S&T
INTERIORS AND
CONTRACTING

Risk Assessment and Method Statement Evaluation

Project:	Russell Hotel	Project No:	0143
Contractor Name:	Drive	Trade:	Builder
Document No:	DE 015	Revision:	C
Start Date:	T.B.A	Finish Date:	T.B.C
Activity:	Palm Court		

All Method Statements and Risk Assessments submitted by sub-contractors must be suitable and sufficient for the work being undertaken. That means that they must address the significant risks and be clear on how such risks will be controlled.

The following evaluation should be completed by an SMSTS-qualified member of the S&T site team PRIOR to allowing works to proceed. Therefore, sufficient time must be allowed for the initial evaluation and re-submission, if required.

The Health & Safety Team will review the RAMS where higher risk activities are involved, such as excavations, work at height, etc. or if the SMSTS manager would like to refer it for a second opinion.

Any sections marked as 'unsatisfactory' means that the RAMS will be rejected and must be amended and re-submitted for review. Works can only proceed once the RAMS are deemed to be suitable and sufficient.

This is not an exhaustive checklist, but a guide for minimum requirements.

This check is not an acceptance of responsibility for the way in which work is planned, resourced and carried out and all works must be monitored on an ongoing basis.

RISK ASSESSMENTS	Check / Consider	Satisfactory	Unsatisfactory	N/A	Comments/action needed
Project Particulars	• Project name and address • Contractor's details • Date that risk assessments were undertaken • Signed and dated	✓			
Risks Identified and Recorded	• Persons at risk – operatives, public, etc • How might they be harmed • Risks are evaluated and precautions stated • The assessment has a review section	✓			
All significant risks are considered	• All significant risks have been identified – ie risks that, if left uncontrolled, could result in serious injury / ill-health or damage	✓			
Additional Comments					

Risk Assessment and Method Statement Evaluation

METHOD STATEMENTS	Check / Consider	Satisfactory	Unsatisfactory	N/A	Comments/action needed
Project Particulars	• Project name and address • Contractor's details • Date of method statement • Signed and dated	✓			
Work Detail	• What is the activity • Where will it be undertaken • Timescales, working hours • Estimated size of workforce	✓			
Method of Work	• How will safe access and egress be achieved • Measures to control residual risks • Surveys, work instructions	✓			
Skills and training	• Is specific training stated • Experience and knowledge required for specific roles, eg supervisors	✓			
Supervision Arrangements	• Ratio of supervisors against number of operatives • Vulnerable groups – apprentices, etc • Supervision arrangements for sub-let companies	✓			
Movement of Materials and Storage	• Movement of goods between different levels / areas • Interface between traffic and others • Other hazards, such as sources of ignition	✓			
Tools, plant and equipment	• Is it clear what plant and equipment will be used • Are they being used for the correct task • How will they be inspected and maintained	✓			
PPE and safety equipment	• Is specific PPE / RPE stated, rather than a general requirement? • Has the correct PPE been stated • Have users been trained to use it • Have arrangements for the storage, inspection and maintenance of PPE been stated	✓			
Environment	• Are arrangements for waste disposal stated • Are pollution prevention measures stated	✓			
First Aid and Emergency Planning	• Are first aid arrangements adequate for number of operatives, geographical spread, etc • Emergency arrangements in place for fire, etc	✓			
Additional Comments					

Is the method statement and risk assessment satisfactory?					
Initial Review By (Name):	Date:	Signature:	Status A - ACCEPTED	Status B – ACCEPTED WITH COMMENTS	Status C - REJECTED
J. Ferraro	2-3-17		✓		

If rejected at initial review:			
Which sections need amending?			
2nd Review By (Name):		Date:	
Accept / Reject		Signature:	
If rejected at second review:			
Which sections need amending?			
3rd Review By (Name):		Date:	
Accept / Reject		Signature:	
If the method statement / risk assessment fails to meet the required standards on the third review, the sub-contractor must seek advice from their HSE Advisor			

HEALTH AND SAFETY METHOD STATEMENT
DRIVE EDGWARE LTD
PALM COURT ROOF STRIP OUT WORKS AT THE RUSSELL HOTEL

Client / Contractor: S&T	**Site Address:** RUSSELL SQUARE	**MS Ref No:**	DE-018 Rev - C
		Date:	24/02/2017
Site Supervisor(s) Shane Hickey Eric Navickas Mick Cottle	**Contact No:** 07545349090 07909568159 07815125641	**No of Operatives:** Various	
First Aider: Site Management	**Day Works:** Yes	**Night Works:** No	

LOCATION OF TASK OR ACTIVITY:

- All works to be undertaken within the Russell Hotel project.

ALL OPERATIVERS WILL FAMILARISE THEMSELVES WITH THIS METHOD STATEMENT AND ANY INSTRUCTION FROM THE DRIVE EDGWARE FOREMAN BEFORE ANY WORKS COMMENCES.

IF OPERATIVES ARE UNSURE AS TO THEIR ACCURACY, IDENTIFY A STRUCTUAL PROBLEM OR IDENTIFY ANY HEALTH AND SAFETY MATTER, THEY ARE TO LIAISE WITH THE DRIVE EDGWARE FOREMAN IMMEDIATELY.

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DATE WORKS TO COMMENCE: Advised as February 2017

1. SCOPE OF WORKS

This method statement is intended to cover the removal of roof coverings within the Palm Court area at Russell Hotel. This method statement is to be read in conjunction with RAMS013 Burning and Appendix B

This method statement will cover the following activities:

- Initial considerations inc. Occupational Health Risks.
- Strip roofing materials
- Burning of steels.

2. SEQUENCE OF WORKS

Initial Considerations

Prior to commencing works, and in line with The Control of Lead at Work Regulations, all personnel involved in the tasks laid out within these RAMS will fully brief on its contents and the occupational health effects they may take on. The Control of Lead at Work Regulations 2002 (CLAW) place a duty on employers to prevent, or where this is not reasonably practicable, to control employee exposure to lead.
The occupational exposure limit for lead in air set out in the Regulations is 0.15 mg/m3, and blood lead suspension levels for males and females are 60 and 30ug/dl, respectively. The following health effects can occur due to uncontrolled works with lead:

- changes in the blood which might lead to anaemia
- effects on the nervous system
- effects on the kidney
- altered functioning of the testicles which could lead to infertility

The hazardous effects rating for the removal of lead in the Palm Court roofing is deemed as low with no significant risk foreseen. This is due to the removal technique and using hand tools only so as to not penetrate the lead leading to potential airborne dust particles. With this said, personal hygiene whilst carrying out these works must still be carried out prior and post works. On-site welfare is provided for hand washing with soap and warm water. Full mandatory PPE must be work alongside additional coveralls. Barrier creams are available to be used with safety gloves. To avoid ingesting lead, do not eat, drink or smoke while working. This method statement must be followed as it is set out, should this not be the case further advice must be sought from site management.

The work area will have sufficient signage and barriers put in place in order to notify operatives of the works taking place and prevent access to any unauthorised personnel. Access to the main site will be via the rear entrance located on Herbrand Street. Prior to works commencing, the work area will be cleared of debris, other trades materials and cleared of any asbestos by a licenced contractor and Drive will be notified once complete and works able to commence. A designed working platform with capacity of works loading will be erected by others for use to complete these works. Where necessary all temporary works will be signed off by S&T engineer prior to works commencing. Work will commence on the Palm Court roof by firstly stripping back the roof coverings. These coverings consist of aluminium sheets, lead and timber batons. Dependant on the materials will depend on the means of removal. [redacted] Designed working platforms with all compliant edge protection will be in place for operatives to work off. Once commencing the

roof strip hand tools will be used to prise the existing materials off the roof where they will be cleared in sequence to works. The area below will be a full exclusion zone with the perimeter one metre from the working deck provided. Where the operatives are dealing with lead substances full site mandatory PPE will be worn with the use of coveralls. The lead is ***not*** to be cut/burned or penetrated in anyway, from survey it is only foreseen the lead will be "peeled" back exposing further roof coverings. If during the works this will alter works are to cease and a reassessment of the removal means will be undertaken.

Once roof coverings are removed the steel frame will be sectioned and cut with an oxy-propane system dissecting into small sections to be lowered and removed via wheel barrows. This is covered further within the aforementioned RAMS.

Once the area is completely cleared, any barriers taken down and handed back ready for the next contractor.

3. HAZARD IDENTIFICATION/RISK ASSESSMENT

Please see the following Risk Assessments below;

1. Fire
2. Lead
3. Noise
4. Slips, trips and falls
5. Manual handling
6. PPE
7. Dermatitis, allergic reaction, burns or skin absorption
8. Working at heights
9. Asbestos
10. HAV's

4. PREVENTATIVE AND PROTECTIVE MEASURES

A permit to work system will be operated when its requirement is identified in the Risk Assessment. These may include (but not limited to):

- Mobile towers or Podium steps to be checked and signed weekly.
- All scaffolding to be checked weekly by competent person.
- Hot works
- Demolition in specific areas.
- Harness

Refer to control measures listed within the Risk Assessment(s).

5. TRAINING, INFORMATION AND INSTRUCTION

All operatives will have a valid CSCS card, which will be checked and recorded at the site induction. Prior to any person commencing work on site they must attend a site induction arranged by S&T. Those attending the induction must sign the induction sheets. All operatives will be fully trained and competent to handle the plant and equipment to which they are assigned and be made aware of any job specific health and safety risks associated. Hot works permits will be issued before works commence. E.g. Use of Angle Grinders Operatives must be PASMA trained to be permitted to erect mobile towers or podium steps. The works involving the use of working at height equipment must ensure competency, full checks of equipment, worn correctly at all times and stored as per manufacturers guidelines. Operatives change angle grinder blades must have abrasive wheel certification.

Regular toolbox talks will be held covering safety aspects such as Working at height, Access, Plant, COSHH, PPE, etc.

6. SUPERVISION AND RESOURCES

- 1x Supervisor
- Up to 10 x General Operatives

7. MATERIALS

n/a

8. PLANT & EQUIPMENT

- Barriers
- Various hand tools

All tools and equipment shall be maintained in good working order in accordance to the manufacturer's guidelines. When not in use tools and equipment are to be kept in the stores or within designated secure storage areas. Electrical equipment will be PATested and records kept.

9. TECHNICAL INFORMATION

All lifting accessories will have certificates of which copies will be kept in the site file.

10. ACCESS AND EGRESS

Access into the main site will be via the main site entrance located at the side of the building.

Access to site for operatives is via the public footpath at Herbrand St
All deliveries will be notified and scheduled with S&T with a minimum of 24h notice.
Delivery vehicles will arrive and wait on Herbrand St.
Site working hours:

Monday to Friday: 8:00am to 5:00pm

11. WASTE CONTROL

Drive nominated wait and load disposal trucks are to be used for removal of waste off site.
All waste documents will be given in on a monthly basis to S&T logistics manager.

12. THIRD PARTY PROTECTION

All vehicles arriving to site must adhere to the Traffic Management Plan.
The vehicles will be under direction from the traffic marshal to safely guide the vehicle.
All works will be conducted within the site boundary
Refer to control in the risk assessment.
Appropriate signage is to be in place in order to inform operatives of the works taking place.

13. EMERGENCY ARRANGEMENTS

In case of injury, initial treatment should be provided by Drive and/or S&T site first-aiders or emergency services depending on injury. The First Aid facilities are located within the office on the Lower ground floor.
Injured persons requiring further treatment should be taken to Hospital, by either site transport, or ambulance (dial 999). Follow Safety Policy requirements for accident reporting procedure. Any incidents will be reported to S&T staff.

The nearest A & E centre is located at:

UCH
235 Euston Rd.
London
NW1 2BU

Evacuation procedures and fire escape routes will be explained in the S&T induction. High standards of housekeeping and site tidiness must be maintained to ensure clear access at all times, should the emergency access be required.
In the event of a working at height emergency, the following will occur;

Inform the Site management and S&T as soon as practicable to make them aware that there is an emergency situation and to request assistance. From this point instructions will be sought from S&T and Drive will adhere to the rescue procedure that S&T implement.

14. COMMUNICATION

Once S&T approval has been given to this method statement, the supervisors, as named on the cover page will be issued with the method statement and required to sign the coversheet that will be retained in the Site Safety File.

Operatives involved in the operations will have the risk assessments and method statement explained to them at a specially convened "toolbox talk".

Proof of attendance will be required and an acknowledgement sheet signed and dated by all that attend.
Regular toolbox talks will be held covering safety aspects such as access, plant, manual handling, PPE, etc.

15. PPE

The minimum compulsory PPE required for all operatives is:

- Gloves to EN388 3141 standard to be used for dry works. EN374 nitrile gloves to be used for wet works and lead removal.
- Eye protection will be worn at all times. Eye protection to SK EN 166-FT Standards.
- Dust masks will be provided to FFP3 standard where required.
- Hard Hat to be worn at all times to BS EN 397:2012&A1 standard.
- Safety footwear to be worn at all times. Steel toecap. EN 345-1 S2 standard.
- Drive Logo High Viz vests are to be worn by all operatives.
- Safety goggles will be worn while hot works in progress. EN166 1B 349 Standards.
- Hearing Protection (Muffs for operator) EN352-4:2001
- Coveralls EN ISO 13982-1 Type 5

Refer to control measures for additional PPE listed within Risk Assessments attached.

16. POWER

All tools used for this activity will be 110V electric.
Tools will be connected to 16amp power supply.

All tools will be PAT tested before arriving on site and will be checked regularly.

17. LIGHTING

All lighting required for Access and Egress to site is to be provided by S&T.

The supply of flood lights for these works will be provided by S&T.

18. WORKING PLATFORMS

Mobile towers and Podium Steps are to be erected by PASMA trained operatives, these will be monitored daily by supervisor to ensure safety.
S&T appointed scaffolders will erect working platforms to design having the full capacity to of the working load.

19. EXCAVATIONS

No excavation works are anticipated for these works.

20. FIRE

Any hot works carried out for this activity will only be undertaken when the correct Hot Works Permit is in place. i.e. cutting steel beams. This is to be submitted by Drive supervisor and signed off at the end of the day.
Drive will provide fire extinguishers nearby during hot works to ensure safety.

In the event of fire, operatives are to follow the evacuation procedures as given in the site induction and exit the areas as instructed/directed by the designated Fire Marshals.

21. INFORMATION & INSPECTION

A copy of this method statement will be submitted to S&T for comment / approval.

Once approved, personnel from Drive will review method statements regularly. This will be carried out on site by the Drive safety representative along with the drive leading Site/Project/Construction Manager. All temporary works are to be inspected prior to next stage works commencing.

22. MONITORING

Site management, supervision, visiting managers and safety advisers will monitor personnel compliance with this method statement.
Fire watchmen will be in place to ensure the safety of the hot works taking place.
Note: It is important that all method statements are followed explicitly. Unauthorized variations are not permitted.

CONTROL & COMMUNICATION:		
Site Foremen are: Method Statements and Risk Assessments to be read and signed by all site operatives prior to work commencing.		
METHOD STATEMENT PREPARED BY:		
Name	Signature	Position
I have read and understood the method statement and associated Risk and COSHH Assessment and agree to abide by its contents and work in a safe manner • **I will be working as part of the discipline described here** • **I have been given a briefing on the method statement / Risk assessment and I confirm I am aware of the emergency arrangements.** • **I declare that I am not under the influence of alcohol or drugs.** • **I will not consume alcohol or drugs during my working hours.** • **I am not required to take and have not taken any medication, which may cause drowsiness.**		

DRIVE EDGWARE LTD
RISK ASSESSMENT
PALM COURT ROOF STRIP OUT WORKS AT RUSSELL HOTEL
DE-RA-018

RISK ASSESSMENT TITLE:	PALM COURT ROOF STRIP OUT WORKS				
CLIENT:	S&T				
LOCATION / SITE:	RUSSELL HOTEL	**RISK ASS NO:**	DE-RA-018 Rev - C	**DATE:**	24.02.2017

PROBABILITY RATING (P) (Of Exposure to or creating a Hazard)	**SEVERITY RATING (S)** Damage to property and/or structural damage may also be considered in your assessments.	**P X S = RISK RATING (R)**
0 = Zero to Impossible 1 = Very Unlikely 2 = Unlikely 3 = Likely 4 = Very Likely 5 = Almost Certain	0 = No Injury or Illness 1 = First Aid Injury or Minor Illness 2 = Minor Injury Potential or Illness 3 = '7-Day' Injury Potential or Illness 4 = Major Injury Potential or Acute / Chronic Illness 5 = Fatality, Permanent Disabling Injury, Acute / Chronic Illness	0 - 5 Low: No further action required 6 - 14 Medium: Take action(s) to reduce risk. 15 -25 High: Take immediate actions(s) to reduce danger.

	HAZARDS IDENTIFIED BEFORE CONTROL MEASURES	**RISK RATING**		
		P	**S**	**R**
1	**FIRE**	5	2	10
2	**LEAD**	5	2	10
3	**NOISE**	3	2	6
4	**SLIPS, TRIPS AND FALLS**	1	2	2
5	**MANUAL HANDLING**	3	2	6
6	**PPE**	5	0	5
7	**DERMITITIS, ALLERGIC REACTION, BURNS OR SKIN ABSORBTION**	1	3	3
8	**WORKING AT HEIGHTS**	3	3	9
9	**HAV's**	1	2	2
10		-	-	-
11	**ASBESTOS**	1	4	4
12		-	-	-

EXPOSED PERSONS PLEASE INDICATE Y/N:					
OPERATIVE/S	Y	**OTHER EMPLOYEES**	N	**OTHER TRADES**	Y
MEMBERS OF PUBLIC	N	**YOUNG PERSONS**	N	**OTHERS**	N
TOTAL NUMBERS AFFECTED:	10-15	**DURATION OF EXPOSURE:**	5-8 HRS	**FREQUENCY OF EXPOSURE**	DAILY

DRIVE EDGWARE LTD
RISK ASSESSMENT
PALM COURT ROOF STRIP OUT WORKS AT RUSSELL HOTEL
DE-RA-018

	CONTROL MEASURES	RESIDUAL RISK		
		P	S	R
1	**HOT WORKS- FIRE, FLAMMABLE VAPORS, GAS, BURNS:** • Drive are to supply their own fire extinguishers. • To be used by competent operatives. • Fire plan and emergency procedures in place for establishment and information provided at induction including muster points • Hot works permit approved by S&T management. • Fire watch to observe operations at all times • Maintain fire watch for 1 hour after completion of works. • Sparks to be dampened down using site water supply. • Areas to be cleared of combustible materials within a 10m radius of works. • Fire screens to be used to protect operatives and control spread of sparks, where required. • Hot works to cease one hour before end of shift or as detailed in hot works permit. • Correct PPE to be worn at all times i.e. correct burning goggles, gloves and coveralls. • No hot works unless fire watch is in place. • Only store and use the minimum quantities and do not leave full or empty containers lying around. • No smoking or other heat source allowed near this type of material or liquid, to do so will mean instant dismissal from site for the offender. • Store in fire resistant containers in small quantities and keep locked ready for use. • If spillage occurs to or on the individual, they must remove the item of clothing immediately and discard or clean as soon as possible. • Do not hang clothing up to dry or leave lying around. • If skin or eyes are contaminated with highly flammable liquids, it must be washed off immediately and seek medical attention. • Operatives using highly flammable liquids should be given training on how to use them safely. • The training should also include the correct use of fire extinguishers. • Toolbox talks will be given on an on-going basis to ensure the workforce understand the importance of handling/using highly flammable liquids safely. • Ensure all leads are in good order. Do not use if leads look damaged. Always work away from the trailing leads to not damage the leads. • If you suspect a gas leak tell everyone in the vicinity to turn off anything that could ignite the gas.	5	2	10
2	**LEAD** • RAMS to be fully explained and understood by any operatives partaking in the works. • Toolbox talks will be given on an on-going basis to ensure the workforce understand the importance of handling lead safely. • Ensure for these works no cutting/burning/drilling or other penetration of the lead substances occurs. Should works require this to alter, all works must cease for a further review of risk to be taken. • Operatives to understand the occupational health risk and the need for work sequence to be followed explicitly. • Full hygiene practices must be carried out during these works. No eating, drinking or smoking whilst works are taking place.	5	2	10

3	**NOISE:** • Provision and use of appropriate PPE. 3M ear plugs will be used. • Select low noise machinery. • Endeavour to reduce noise by purchasing modern equipment. • Where possible use absorption screens. • Noise assessments to be carried out. • Suitable ear defenders must be worn. • Reduce drop heights wherever possible to reduce the noise produced by any falling materials. • Others to be made aware of the noise and if necessary exclusion zones are to be established. • Ear protection BS EN 352-2:2002 is to be worn where necessary.	3	2	6
4	**SLIPS, TRIPS AND FALLS:** • Avoid running or walking too fast • Avoid carrying items, which may disrupt your view. • Ensure that there is sufficient lighting available. • Provide safe access routes. • Ensure good housekeeping. • Ensure suitable footwear is worn at all times such as BS EN 13287:2004 boots. • Provide good lighting • Use appropriate signage to warn others of slippery surfaces. • Pump excess water to improve floor visibility and reduce the risk of slipping on wet surfaces. • Use handrails where possible. • Avoid trailing leads across footpaths and work areas. • Suspend leads above head height wherever possible. • Refer to correct use of ladders control measures. • Ensure vision is not obscured. E.g. dirty glasses • Works areas are to be swept clean of all waste and kept clear of any waste or obstacles that could cause injury. (e.g. bag of cement left in the middle of the work area.) • Holes and bumps should be clearly marked and made good to ensure safety. • Ensure all staircases have handrails on at least one side.	1	2	2

5	**MANUAL HANDLING** • If available, the beam hoists is to be utilised in order to move any heavy materials. • Check the weight of the load before lifting. • Operatives must not exceed the 20kg lifting limit • Operatives are to use wheel trollies where practical to move objects. • If there are no operatives available to help assist lifting loads above 20kg, do not attempt to lift alone and notify management as soon as possible. • Two operatives must not lift loads greater than 35kg. • Operatives will be trained in kinetic lifting. • Bend knees and keep an upright posture. • Grasp the load firmly and as close to the body as possible. • Keep elbows tucked into the body. • If practical, split the load into smaller loads in order to make it lighter. • Carry out task in an appropriate pace. • Ensure that there is a place to put the load down wherever it is to be moved to. • Avoid the need for excessive repetitive manual handling. • Allow sufficient recovery time by doing a variety of tasks. • Full five point PPE is to be worn at all times whilst on site. • Heavier or more frequently used items are to be left in readily accessible areas to avoid the need to over-reach and carrying items over a distance etc. • Secure the load to ensure that it does not shift unexpectedly whilst being handled. • Ensure that objects with sharp corners and jagged edges are sufficiently covered. • Wear gloves to EN388 3141 standard whilst carrying objects that have sharp corners and/or jagged edges. • Ensure appropriate space is available for manoeuvring. • Ensure routes are unobstructed. • Ensure appropriate lighting is available. • Avoid clothing, which may impede the manual handling operation.	3	2	6
6	**PPE** • Full five point PPE is to be worn at all times whilst on site. • EN388 3141 gloves are to be used for general dry works. • Follow hygiene procedures • Wash hands after use of toilet. • Don't put/store gloves in hardhat as this can cause contamination. • Ensure PPE fits correctly. • Operatives are to be qualitatively face fitted to ensure that masks fit securely to ensure no unexpected dust can seep into the mask. • All operatives are to be clean-shaven to ensure hairs to not interfere with the seal of the mask. • Ensure that PPE does not cause health risks such as entanglement in machines (loose High-Viz getting caught on plant.)	5	0	5
7	**DERMITITIS, ALLERGIC REACTION, BURNS OR SKIN ABSORBTION** • Substances that are potentially harmful when in contact with the skin will be identified and have a COSHH assessment carried out before work commences. • The manufacturers safety data sheet should accompany each COSHH assessment. • Results of COSHH assessments will be conveyed to the workforce by means of toolbox talks. • Operatives to be made aware of the precautions to be taken including: PPE, first aid requirements and emergency procedures to be followed before using the product. • Any additional training or assessment deemed necessary will be provided. • All necessary short term, long term monitoring and medical surveillance as identified by the COSHH assessment will be carried out.	1	3	3

DRIVE EDGWARE LTD
RISK ASSESSMENT
PALM COURT ROOF STRIP OUT WORKS AT RUSSELL HOTEL
DE-RA-018

8	**WORKING AT HEIGHT** • Scaffolding in place should be erected and signed off by competent scaffold contractor and approved by the client and or Drive. • All scaffolding will have a scafftag, which is to be signed and dated correctly. • Barriers and signage will be put in place to restrict access and warn others of work activities. • Do as much work as possible from the ground. • Ensure equipment is suitable, stable and strong enough for the job. • Maintain and check equipment regularly. • Be extra cautious when working on or near fragile surfaces. • Edge protection will be installed where necessary. (Handrail, netting etc.) • Endeavour to use an existing stable work place that does not require extra controls. • Ladders are to be correctly positioned and installed. • Working areas should be kept clear of waste. • Ensure a safe escape is available for operatives. • Install stop blocks at the edge of excavations to protect workers in the pit and to stop objects falling over the edge. • Keep plant as far away as possible. • All vehicles on site are to be under control of a banksman at all times. • Ladders should only be used for access. • All ladders will be tied or fit for purpose. • Do not overload ladders. • Do not overload scaffolding. • Ensure you do not overreach on a ladder. • All personnel will be instructed how to use the above equipment safely. • All holes will be adequately covered. • All debris will be cleared away from the working area. • Adequate instruction/training will be given to all persons using this equipment. • Do not undertake working at height tasks if you are un-authorised. Only competent operatives are to take on such tasks. • All working at height equipment will be visually inspected daily and recorded weekly. • Any faulty equipment is to be discarded immediately and replace. • Only trained, competent operatives are to use the above mentioned equipment.	3	3	9
9	**H.A.V.S** • Operatives are to monitor the exposure time during a working day. • Times must not exceed the times applicable to the machine and current industry standards. • Avoid exposure to vibration over long periods of time. • Stagger exposure times (e.g. half an hour on, half an hour off etc.) • Where possible automate the works to reduce the amount of vibration on the body. • Ensure the equipment allocated for the tasks are suitable and can do the job efficiently. • Unsuitable equipment is likely to make the task longer, which increases the exposure to vibrations, more than necessary. • Select the lowest vibration tool that is suitable. • Limit the use of high vibration tools wherever possible. • Use suspension systems in order to reduce the need to grip heavy tools tightly. • Ensure equipment is properly maintained in order to prevent any unnecessary increases in vibration. • Do not use blunt or damaged concrete breakers and chisels. • Replace items such as grinding wheels when needed in order to keep exposure time as short as possible.	1	2	2
10		-	-	-

11	**Asbestos** • The principal contractor must supply an asbestos register and Drive management will check to ensure that the works area in question has been surveyed and cleared of any asbestos if found • All Drive operatives and supervisors will carry out an asbestos awareness course before working on site • Register is to be checked to ensure as reasonably practical that no asbestos issues will arise once works progress • A competent Drive supervisor will continuously monitor any signs or issues which may be a cause for concern • If during works a substance looking like asbestos is found, all works will stop immediately • The area is to be isolated as long as there is no risk posed to personal • The principle contractor is to be notified immediately and is to advise on how to proceed in order to close out the issue	1	4	4

IS RESIDUAL RISK LEVEL ACCEPTABLE?	Yes	
SERIOUS AND IMMINENT DANGER RISKS IDENTIFIED:	Yes	
EMERGENCY ACTION REQUIRED:		No

ADDITIONAL MEASURES REQUIRED:	**ACTION BY**	**BY WHEN**
COMMUNICATION: Site operatives to liaise with site foreman or site management team regularly during works. MS/RA to be communicated to all operatives.	Drive Foreman	Daily
PPE: Hard hats, Hi-visibility vests, safety footwear to EN345 1 S2, gloves to EN 388 3141 standard, ear muffs to be used above 85dB(A), eye protection to SK EN 166-FT, coveralls EN ISO 13982-1 Type 5 and dust masks FFP3 will be worn at all times.	Drive Foremen/Site Operatives	Daily
EVACUATION OF OPERATIVES IN AN EMERGENCY: Site Foreman will ensure that operatives make themselves familiar with Mastercraft fire and emergency procedures. Operatives will use either front or rear fire exit, dependent on where they are situated on site.	Drive Foreman	Daily

CIRCULATION OF RISK ASSESSMENT: PLEASE INDICATE Y/N					
PRINCIPAL CONTRACTOR:	**Y**	**EMPLOYEES:**	**Y**	**SUBCONTRACTOR:**	Y
SITE COPY:	**Y**	**CLIENT:**	**N**	**OTHER:**	N

ON-SITE ASSESSMENT BY:					
SIGNED:	***C.B***	**POSITION:**	H&S	**DATE:**	24/02/2017
PRINT NAME:	C.Buxton			**REVIEW DATE:**	As Required

SAFETY DATA SHEET

according to Regulation (EU) 2015/830

BLM BRITISH LEAD ROLLED LEAD SHEET

Revision date 2016-04-01

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Name of Substance: **LEAD METAL (SHEET)**

EC number:	**231-100-4**
EC name:	**Lead**
CAS number (EC inventory):	**7439-92-1**
Registration number	

1.2 Relevant identified uses of the substance or mixture and uses advised against

No specific uses advised against have been identified, other than legal restrictions on the use of lead.

1.3 Details of the supplier of the safety data sheet

BLM British Lead
Peartree Lane
Welwyn Garden City
Hertfordshire AL7 3UB
Tel: +44 01707 324595
Fax +44 01707 328941
E mail: barryr@britishlead.co.uk

1.4 Emergency telephone number

In case of emergency **Tel. 01707 324595 (Mon – Fri, 0800hrs – 1700hrs)**

SECTION 2: Hazards identification

2.1 Classification
Dangerous Substances Directive 67/548/EEC – Lead sheet is an article and not in scope of the EU Dangerous Substances Directive.

Classification Labelling and Packaging Regulation EC 1272/2008 – Lead sheet is an article and not in scope of the EU Dangerous Substances Directive.

2.2 Labelling
Classification Labelling and Packaging Regulation EC 1272/2008 - None required.

2.3 Other hazards
Lead in sheet or massive form is not a significant health hazard.
However, melting or operations generating lead dust, fume or vapour can result in sufficient lead entering your body to be hazardous to your health.
Oxidation products (including lead compounds) may also form on the surface of metallic lead.
Lead is heavy and care should be taken when lifting and handling.
See section 11 for more information on the health hazards of lead compounds.

SECTION 3: Composition

3.1 Substances

Not applicable

3.2 Mixtures

Lead Sheet:

Substance	EC Number	REACH registration number (if applicable)	Concentration (% w/w)	Hazard Classification
Lead	231-100-4		>99	**Repr. 1A**; H360FD: May damage fertility. May damage the unborn child. **Lact.; H362:** May cause harm to breast-fed children. **STOT RE1; H372:** Causes damage to organs through prolonged or repeated exposure.
Copper	231-159-6		0.03-0.06	None
Non-hazardous impurities	n/a	n/a	remainder	None

SECTION 4: First aid measures

The measures below are unlikely to be relevant whilst lead is in its solid metallic state. However, they are relevant in the event of exposure to fumes, vapour or dust or oxidation products that may form on the surface of lead sheet.

4.1 Description of first aid measures

EYE CONTACT: Ensure that contact lenses are removed before rinsing eyes.Separate eyelids, wash the eyes thoroughly with water (15 min). Seek medical attention if irritation persists

INHALATION: Move person to fresh air. Seek medical attention.

SKIN CONTACT: Remove contaminated clothing. Wash skin immediately with soap and water. Seek medical attention if irritation persists.

INGESTION: Rinse out mouth and give plenty of water to drink. Seek medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Clinical manifestations of lead poisoning include weakness, irritability, asthenia, nausea, abdominal pain with constipation, and anaemia.

4.3 Indication of any immediate medical attention and special treatments needed

Symptoms of poisoning may occur after several hours; seek medical attention.

SECTION 5: Firefighting measures

5.1 Extinguishing media

Water spray jet; Dry sand. Extinguishing media that must not be used for safety reasons: Full water jet; Foam.

5.2 Special hazards arising from the substance or mixture

In case of fires, hazardous combustion gases are formed: Lead fumes; Lead oxide.

5.3 Advice for fire fighters

Appropriate breathing apparatus may be required. Wear protective clothing.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Ensure adequate ventilation. Avoid dust formation. Avoid contact with skin, eyes and clothing. See section 8 for further details.

6.2 Environmental precautions

Do not discharge into the drains/surface waters/groundwater. In case of entry into waterways, soil or drains, inform the responsible authorities.

6.3 Methods and materials for containment and clearing up

Collect mechanically (preferably in dry condition). Send in suitable containers for recovery or disposal. When picked up, treat materialas prescribed under heading "Disposal considerations".

6.4 References to other sections

See sections 8 and 13 for further advice.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Provide good ventilation of working area (local exhaust ventilation, if necessary). The product is not combustible.

7.2 Conditions for safe storage, including any incompatibilities

No special measures required. Do not store together with foodstuffs. Do not store together with animal feedstocks. Do not store with acids or alkalis. Do not store with combustible materials.

7.3 Specific end uses(s)

Specific Exposure Scenarios are included in an Annex to Section 16.

SECTION 8. Exposure controls/personal protection

8.1 Control parameters

8.1.1 Human Toxicity values

OELs - Lead and inorganic compounds (as Pb):

	Limit values – 8 hours mg/m³	Limit values – short term mg/m³
European Union	0.15 inhalable aerosol	
Austria	0.1 inhalable aerosol	0.4 inhalable aerosol
Belgium	0.15	
Denmark	0.05 inhalable aerosol	0.10 inhalable aerosol
France	0.1 inhalable aerosol	
Germany (AGS)	0.1 inhalable aerosol	
Hungary	0.15 inhalable aerosol 0.05 respirable aerosol	0.60 inhalable aerosol 0.2 respirable aerosol
Italy	0.15 inhalable aerosol	
Ireland	0.15	
Poland	0.05	
Spain	0.15 inhalable aerosol	
Sweden	0.1 inhalable aerosol 0.15 respirable aerosol	
Switzerland	0.1 inhalable aerosol	0.8 inhalable aerosol
United Kingdom	0.15	

Biological action levels (inorganic lead):

EU	70 µg/dL (Binding Limit Value)
Germany	40 µg/dL 10 µg/dL (for woman, age below 45 year`s) [Suspended]
UK	60 µg/dL 30 µg/dL (for woman of reproductive capacity)
France	40 µg/dL 30 µg/dL (for woman of reproductive capacity)
Ireland	70 µg/dL
Spain	70 µg/dL

DN(M)ELs for workers (inorganic lead):

Exposure pattern	Route	Descriptors	DNEL/DMEL (appropriate unit)	Most sensitive endpoint
Acute - systemic effects	Dermal (mg/kg bw /day)	NA	NA	NA
	Inhalation (mg/m^3)	NA	NA	NA
Acute - local effects	Dermal (mg/cm^2)	NA	NA	NA
	Inhalation (mg/m^3)	NA	NA	NA
Long-term - systemic effects	Systemic (µg lead /dL blood)	NOAEL = 40 µg/dL NOAEL = 10 µg/dL	40 µg/dL 10 µg/dL	Adult neurological function Developmental effect on foetus of pregnant women
Long-term – local effects	Dermal (mg/cm^2)	NA	NA	NA
	Inhalation (mg/m^3)	NA	NA	NA

8.1.2 Ecological toxicity values

Reliable acute aquatic toxicity test results (tests conducted with soluble lead salts):

Test organism	Species	Endpoint	Value
Algae	*Pseudokirchneriella subcapitata*	72h EC50 (pH>6.5-7.5) 72h EC50 (pH<7.5-8.5)	52.0 µg Pb/L 233.1 µg Pb/L
Invertebrates	*Daphnia magna* *Ceriodaphnia dubia*	48h EC50 (pH>7.5-8.5) 48h EC50 (pH>5.5-8.5)	107.5 µg Pb/L 73.6 µg Pb/L
Fish	*Oncorhynchus mykiss* *Pimephales promelas*	96h LC50 (pH>6.5-8.5) 96h LC50 (pH>5.5-8.5)	107.0 µg Pb/L 194.2 µg Pb/L

Listed values are for tests performed at most sensitive pH. Other organisms have also been evaluated in the chemical safety report. References are listed in section 16.

Reliable chronic toxicity test results (tests conducted with soluble lead salts) can be found on the following page:

Compartment	Species	Value (EC_{10}, NOEC)
Freshwater	*Hyalella azteca* (42d, mortality)	8.2 µg Pb/L (dissolved lead)
Marine water	*Mytilus trossolus* (48h, developmental abnormalities)	9.2 µg Pb/L (dissolved lead)
Freshwater sediment	*Tubifex tubifex* (28d, reproduction)	573 mg Pb/kg dw
Marine sediment	*Neanthes arenaneodentata (28d, growth)*	680 mg Pb/kg dw
Terrestrial (plants)	*Hordeum vulgare* (yield based on root)	57 mg Pb/kg dw
STP Micro-organisms (Protozoa)	Protozoan community (24h-LC10)	1.0 mg Pb/L

Listed reports are for most sensitive organisms. References are listed in section 16.

The following Predicted No Effect Concentrations (inorganic lead) have been derived for the above environmental compartments:

Compartment	PNEC Value
Freshwater	3.1 µg Pb/L (dissolved lead)
Marine water	3.5 µg Pb/L (dissolved lead)
Freshwater sediment (with/without bioavailability correction)	41.0/174.0 mg Pb/kg dw
Marine water sediment	164.2 mg Pb/kg dw
Soil	212.0 mg Pb/kg dw
STP Micro-organisms	0.1 mg Pb/L

8.2 Exposure controls

8.2.1 Organisational measures

Personal Hygiene: Ensure workers follow simple hygiene rules (e.g. do not bite nails and keep them cut short, avoid touching or scratching face with dirty hands or gloves); Ensure workers do not wipe away sweat with hands or arms; Ensure workers use disposable tissues rather than a handkerchief; Prohibit drinking, eating and smoking in production areas, or access to eating and non-production areas in working clothes; Ensure workers wash hands, arms, faces and mouths (but preferably shower) and change into clean clothing before entering eating areas; For high exposure workplaces, separate rooms for cleaning hands,
removal of clothes, showers and clean clothes may be necessary; Ensure workers handle dirty working clothes with care; Allow no personal belongings to be taken into production areas, or items that have been used in production areas to be taken home. Ensure general shop cleanliness is maintained by frequent washing/vacuuming. Clean every workplace at the end of every shift.

Blood lead monitoring: Set in place a certified monitoring regime which covers all site activities; Define a policy for submitting workers to regular blood lead monitoring, including increased frequency for workers undertaking high-risk jobs and workers with elevated blood lead levels; Ensure all workers have a blood test prior to working on site. Set an "action level" that is typically 5 µg/dL below the exposure limit deemed to be safe. If the action level is exceeded, appropriate measures are to be taken, to prevent further increases in blood lead. If the safe threshold is exceeded, continue or begin ban on overtime, ensure strict hygiene procedures are followed, undertake detailed inspections to ensure correct use of personal protective equipment, undertake detailed inspections to ensure recommended workplace procedures are followed, move employee to workplace where exposure is expected to be lower or remove from lead environment altogether, further increase blood lead sampling frequency, and continue frequent sampling until results are below the first action level.

8.2.2 Personal Protection Equipment

Respiratory protection: Suitable respiratory protective device recommended if work activity is likely to result in formation of lead fumes, vapours or dust. In case of brief or low level exposure use dust mask or half mask with particle filter P2. Assess the need to wear respiratory protective equipment in production areas. Consider use effective masks accompanied by a compliance policy (ensure proper shaving; ensure workers do not remove RPE in production areas in order to communicate). Where masks are used, employ formal mask cleaning and filter changing strategies.

Hand Protection: Protective gloves. Material of gloves: Neoprene or Leather.

Eye protection: Safety glasses.

Skin protection: Wear protective work clothing. For workers in areas of significant exposure, provide sufficient working clothes to enable daily change into clean clothes. In such cases all work clothing should be cleaned by the employer on a daily basis and is not permitted to leave the work site.

8.2.3 Environmental Protection

One or more of the following measures may if necessary be taken to reduce emissions to water:

- Chemical precipitation: used primarily to remove the metal ions
- Sedimentation
- Filtration: used as final clarification step
- Electrolysis: for low metal concentration
- Reverse osmosis: extensively used for the removal of dissolved metals
- Ion exchange: final cleaning step in the removal of heavy metal from process wastewater

One or more of the following measures may if necessary be taken to reduce emissions to air:

- Electrostatic precipitators using wide electrode spacing: Wet electrostatic precipitators:
- Cyclones, but as primary collector Fabric or bag filters: high efficiency in controlling fine particulate (melting): achieve emission values Membrane filtration techniques can achieve
- Ceramic and metal mesh filters. PM10 particles are removed
- Wet scrubbers

Lead removal from treatment works should be at least the minimum default 84% removal used in the CSR. Solid material collected from on-site treatment must be sent for metal recovery or treated as hazardous waste. Waste water treatment sludge must be recycled, incinerated or landfilled and not used as agricultural fertiliser.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance:	Grey-blue solid
Odour:	None
Odour threshold:	Not applicable
pH:	Not applicable
Melting point:	326°C
Boiling point:	> 600°C
Flashpoint:	Not applicable
Evaporation rate:	Not applicable
Flammability:	Not applicable
Upper/lower flammability limits:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	11.45
Solubility in water:	185 mg/L at 20°C
Solubility in other solvents:	Not applicable
Partition coefficient (log Kow):	Not applicable
Autoignition temperature:	Not applicable
Decomposition temperature:	Not applicable
Viscosity:	Not applicable
Explosive properties:	Not explosive
Oxidising properties:	Not oxidising

9.2 Other information

None.

SECTION 10: Stability and reactivity

10.1 Reactivity

Lead is not a reactive substance and no reactive hazards are expected.

10.2 Chemical stability

Expected to be stable under normal conditions of use.

10.3 Possibility of hazardous reactions

No hazardous reactions expected under normal conditions of use.

10.4 Conditions to avoid

Not applicable.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

No decomposition if used as directed.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

Lead in massive or sheet form is not a significant health hazard. However the following information is relevant if you swallow any lead or breathe in lead dust, fume or vapour.

Toxicokinetic assessment	Lead is slowly absorbed by ingestion and inhalation and poorly absorbed through the skin. If absorbed, it will accumulate in the body with low rates of excretion, leading to long-term build up. Part of risk management is to take worker blood samples for analysis to ensure that exposure levels are acceptable.
(a) acute toxicity	Lead massive metal is not considered to be acutely toxic. It is not easily inhaled or ingested, and if it is accidentally ingested normally passes through the gastrointestinal system without significant absorption into the body. Lead is not easily absorbed through the skin.
(b) skin corrosion/irritation	Studies have shown that sparingly soluble inorganic lead compounds are not corrosive or irritating to skin, and this lack of effect is expected also for metallic lead. This conclusion is supported by the lack of reports of irritant effects from occupational settings.

(c) serious eye damage/irritation	Studies have shown that sparingly soluble inorganic lead compounds are not corrosive or irritating to eyes, and this lack of effect is expected also for metallic lead. This conclusion is supported by the lack of reports of irritant effects from occupational settings.
(d) respiratory/skin sensitisation	There is no evidence that lead causes respiratory or skin sensitisation.
(e) germ cell mutagenicity	The evidence for genotoxic effects of highly soluble inorganic lead compounds is contradictory, with numerous studies reporting both positive and negative effects. Responses appear to be induced by indirect mechanisms, mostly at very high concentrations that lack physiological relevance.
(f) carcinogenicity	There is some evidence that inorganic lead compounds may have a carcinogenic effect, and they have been classified by IARC as probably carcinogenic to humans (Group 2A). However, it is considered that this classification does not apply to lead in articles, given the very low bioavailability of metallic lead. Carcinogenicity studies of lead metal powder have been negative. Epidemiology studies of workers exposed to inorganic lead compounds have found a limited association with stomach cancer. IARC has concluded that lead metal is possibly carcinogenic to humans (Group aB).
(g) reproductive toxicity	Exposure to high levels of inorganic lead compounds may cause adverse effects on male and female fertility, including adverse effects on sperm quality. Prenatal exposure to inorganic lead compounds is also associated with adverse effects on the development of the unborn child. There is evidence that neurobehavioral development in children is affected by exposure to lead.
(h) STOT-single exposure	Inorganic lead compounds have generally been found to be of relatively low acute toxicity by ingestion, in contact with skin, and by inhalation, with no evidence of any local or systemic toxicity from such exposures. The bioavailability of lead metal is low and acute lead exposure is not expected to result in acute toxicity effects.
(i) STOT-repeated exposure	Lead is a cumulative poison and may be absorbed into the body through ingestion or inhalation. Although inhalation and ingestion of lead in massive form are unlikely, poor hygiene practises may result in hand to mouth transfer which maybe significant over a prolonged period of time. Inorganic lead compounds have been documented in observational human studies to produce toxicity in multiple organ systems and body function including the haemotopoetic (blood) system, kidney function, reproductive function and the central nervous system.
(j) aspiration hazard	Lead metal is a solid and aspiration hazards are not expected to occur.

SECTION 12: Ecological information

The environmental effects have been assessed using read-across from studies with similar inorganic lead compounds.

12.1 Toxicity
Lead massive metal is not classified as hazardous to the aquatic environment, due to its low solubility and rapid removal from the water column. Inorganic lead compounds are considered to be acutely toxic in the environment and also to present a long term hazard to aquatic organisms. Toxicity will depend on the level of free lead ion in solution, which in turn is affected by pH, water hardness, salinity, etc. Lead toxicity is expected to be greater in softer waters.

12.2 Persistence and degradability
Lead is rapidly removed from the water column and binds to suspended solid and sediment. Lead is an inorganic substance and does not degrade. It is persistent in the environment. Biodegradation is not relevant for inorganic substances.

12.3 Bioaccumulative potential
Inorganic lead is considered to be bioaccumulating in the environment, and may accumulate in aquatic and terrestrial plants and animals.

12.4 Mobility in soil
Lead metal has very low solubility and is expected to be adsorbed onto soils and sediments. Mobility is expected to be low.

12.5 Results of PBT and vPvB assessment
The PBT and vPvB criteria in Annex XIII of the REACH Regulation do not apply to inorganic substances.

12.6 Other adverse effects
No information available.

SECTION 13: Disposal considerations

13.1 Waste treatment methods
Should be recycled or disposed as hazardous waste. Do not allow product to reach sewage system. Different Pb-bearing wastes resulting from the processes described above are generated in the form of dross, flue dust and slag. These waste products are mainly recycled in the production process or landfilled.

European waste catalogue:
17 04 03 Lead

SECTION 14: Transport information

Not classified as dangerous for transport.

14.1	UN Number	Not applicable
14.2	UN Proper shipping name	Not applicable
14.3	Transport hazard class(es)	Not applicable
14.4	Packing group	Not applicable
14.5	Environmental hazards	Not applicable
14.6	Special precautions for user	None

SECTION 15: Regulatory information

15.1 **Safety, health and environmental regulations/legislation specific for the substance or mixture**

15.2 **Chemical Safety Assessment**
A Chemical Safety Assessment has been carried out for this product (available on request)

SECTION 16: Other information

H Statements used in Section 3
Repr. 1A; H360FD: May damage fertility. May damage the unborn child.
Lact.; H362: May cause harm to breast-fed children.
STOT RE1; H372: Causes damage to organs through prolonged or repeated exposure.

Additional Safety information for Handling Lead Sheet
Health and Safety Information on precautions to take when handling lead sheet is available from the European Lead Sheet Industry Association (ELSIA) at http://elsia.org.uk/product-stewardship/health-safety/

Revision information:

BLM_eSDS_003

Legal Statement: The information and recommendations in this safety data sheet are, to the best of our knowledge, accurate as of the date of issue. Nothing herein shall be deemed to create any warranty, express or implied. It is the responsibility of the user to determine the applicability of this information and the suitability of the material or product for any particular purpose

List of Abbreviations
Acute Tox.: Acute Toxicity
CAS No: CAS Registry Numbers
Carc.: Carcinogenic
CLP: Classification, Labeling and Packaging of chemicals
DN(M)EL: Derived No-Effect Level or Derived Minimal Effect Level
DW: Dry weight
EC No: European Commission number
EC Name: European Commission Name
EHS: Environmentally hazardous substance
IARC: International Agency for Research on Cancer
IBC: International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk
LC_{50}: Lethal Dose, 50%
LD_{50}: Lethal Dose, 50%
MARPOL 73/78: International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978 NOAEL: No observed adverse effect level.
NOEC: No Observed Effect Concentration
OELs: Occupational Exposure Limits
P Statement: Precautionary statement
PNEC: Predicted No-Effect Level
PBT: Persistent, bio-accumulative, toxic
REACH: Registration, Evaluation, Authorisation and Restriction of Chemicals
Repr.: Reprotoxic
STOT: Single Target Organ Toxicity
SDS: Safety Data Sheet
vPvB: Very Toxic Very Bio-accumulative
WW: Wet weight

References from Section 8.1.2

Acute Toxicity data:

Diamond JM, Koplish DE, McMahon III J and Rost R. (1997). Evaluation of the water-effect ratio procedure for metals in a riverine system. Environmental Toxicology and Chemistry, Vol 16, No 3, pp. 509-520, 1997.

Grosell M, Gerdes R, Brix KV (2006). Influence of Ca, humic acid and pH on lead accumulation and toxicity in the fathead minnow during prolonged water-borne lead exposure. Comparative Biochemistry and Physiology, Part C 143 (2006) 473-483.

Grosell M (2010b). The effects of pH on waterborne lead toxicity in the fathead minnow, Pimephales promelas - 24 February 2010. Testing laboratory: University of Miami, USA.

Davies PH, JP Goettl, JR Sinley and NF Smith (1976). Acute and chronic toxicity of lead to rainbow trout Salmo Gairdneri, in hard and soft water. Water Research, Vol 10, pp 199-206.

Roger JT, Richards JG, Wood CM (2003). Ionoregulatory disruption as the acute toxic mechanism for lead in the rainbow trout (Oncorhynchus mykiss). Aquatic Toxicology 64 (2003) 215-234.

Schubauer-Berigan MK et al. (1993b). pH-dependent toxicity of Cd, Cu, Ni, Pb and Zn to Ceriodaphnia dubia, Pimephales promelas, Hyalella azteca and Lumbriculus variegatus. Environmental Toxicology and Chemistry, Vol 12, pp. 1261-1266, 1993.

Spehar RL, Fiandt JT. (1986). Acute and chronic effects of water quality criteria-based metal mixtures on three aquatic species. Environ Toxicol Chem 5:917-931.

Chronic Toxicity Data:

Aery N C and Jagetiya B L (1997). Relative toxicity of Cadmium, Lead and Zinc on Barley. Commun. Soil Sci. Plant Anal., 28(11&12), 949-960. Testing laboratory: Dept. of Botany, University College of Science, M. L. Sukhaida University, Udaipur, India.

Bengtsson G., Gunnarsson T. and Rundgren S. (1986). Effects of metal pollution on the earthworm Dendrobaena Rubida (Sav.) in Acified soils. Water, Air and Soil Pollution 28 (1986) 361-383. Testing laboratory: University of Lund. Ecology Building, Helgonavagen, Sweden.

Besser JM, Brumbaugh WG, Brunson EL and Ingersoll CG (2005). Acute and chronic toxicity of lead in water and diet to the amphipod Hyalella azteca. Environmental Toxicology and Chemistry, Vol. 24, No. 7, pp. 1807-1815, 2005.

Chang F-H and Broadbent F E (1981). Influence of trace metals on carbon dioxide evolution from a yolo soil. Soil Science, vol 132 No 6, december 1981.

Farrar JD, Bridges TS. (2003). Effects of lead on Leptocheirus plumulosus, Neanthes arenaceodentata, Chironomus tentans and Hyalella azteca following long-term sediment exposures. Report for the International Lead Zinc Research Organization. US Army Engineer Research and Development Center, Vicksburg, Mississippi.

Madoni P, Davoli D, Gorbi G, Vescovi L (1996). Toxic effect of heavy metals on the activated sludge protozoan community. Water Research, 30 (1), 135-141. Testing laboratory: Istituto di Ecologica, Universita di Parma, Italy.

Madoni P, Davoli D, Guglielmi L (1999). Response to SOUR and AUR to heavy metal contamination in activated sludge. Water Research, 33 (10), 2459-2464. Testing laboratory: Dipartimento di Scienze Ambientali, Universita di Parma, Italy.

Nguyen LTH, Roman Y, Zoetardt H, Janssen CR. (2003). Ecotoxicity of lead to the tubificid oligochaete Tubifex tubifex tested in natural freshwater sediments. Draft final report to the International Lead Zinc Research Organization. Laboratory of Environmental Toxicology and Aquatic Ecology, Ghent University, Belgium.

Wood C. M. & Nadella S. (2010). Effects of salinity and DOC on Pb Toxicity to Marine Organisms. Testing laboratory: Dept. of Biology, McMaster University, Hamilton, Canada L8S 4K1. Report date: 2010-01-01.

COSHH ASSESSMENT

Trade Name of Substance	Lead	Assessment Number	0003	Site	Russell Hotel

Serious Health Hazard	Acute Toxicity	Corrosive	Health Hazard	Flammable	Oxidising	Gas Under Pressure	Hazardous to Environment
							
✓			✓		✓		

Health Hazards (from MSDS)	Lead in sheet or massive form is not a significant health hazard. Harmful: possible risk of irreversible effects through inhalation, in contact with skin and if swallowed. Lead is a toxic metal. Low concentrations of various metal impurities may be present. Oxidation or corrosion during storage will cause a surface film of compounds of lead. Eyes: Check for and remove any contact lenses. In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical attention if irritation occurs. Skin: Wash with soap and water. Cover the irritated skin with an emollient. Get medical attention if irritation develops. Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. Ingestion: Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If large quantities of this material are swallowed, call a physician immediately. Loosen tight clothing such as a collar, tie, belt or waistband.
Work Activity / How is the substance used	Removal/demolition process of longstanding lead substances.
Routes of exposure caused through activity	Inhalation – n/a Skin

Frequency of Exposure	Daily	~~Weekly~~	~~Monthly~~	
Duration of Exposure	~~<30 minutes~~	~~30-60 minutes~~	~~1-2 hours~~	~~2-4 hours~~	4+ hours
Amount of substance used	~~<0.5 litres / KGs~~	~~0.5-1 litres / KG~~	~~1-5 litres / KG~~	5+ litres / KG
Those at Risk (Strick all that do not apply)	Operatives	~~Others on site (Contractors, Visitors, Site Mgmt)~~	~~Public~~

Susceptible Workers (e.g. respiratory issues, dermatitis, pregnant)	No	If yes, details:	
Risk Rating (prior to Control Measures in Place)	~~High~~	~~Medium~~	Low

Control Measures

Use (mixing, application)	**Removal for disposal**

						
Yes	Yes	Yes	Where applicable	**No**	Where applicable	Yes

COSHH ASSESSMENT

Hygiene / Health	• *Operatives adhere to good occupational hygiene practices*
	  ○ *Wash hands after use and before eating, drinking, smoking*
	  ○ *Cuts/abrasions covered with waterproof dressings*
	• *If operatives are exposed to product or have an adverse reaction (e.g. dermatitis) they raise this immediately with their Supervisor and Site Management to ensure first aid measures outlined below are followed. Operative will cease working with product and (Company) will organise for an occupation health referral as required.*

Storage Requirements	**Precautions:** Keep locked up. Keep away from heat. Keep away from sources of ignition. Empty containers pose a fire risk, evaporate the residue under a fume hood. Ground all equipment containing material. Do not ingest. Do not breathe dust. Wear suitable protective clothing. If ingested, seek medical advice immediately and show the container or the label. Keep away from incompatibles such as oxidizing agents. **Storage:** Keep container tightly closed. Keep container in a cool, well-ventilated area.
Waste Disposal	Recover and reclaim or recycle, if practical. Confirm disposal procedures with environmental engineer and local regulations. Treat the disposal of solids as hazardous waste. Dispose of in accordance with Local Authority requirements.
Emergency Procedures	
First Aid	INHALATION: Move the exposed person to fresh air at once. Perform artificial respiration if breathing has stopped. Keep the affected person warm and at rest. Get prompt medical attention. INGESTION: NEVER MAKE AN UNCONSCIOUS PERSON VOMIT OR DRINK FLUIDS! Get affected person to drink plenty of water or milk. After the liquid has been swallowed, try to induce vomiting by having affected person touch back of his throat with finger. Get medical attention immediately. SKIN: Remove affected person from source of contamination. Promptly flush with plenty of water if molten chemical gets on the skin or non-impervious clothing. Get medical attention immediately. **Most important symptoms and effects, both acute and delayed** Clinical manifestations of lead poisoning include weakness, irritability, asthenia, nausea, abdominal pain with constipation, and anaemia. **Indication of any immediate medical attention and special treatments needed** Symptoms of poisoning may occur after several hours; seek medical attention.
Fire Extinguisher to use	**Extinguishing media** Water spray jet; Dry sand. Extinguishing media that must not be used for safety reasons: Full water jet; Foam. **Special hazards arising from the substance or mixture** In case of fires, hazardous combustion gases are formed: Lead fumes; Lead oxide. **Advice for fire fighters** Appropriate breathing apparatus may be required. Wear protective clothing.
Spill Procedure	n/a

Risk Rating (Following Control Measures in Place)	~~High~~	~~Medium~~	Low

Assessment Completed By	C.Buxton		
Signature	*C.Buxton*		
Position	Safety Advisor	**Date**	February 2017
Supplier Contact Details	n/a	**Review Date**	Minimum 6-month review: August 2017