MASONRY REPAIRS METHOD STATEMENT
52 PRINCESS STREET, MANCHESTER

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METHOD STATEMENT

Project Name:	52 Princess Street, Manchester	**Project Number:**	J1820
Work Activity:	Masonry Repairs	**Approved By:**	
Date:	25 July 2019	**Site Foreman:**	Tom Roberts
Prepared By:	Steven Eccleshare	**First Aider:**	Tom Roberts

1. DESCRIPTION OF WORKS:

The scope of works includes Doff Cleaning, Masonry Repairs, Brick Replacements & Repointing to four external elevations of 52 Princess Street, Manchester.

Types of Repairs include: -

- Re pointing works
- Masonry Repairs
- Brick Replacements
- Hot Water Doff Cleaning

2. INDUCTIONS:

All inductions are to be booked in prior to starting on site.
All inductions are to be at site office.

3. RESOURCES

Name (Role)	Qualifications & Training	Induction carried out by	Date of Induction
Steven Eccleshare (Contracts Director)	• Directors Role for Health & Safety (31/03/2023) • SMSTS (Exp 31/12/19) • CSCS - Site Manager (Exp 04/2024) • NVQ level 6 - Construction Contracting Operations Management		
Dave Leigh	• CSCS – Heritage skills Stone Mason (Exp Jan 2021) • Environmental Awareness (Exp 28/02/2023) • Slinger/Banksman (Exp 15/05/2021) • PASMA (Exp 29/03/2024)		

	• Manual Handling (From 18/03/2019) • IPAF (Exp 31/12/2020) • First Aid at Work (Exp 28/03/2020) • Face Fit Tested		
Tom Roberts (Supervisor)	• SSSTS (Exp 31/03/2022) • CSCS Card (Exp Jan 2020) • Manual Handling (From 17/02/2017) • First Aid (Exp 28/03/2020) • Face Fit Tested		
Mick Finney	• CSCS Card (Exp Dec 19) • PASMA (Exp Jul 19) • Face Fit Tested		

Working Hours

Working hours are as follows: -
Works are based on a 39-hour week
Monday-Thursday 8.00am - 4.30pm
Fridays 8.00am - 3.30pm

Water/Power

Power
To be supplied by Main Contractor

Water
Mains water supply adjacent to work area

Materials

The following materials are required to carry out repair works as described in Bullen Conservation Ltd scope of works

- Natural Hydraulic lime
- Sand /well graded
- Natural Earth pigments
- Fine sands
- Bricks

Permits

Permit to access work area.

4. ACCESS:

All access equipment required to carry out the works in line with the scope of works are listed below: -

Tube and fitting access scaffold supplied by Armitage Construction

5. MATERIALS HANDLING:

A list of materials to be used on the project as listed below: -

- Natural Hydraulic lime
- Sand /well graded
- Gorilla Buckets
- Natural Earth pigments
- Fine sands
- Bricks

Occupational Health/COSHH

Control of Task Specific Risks

Significant Activity Hazards	Controls
Working at Heights	All scaffold to be erected by fully trained operatives and introduce a scafftag check system. A rescue plan to be in place in all works at height. Do not stand on guard rails or handrails Do not over reach. Do not climb outside of the tower
Manual Handling	Manual Handling Must be avoided wherever possible. All operatives to have received Manual handling training. All bagged materials to be maximum 25 kgs. Delivery vehicles shall be unloaded within main compound. Correct gloves, footwear, clothing etc shall be worn. Two persons shall be instructed to lift no more than 33kgs in any one joint lift.
Control of hazardous substances. Lime/Sand/Resin/Dust/Fuel	All hazardous substances hazardous to health should be completely removed and replaced using a safer alternative. As a last resort the correct P.P.E MUST be provided, worn and maintained when handling hazardous substances. Manufactures information and Data sheets must be readily available at all times. All waste materials are to disposed of as the manufacturer's recommendations at a licenced tip with written proof.
Masonry Dust	Respirators to be face fit tested. Operatives to be clean shaven. Respirator filters to be changed on a regular basis. High impact goggles to be worn at all times of cutting out masonry by hand.

All COSHH in attached Appendix: -
Womersley St Astier Lime
Keim Restauro-Fuge
Tarmac - Sand

Storage

All fuel cans to be removed from site each day and stored in work vans off site.
All waste to be removed each day to skips provided on site by Armitage Construction.

P.P.E:

All correct P.P.E to be worn whilst handling or working with the materials as indicated on product data sheets in specific task sheets.

Fuelling

All fuelling of plant to be carried out in a well-ventilated area using the correct P.P.E.

Waste Disposal

All waste from site is to be removed each day to skips on site.

Mixing of Materials (Sand/Lime)

All mixing must be carried out in a well-ventilated area with the relevant floor protection in place. Correct P.P.E must be worn whilst handling lime and fuel.

Handling

Operatives must be fully trained in manual handling.

All materials delivered to site are to be under 25kg. If any materials are larger than 25kg then an individual lifting task must be carried out by Tom Roberts (Supervisor).

Delivery of Materials

All large deliveries of materials must be taken at main yard distributed via Bullen Conservation Ltd.'s van to individual work areas.

All deliveries must be booked in with Armitage Construction prior to delivery.

All delivery drivers must wear full hi-visibility clothing whilst delivering materials.

6. PLANT:

The following is a list of essential plant required to complete the specified works: -

- Small hand tools
- 110v drill
- 110 v mixing paddle
- 110 v Leads
- Small duty breakers
- Small hand tools Hammers, chisels etc.

Small plant to be fully PAT tested and visually inspected daily.

Copies of Face Fit Test Records to be handed to Armitage Construction.

Hand arm vibration records to be completed daily and a copy handed to Armitage Construction.

Bullen Conservation Ltd supervisor to complete a plant reception form and pass over to Armitage Construction site manager upon request. The reception form is to include all test dates and when next test date is due.

All cutting and grinding plant must be used by well wetting materials along with dust extraction units at all times.

7. P.P.E:

PPE issued for specific task

Gloves	Hi-Vis cold grip/cut resistance level 2/resistance level 4/EN388
Filters	3M P3 filters (3125)
Respirators	3M 6300 respirator/clean shaven
Protective clothing	Full pulsarail orange hi-vis clothing
Safety glasses	Low light glasses/anti-fog/anti-scratch
Safety goggles	Ultrasonic goggle/anti-fog/anti-scratch/impact goggle - EN166-1B
Safety helmet	Comfort plus safety helmet - centurion reflex
Ear defenders	Port west PW40 - ear defenders - EN352
Boots	Steel sole plates (no rigger boots)

8. ENVIRONMENT:

All Bullen waste to be washed down off the façade and collected in hessian sacking in a tea bag arrangement, then removed to waste skip on site.

Bullen Conservation Ltd.'s operatives to form a rescue net on the ground floor to prevent and waste removed paint going into the drains.

9. SERVICES:

Prior to Bullen Conservation Ltd starting works on site Armitage Construction to carry out a survey of all work areas and isolate any services which may affect the scope of works or the safety of the operatives.

10. ACCIDENTS & EMERGENCY PROCEDURE

In the case of an accident on site Bullen Conservation Ltd.'s operatives are to be made aware of the arrangements for local hospitals and the Armitage Construction rescue procedure in the site safety induction.

Working at Height Rescue plan

In the likelihood of a fall or emergency on a scaffold, then operatives working in the vicinity to notify nearby workers of an accident.

Armitage Construction will then call the emergency services if required and provide the following information: -

Details of the Operative.
Male/Female
Age –approximate
Weight-approximate
Known problems from the fall/broken leg. Conscious, Unconscious
Equipment damage
Amount of time fallen/accident

The injured party should be kept warm and still until the emergency services arrive.

11. WELFARE:

Armitage Construction to provide Bullen Conservation Ltd with welfare on site.

12. METHODOLOGY

Masonry restoration repairs

Bullen Conservation Ltd.'s operatives to receive full site briefing by Bullen Conservation Ltd.'s Health and safety Director (Steve Eccleshare) including RAMS, COSHH and Task Briefing.

Bullen Conservation Ltd.'s operatives to report to site office for daily site safety briefing from Site Manager.

Bullen Conservation Ltd.'s operatives to be fully aware of methods of work and associated risks.

Proceed to work area.

1) Identify defective areas of spalled and loose masonry ready for repairs.

2) An assessment to be made if the defective stone can be carried out as a cosmetic repair.

3) Ensure that all drains are covered to prevent blockage from materials.

4) Areas of masonry to be cut back and restored as marked up on drawings.

5) Once the areas to be restored have been identified, prepare a full specification to carry out the following repairs.

6) A sample area to be prepared prior to undertaking the works for approval by the Architect.

7) Carefully cut back decayed or otherwise defective masonry as scheduled to form a sound mechanical base finished square or undercut to avoid feather edging.

8) Where necessary, introduce non-ferrous dowels and reinforcement, this will be necessary according to the depth of the repair.

9) Thoroughly brush down the exposed areas to remove loose dust and wet with clean water.

10) Progressively restore forward the disturbed areas of stonework using Bullen Conservation Ltd specialist restoration mortar in even coats.

11) This being well tamped around reinforcement and finished with a wood float to original/ modified line and profile.

12) Upon completion of repairs, all original joints within the area of restoration to be cut out to the full depth of repair and repointed to match surrounding work.

13) Bag up all waste materials and empty into skips provided.

I confirm having read the Method Statement, Health and Safety Policy and all associated Appendices. All my work will be carried out in full compliance with this information

Print Name:	**Signature:**

RISK ASSESSMENT

Site:	52 Princess Street, Manchester	**Distribution:**
Job No:	J1820	Armitage Construction
Prepared by:	Steve Eccleshare	Bullen Conservation Supervisor (Tom Roberts)
Date:	25/07/2019	Bullen Conservation (Site operatives)

Process	Hazard	Risk	Level of Risk	Controls
Delivery of plant	Contact /impact	Collisions to general public, visitors and employees	High	Protective barriers to be in place to cordon off work area along with pedestrian walkways in place. Warning lights to be fitted to plant. Competent Banksman to be used in all plant movements.
Working at height	Falls of persons	Death or serious injury to employees or others	High	Any platform is to be fitted with handrails and toe boards. A rescue plan to be in place in all works at height. Do not stand on guard rails or handrails Do not over reach Do not climb outside of the scaffold
Cutting out of Masonry	Falling materials, flying particles etc			All plant and tools are to be securely leashed to prevent falling and causing injury below. An exclusion zone should be formed around the scaffold to prevent risk of falling tools / materials etc

Manual Handling	Muscular/skeletal injuries	Injury to employees	Med/High	Manual Handling Must be avoided wherever possible. All operatives to have received Manual handling training. All bagged materials to be maximum 25 kgs. Delivery vehicles shall be unloaded before 10.00 am. Correct gloves, footwear, clothing etc shall be worn. Two persons shall be instructed to lift no more than 33kgs in any one joint lift.
Control of substances hazardous to health	Contact with Hazardous substances.	Damage to health of employees and others around you.	Med/High	All hazardous substances hazardous to health should be completely removed and replaced using a safer alternative. As a last resort the correct P.P.E MUST be provided, worn and maintained when handling hazardous substances. Manufactures information and Data sheets must be readily available at all times. All waste materials are to disposed of as the manufacturers recommendations at a licenced tip with written proof. COSHH assessments attached
Masonry Dust	Inhalation Flying fragments	Damage to lungs Damage to eyes	High High	Respirators to be face fit tested. Operatives to be clean shaven. Respirator filters to be changed on a regular basis. High impact goggles to be worn at all times of cutting/drilling masonry. Dust extractors to be used alongside of dampening down masonry. Wet cutting saws to be used when practicle. Grinders with vacuums to be used as an alternative to wet cutting.

Drilling/cutting	Hand arm vibration	Injury to employees	Med	Eliminate work process entirely. Use alternative methods. Carry out vibration records as guidance sheet. Provide P.P.E in the form of padded gloves. Train operatives in the correct use of power tools and ensure job/task rotation to reduce exposure to a minimum. Do not exceed trigger times (EAV) as per the assessments Record usage time for monitoring purposes Keep warm at all times to ensure blood circulation Do not overgrip tools
Slips / Trips				Keep working area clear of materials and debris
Struck by moving vehicles				Use designated pedestrian walking routes. Adhere to exclusion zones and do not enter unless authorised

Risk Assessment Review

Item Needing Action	Action to be Taken	Priority of Item (1 low, 5 high)	Task Assigned to	Completion Date

Manual Handling Assessment Checklist

Site:	52 Princess Street, Manchester	**Date:**
Job Description: Doff Cleaning, Masonry Repairs, Brick Replacements & Repointing to four external elevations		
Name: Steve Eccleshare	**Signature:**	
Is an assessment needed **– Is there a potential risk of injury to an employee during the work activity**		**Yes**
Does the task involve lifting more that 25kg for a single person or 33kg for a two-man lift		**Yes / No**
If the answer is yes to either question then the assessment should be continued		

Task	Can mechanical means be employed Yes / No	If yes – control measures to be put in place
Loading / Offloading		
Transporting to required location		
Lifting to position		
Manoeuvring into place		

If the answer is no to any of the activities, can alternative measures be put in place to effectively reduce the risk e.g. levers / rollers / jacks / multiple lifting (3 persons = 37.5kg max. 4 persons = 50kg max)

Task	Yes / No	Control Measures

If the answer is no to the remaining tasks, can the environment be changed to allow control measures to be implemented, e.g. alter scaffold / increase access routes / alter programme to eliminate other trades nearby

Task	Yes / No	Control Measures

If the answer is still no to any of the activities, then under the present conditions an effective means of eliminating the risks or reducing to an acceptable level cannot be achieved and advice should be sought from your supervisor before commencing this work activity.

Pure and Natural Hydraulic Lime (NHL 3.5) Product Data

St Astier Natural Hydraulic Limes (NHL)

Conforms to European Norms EN 459 and BS 459
Strength factor: 3.5 (Moderately hydraulic)
Residue @ 0.09 mm: 6.5%
Density (volumetric weight) : typical 650gr / litre
Available (free) lime after slaking $Ca(OH)_2$: 25% +
Packing: 25kg. Bags

Contains no additives.
Whiteness index: 72
Surface cover (cm2pergram): 9000
Expansion : < 1mm
Residue of quick lime after slaking: < 1%
Shelf life: 8-12 months kept sealed and dry

MORTARS	Compressive strengthN/mm²				Elasticity Moduli (Mpa)		
MIX RATIO	EN459*	1 : 2	1 : 2.5	1 : 3	1 : 2	1:2.5	1 :3
7 DAYS		0.75	0.57	0.53			
28 DAYS	3.5*	1.88	1.47	1.34	9010	9000	8070
6 MONTHS		7.1	5.34	3.94	15260	13501	13150
12 MONTHS		7.5	5.90	3.90	15280	13620	13150
24 MONTHS		8.63	6.00	3.97	17480	13785	13670
Consumption for 1m³ of mortar Kg. +/- 10%		305	244	216			
EN 459/BS 459 (mortar ratio 1:1 by volume, with ISO 679 Sand)							

Mixing: can be mixed in cement mixers.

Application by spray gun: possible. Please consult us.

Working temperatures: not below 5°C or above 30°C. Make sure that high suction materials are thoroughly dampened before application. Avoid rapid drying due to high temperatures or strong winds by curing with a light water mist several times a day if necessary. See *"Protecting Lime Mortar"*.

SUITABLE FOR LATH WORK / LIME CONCRETE/INJECTION/GROUTING See relevant sheets

Reworking: possible within 12 hours

Mortar composition: MASONRY/POINTING/ CAPPING/ BEDDING/ ASHLAR

Binder: sand ratio: from 1:1.5 to 1:3 depending on the support/background conditions, the size of the joint and the fineness of the sand. Always use well graded sands (3 - 4mm down to 75 microns).
See also *"Applications & Good Working Practices Sands for Lime Mortars"* .

RENDERING

A. Scratch coat (3-5mm) 1 VOLUME OF NHL 3.5 : 1.5 VOLUMES OF SAND - Cast on
B. Undercoat (15-20mm) 1 VOLUME OF NHL 3.5 : 2 VOLUMES OF SAND*
C. Finishing (5-10mm) 1 VOLUME OF NHL 3.5 : 2.5 VOLUMES OF SAND
With very fine sands possibly containing clays the binder content may have to be reduced.
*At this dosage the consumption is approx. 0.35kg. of NHL 3.5 per m² for each mm thickness.
Please also refer to *"Applications & Good Working Practices - NHL Renders."*

For further Guidance, contact your St Astier Distributor.

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Bullen Conservation Ltd, Lowerhouse Works, Lowerhouse Street, Oldham, OL1 3NN
Tel: 0161 633 6528 Fax: 0161 633 7064
Registered in England No. 4938870
VAT Registered No. 831 7046 44

COSHH ASSESSMENT

PRODUCT:	OCCUPATIONAL EXPOSURE LIMIT:
Masonry Dust (Inc. Joints)	0.1mgm^3

CHEMICAL COMPOSITION:
A fine dust called respirable crystalline silica (RCS)

HAZARD CLASSIFICATION:
Irritant- Silicosis, Chronic obstructive pulmonary disease (COPD), Lung cancer and Asthma

RISKS: Inhalation of dust
Contact with eyes.

APPEARANCE:
Fine dust.
Colour varies dependant of material cut.

ASSESSMENT OF EXPOSURE

WHERE USED:	Cutting mortar joints, stone & bricks.
FREQUENCY OF USE:	Every day.
METHOD OF HANDLING:	N/A

ASSESSED RISKS IN CONTECT OF USE:
Operatives & others may inhale dust during cutting, drilling, sanding, mixing and Shovelling/sweeping dry material

CONTROL MEASURES:
Face test fitted Dust mask with FFP3 filter. Water bottle to suppress dust. Do not dry sweep wet area first, use vacuum and dust extraction equipped power tools

PERSONAL PROTECTIVE EQUIPMENT

						DUST MASK	✓
GLOVES	✓	GOGGLES	✓	COVERALL	✓	RESPIRATOR	✓

MSDS ON FILE	YES	NO✓	HEALTH SURVEILLANCE REQUIRED	YES	NO✓

SPECIAL CONSIDERATIONS:
Face fit test approved dust mask.

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COSHH ASSESSMENT

PRODUCT: Natural Hydraulic Lime	OCCUPATIONAL EXPOSURE LIMIT:	5mgm^3

CHEMICAL COMPOSITION:
Calcium carbonate, silica and alumina

HAZARD CLASSIFICATION:
Irritant

RISKS: Chemical burns to skin
Contact with eyes.
Inhalation of airborne dust.

APPEARANCE:
Light grey to white powder

ASSESSMENT OF EXPOSURE

WHERE USED:	In masonry rebuilding works
FREQUENCY OF USE:	Daily
METHOD OF HANDLING:	Only competent operatives, Handle with care

ASSESSED RISKS IN CONTECT OF USE:

Inhalation of lime dust and contact with eyes and skin burning during mixing.

CONTROL MEASURES:
PPE and face fit test approved dust mask should be worn.
General personal hygiene.

PERSONAL PROTECTIVE EQUIPMENT

						DUST MASK	✓
GLOVES	✓	GOGGLES	✓	COVERALL	✓	RESPIRATOR	✓

MSDS ON FILE	YES ✓	NO	HEALTH SURVEILLANCE REQUIRED	YES	NO ✓

SPECIAL CONSIDERATIONS:
Dust masks to be face fit test approved

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COSHH ASSESSMENT

PRODUCT: Sand	OCCUPATIONAL EXPOSURE LIMIT:	30mgm^3

CHEMICAL COMPOSITION:
Natural aggregates – various minerals Inc Silica

HAZARD CLASSIFICATION:
Irritant

RISKS: irritant to eyes
Prolonged exposure to Silica dust may cause Respiratory damage

APPEARANCE:
Red and Brown in colour

ASSESSMENT OF EXPOSURE

WHERE USED:	In masonry rebuilding works
FREQUENCY OF USE:	Daily
METHOD OF HANDLING:	Only competent operatives, Handle with care, minimise generation of dust

ASSESSED RISKS IN CONTECT OF USE:

Avoid dry sweeping, dampen material to prevent airborne dust

CONTROL MEASURES:
Gloves, safety glasses, protective clothing
General personal hygiene.

PERSONAL PROTECTIVE EQUIPMENT

						DUST MASK	
GLOVES	✓	GOGGLES	✓	COVERALL	✓	RESPIRATOR	

MSDS ON FILE	YES ✓	NO	HEALTH SURVEILLANCE REQUIRED	YES	NO ✓
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SPECIAL CONSIDERATIONS:
Avoid dry sweeping in confined areas

TARMAC TRUPAK

HEALTH AND SAFETY PRODUCT DATA SHEET

NATURAL AGGREGATES

1. Identification of Substance

Product Name:	All types of Sand, Gravel, Granite, Gritstone, Crushed Rock containing Quartz, Limestone.
Company:	Tarmac Trupak, Plumtree Industrial Estate, Harworth, Doncaster. DN11 8EW
Tel:	01302 718400
Fax:	01302 714139

2. Composition

General:	Natural aggregates are produced from naturally occurring rock, sand and gravel deposits, and consists of combinations of various minerals, including silica.
Hazardous Ingredients:	This product contains free crystalline silica (quartz) in the range of 30% to 100%.

3. Hazardous Identification

Eyes:	May cause irritation
Skin:	No hazard.
Inhalation:	Prolonged exposure to free crystalline silica dust in the Respirable size range causes progressive irreversible lung disease (silicosis).
Ingestion:	Not a toxic hazard, but ingestion of a significant amount could block the airways or gullet.

4. First Aid Measures

Eyes:	Irrigate or flood the eye(s) with copious amounts of clean water. Seek medical advice if the particles cannot be removed by this method.
Skin:	Wash with water.
Inhalation:	Remove from exposure to fresh air.

5. Fire Fighting Measures

None required, aggregates are non-flammable.

6. Accidental Release Measures

Personal Precautions:	In the event of a spillage or leakage, wear eye protection. Avoid breathing dust by wearing respiratory protective equipment.
Environmental measures:	No hazard. Aggregates should be disposed of in accordance with local authority requirements.
Method of Cleaning:	Use methods which will minimise generation of dust. Avoid dry sweeping. If possible, spray the material with mater to prevent airbourne dust. If a vacuum system is used to clear up dry material, the vacuum should be fitted with a high efficiency filter suitable for harmful dusts.

7. Handling and Storage

The product should be handled and stored to minimise generation of dust. Avoid dry sweeping. If possible, spray the material with water to prevent airbourne dust. If a vacuum system is used to clear up dry material, the vacuum should be fitted with a high efficiency filter suitable for harmful dusts.

8. Exposure Controls/Personal Protection

Occupational Exposure Limits

Free Crystalline silica. Maximum Exposure Limit - 4mg/cu. Metre respirable dust 8 hour time weighted average. Recommended Short Term Exposure Limit 1.2mg/cu. Metre respirable dust. (15mins reference period)

All types of dust have an Occupational Exposure Standard of 10mg/cu.metre inhalable dust 8 hour time weighted average. Recommended Short Term Exposure Limit 30mg/cu.metre. (15 mins reference period)

Engineering Control Measures:	See section 7, Handling & Storage.
Personal Protection:	Respiratory protection to HSE approved standard.
Hand Protection:	Abrasive resistant gloves.
Eye Protection:	To HSE Approved standard for dust goggles.

9. Physical and Chemical Properties
Natural aggregates are particulate solids with extremely high melting points, odourless with various colours. Density range up to 2500kg/m^3.

10. Stability and Reactivity
Not applicable

11. Toxicology Information
Health effects:

On Eyes:	May cause transient irritation.
On Skin:	Unlikely to cause harm on brief or occasional contact.
By Inhalation:	Inhalation of large quantities of respirable silica may lead to progressive lung damage. This may cause permanent disability and, in extreme cases, may be fatal.
By Ingestion:	Unlikely to cause harm.
Chronic Exposure:	High level exposure to silica may cause progressive silicosis.
Others:	None known.

12. Ecological Information
Environmental Assessment
When used and disposed of as intended, no adverse environmental effects are foreseen.

13. Disposal Considerations
Is not classified as hazardous for disposal purposes. Subject to local authority requirements.

14. Transport Information
Classification for conveyance not required.

15. Regulatory Information

Hazard Label Data:	This product is not classified as dangerous for supply in the UK.
Statutory Instruments:	Health & Safety at Work Act 1974. Consumer Protection Act 1987. COSHH 1994. Environmental Protection Act 1990.
Guidance Notes:	Occupational Exposure Limits (EH40) Local Exhaust Ventilation (HS(G)37) Crystalline Silica (EH59) Dust, General Principles of Protection (EH44) Control of Respirable Crystalline Silica in Quarries (HS(G)73) Waste Management – The Duty of Care *The above publications are available from HMSO of HSE.*

16. Other Information
The dry dust from Natural Aggregates is a substance hazardous to health and as such the employer of persons who may be exposed to it at work must carry out an assessment under the Control of Substances Hazardous to Health Regulations 1994.
The presence of free silica dust of respirable size (having a Maximum Exposure Limit) means that it is a legal requirement to reduce exposure to it at all times to the lowest level reasonably practicable and in no circumstances to exceed the Maximum Exposure Limit.

NB: Possession of this Health & Safety Data Sheet does not constitute an assessment.

The use of Personal Protective Equipment is subject to the 'Personal protective Equipment at Work Regulations 1992'. All new Personal Protective Equipment must carry the CE mark of Conformity to European Standards.

Where exposure to respirable crystalline silica is such that there is a reasonable likelihood of Silicosis then health surveillance for this condition will be required under COSHH regulations.

The COSHH regulations prohibit the use of any substance containing free silica as an abrasive for blasting articles in any blasting apparatus.

Substances containing free silica are not recommended for the sand blasting of buildings.

**TARMAC TRUPAK, PLUMTREE INDUSTRIAL ESTATE,
HARWORTH, DONCASTER. DN11 8EW**

TECHNICAL DATA SHEET

KEIM RESTAURO®-FUGE

1. PRODUCT DESCRIPTION

Mineral dry bagged joint mortar with hydraulic binders.

2. FIELD OF APPLICATION

KEIM Restauro-Fuge is a joint replacement material, especially for natural stone walls, but it may also be used for joint repairs to other fair-faced masonry (brickwork, calcareous sandstone etc.).

3. PRODUCT PROPERTIES

Material characteristics acc. to WTA leaflet 3-11-97/:

– Bulk density:	approx. 1.55 g/cm³
– Water consumption:	approx. 0.15 l/kg
– Working time:	at most 45 min
– Setting time:	approx. 5 h
– Compressive strength:	approx. 8 N/mm²
– Bending tensile strength:	approx. 3 N/mm²
– Modulus of elasticity:	approx. 9 KN/mm²
– Thermal dilatation	7 x 10^{-6} (1/K)
– Hygric dilatation	0,7 mm/m

Colour shade:
Shades from KEIM's natural stone colour swatches. Special shades on request: 300 kg minimum order quantity! The final colour shade after drying and setting depends on the prevalent environmental conditions and the chosen application method. We recommend on-site test applications.

4. APPLICATION INSTRUCTIONS

Application temperature:
Ambient and substrate temperature must not fall below +5 °C.

Substrate preparation:
Raking out:
Defective joint material and any cement joints must be completely raked out to a depth of at least twice the joint width.

Cleaning:
The open joints should be carefully cleaned with a water jet.

Prewetting:
The joint mortar must only be placed in moist joints. Adequate prewetting is thus absolutely essential. Remove any excess water with a sponge.

Application:
Mixing:
KEIM Restauro-Fuge is mixed with water only, approx. 4.5 l per 30 kg. Use a mixer or compulsory mixer for larger quantities. After a maturing period of 5 minutes, the mortar should have the consistency of moist soil.

Pointing:
Press the matured joint mortar firmly into the joint with a jointing iron. A scraped surface provides the best match with the colour card. Other surface processing such as smoothing might cause higher colour deviations. The surface is scraped with a suitable tool as soon as possible. In case of flush joints, KEIM Restauro-Fuge is applied over and above the stone surface. The excess material is then removed during setting with a filler knife. In other cases, the joint surface is carefully roughened with the sharp edge of the jointing iron.

Consumption:
Approx. 0.2 kg/linear metre at a joint depth and width of 1 cm x 1 cm.
0.4 kg/linear metre at a joint profile of 1 x 2 cm.

Note:
During any prior stone repair work, joints should be kept open or immediately hacked out again. Wider joints are kept open with a styrofoam insert otherwise with an inserted film. It is always recommended to perform a test pointing to find out if colour shade, strength and flank adhesion meet the requirements.

Cleaning of tools:
Clean with water immediately after use.

5. PACKAGING

30 kg sacks

6. STORAGE

12 months in a closed sack under dry conditions.

Stand 01/19

▶

7. DISPOSAL

EC Waste Code No. 17 01 01

Any residues must be emptied out of sacks before recycling. Solidify any residual material with water and, after consulting the relevant authorities, dispose of in a building material landfill site.

8. SAFETY INSTRUCTIONS

Giscode: ZP 1

Provide appropriate protection for surfaces which are not to be treated. Any splashes on surrounding surfaces or traffic areas must be rinsed off immediately with plenty of water. Protect the eyes and skin from splashes. When using, do not eat, drink or smoke. Keep out of reach of children.

Please refer to EC Safety Data Sheet.

The stated values and properties are the result of extensive development work and practical experience. Our recommendations for application, whether given verbally or in writing, are intended to provide assistance in the selection of our products and do not establish a contractual relationship. In particular, they do not release those purchasing and applying our products from the duty of establishing for themselves, with due care, the suitability of our products for the intended application. Standard building industry practices must be complied with. We retain the right to make modifications to improve the products or their application. This edition supersedes all earlier editions.

Stand 01/19

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