an appropriate vehicle, e.g. flat bed for large 360o excavators. The vehicle will be inspected as required by Road Traffic Act and driven by an appropriately qualified driver, e.g. HGV 1.
• Tachograph hours will be complied with and records kept as required.
• The plant will be loaded onto the vehicle using ramps or lifted by a crane/excavator. The lift will comply with LOLER, i.e. 12 month inspection, SLI, tested chains/slings.
• The plant will then load its buckets/attachments. IPH hammers will either sit between the tracks or on the gooseneck of the trailer.
• It is the driver's responsibility to ensure that the load is fixed. The boom must be chained down and attachments chained/strapped. The health and safety manager shows the securing procedure to all drivers/plant operators.
• Unloading is carried out with one banks man present on site and two in public/pedestrian areas.

D14
Crane Man Basket

Risks:
Operatives: Craneage and falls of men and materials
Others: Craneage and falls of men and materials
Safety Equipment:

- Hardhat to EN 397
- Ear Protection to EN 352
- High Visibility/Coats/Jackets/Vests to EN 471 Class 1
- Safety footwear with protected toe and midsole to EN 345
- Overalls
- Gloves to EN388 or more specific
- Full body harness EN 361

Safety Measures:

- The standard risks of craneage – overturn, collapse, etc, will be dealt with in a Method Statement for the lift. The crane will be suitable for man riding, i.e. will have a dead man's handle and power lower and will have been inspected in accordance with LOLER within the last six months.

- If necessary, a mechanism to prevent spin will be used, e.g. tag line.

- The Man Basket is a purpose designed lifting accessory that will be within test under LOLER within the last six months.

- Equipment will be strapped or secured so that tools, e.g. hammers, cannot fall.

- The operative will harness to the hook or crane rope, i.e. there is redundancy in the system so that if the man basket fails the operative is still attached to the crane.

- Use will be restricted to specified persons. Communications will be ensured between crane driver and man basket and ground as required.

D15
Hook Wagons

Risks:

Operatives: Use of machinery, load moving
Others: Use of machinery, load moving

Safety Equipment:

- Hardhat to EN 397
- Ear Protection to EN 352
- High Visibility/Coats/Jackets/Vests to EN 471 Class 1
- Safety footwear with protected toe and midsole to EN 345
- Overalls
- Gloves to EN388 or more specific

Safety Measures:

- HGV driven by licensed driver and inspected in accordance with the Road Traffic Regulations.

- The driver before use will visually check Skips / Bins regarding condition.

- It is not unknown for the hook to fail to locate on the bin – this means on rare occasions the bin will fall back when lifting. The load must, therefore, be evenly distributed.

- The driver must decide if it is safe to lift the bin without special protection measures, e.g. banks man / fencing

Appendix – Confirmation

HAMPSHIRE
ENVIRONMENTAL SERVICES

I confirm that I have received, read and fully understood the current issue of Hampshire Environmental Services' Demolition Standard Systems of Work.

Name:_____

Position:_____

Signed:_____

Date:_____

Current Issue:_____