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| **Business Unit:** | C2V+ | **Contract No. & Name:** | Macclesfield C14998 |

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| ACTIVITY: | Grouting of Metalwork and Plinths | | RAMS Ref.: | 165 | | Rev: | 0 |
| Location and scope of Works: | This RAMS outlines the hazards, control measures, and process for pointing up stanchions on site using a grano cement mix (1 part cement to 2 parts fine aggregate), emphasizing the importance of achieving the correct MPa strength, fully compacting the mix to prevent shrinkage, and ensuring structural integrity. | | | | | | |
| Start date: | 20th September 2024 | Anticipated completion date: | | | 26th October 2024 | | |

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| APPROVAL & AMENDMENT RECORD | | | | | | | |
| Rev | Prepared by | | Date | Reviewed / Approved by | | Date | Amendment Details |
| 0 | Name | Jonathan Jackson | 20/09/24 | Name | Sam Beacham | 30/09/24 | First issue |
| Signature |  | Signature |  |

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| REVIEW / CHANGE LOG | | | |
| Date | Reviewer | Comments | Rev No. |
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| Personnel consulted during preparation of this document: |  |

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| Distribution List: | | |
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| **RISK ASSESSMENT for:** | | Grouting of Metalwork and Plinths | | | RAMS Ref.: | 165 | | Rev: | 0 |
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| No. | Hazard | Person(s) at Risk | Undesired event | Control Measures  *(List control measures that are required)* | | | Actioned by | | Date |
| 1 | Forks out of level | Workers, site personnel | Weak or brittle mix leading to poor bonding | * Use the correct mix ratio: 1 part cement to 2 parts fine aggregate (grano dust). Ensure consistent batching and mixing procedures are followed. | | |  | |  |
| 2 | Inadequate compaction of mix | Workers, site personnel | Shrinkage of the mix, leaving gaps or cracks | * Ensure the grano mix is fully compacted into the stanchion joints to prevent voids or shrinkage. | | |  | |  |
| 3 | Exposure to cement dust | Workers | Respiratory problems, skin irritation | * Provide appropriate PPE (dust masks, gloves, and protective clothing). Mix in well-ventilated areas or use dust suppression techniques. | | |  | |  |
| 4 | Manual handling of materials | Workers | Musculoskeletal injuries | * Train workers on correct lifting techniques. Use mechanical aids (such as wheelbarrows) for transporting heavy materials. | | |  | |  |
| 5 | Weather conditions | Workers | Adverse weather (rain, heat) affecting mix quality | * Protect work area from rain using covers or tents. Do not carry out work in extreme heat or direct sunlight that can cause premature drying. | | |  | |  |
| 6 | Incorrect MPa strength for the mix | Workers, site personnel | Stanchions not sufficiently supported, leading to structural failure | * Ensure the grano mix achieves a suitable compressive strength of around 40-50 MPa for stanchion pointing, as per the structural engineer’s specifications. | | |  | |  |
| 7 | Slips, trips, and falls | Workers | Injury from tripping over materials or equipment | * Keep work area clean and tidy. Ensure clear walkways and remove excess materials and debris. | | |  | |  |
| 8 | Use of vibrating tools (e.g., compactors) | Workers | Vibration-related injuries | * Limit exposure to vibrating tools. Provide regular breaks and rotate tasks between workers to reduce exposure. | | |  | |  |
| 9 | Mix drying too quickly | Workers | Cracks or poor bonding due to rapid drying | * Keep the mix moist during the curing process by covering the area or lightly spraying water over it to prevent premature drying. | | |  | |  |
| 10 | Injury from mixing equipment | Workers | Injuries such as cuts or entanglement from the mixer | * Ensure all mixing equipment is regularly maintained and workers are trained in safe use. Never operate equipment without guards in place. | | |  | |  |

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| METHOD STATEMENT | | | | | | | |
| Personnel REQUIRED  *Give the number and role of personnel required to carry out activity including any specific skills, fitness levels, training or qualifications required.* | | | | | | | |
| No. of | Role | | Qualifications / Experience required | | | | |
| 1 | Groundworker | | Experienced GW with CSCS training | | | | |

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| Associated Documents: | | | | | | | | | |
|  | | | | Required | | Location of document if not attached to this RAMS | | | |
| Yes | No |
| COSHH Assessment Ref. | | | |  |  | Cement COSHH | | | |
| Lift Plan (Nonroutine) H5503 / R07 | | | |  |  |  | | | |
| Rescue Plan *(for working at height)*: | | | |  |  |  | | | |
| Other Documents: *(such as drawings, sketches, consents, licenses, etc.)* | | | |  |  |  | | | |
| Permits / PLANS Required *Indicate those that apply or add other contract specific permits* | | | | | | | | | |
| Permit to Break Ground  H1401 / H1401R | Hot Works Permit  HSE27 | Confined Space Permit  HSE21 | Routine Lift Plan  H5503 /  R07 | | Permit to Operate Plant  H0909 | | Work Near Power Lines  H1408 | Temporary Works  Q25 | Permit to Pump  EMS29 |
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| ACTIVITY: | Grouting of Metalwork and Plinths | RAMS Ref.: | 165 | Rev: | 0 |
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| RESOURCES REQUIRED | | | | | |
| Operated Plant | | | | | |
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| Non-Operated Plant / Small Tools / Equipment | | | | | |
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| Materials | | | | | |
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| ACTIVITY: | | Grouting of Metalwork and Plinths | RAMS Ref.: | 165 | Rev: | 0 |
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| Programme of Operations and Potential Interface with Others: | | | | | | |
| Sequence of Activities / Safe System of Work  *(to include access / egress, plant & pedestrian segregation, limitations & constraints and state any HOLD POINTS)* | | | | | | **Hold Point** |
|  | **Scope Of Work:**   * This method statement covers the procedure for pointing up stanchions using a grano cement mix on-site. This involves preparing the stanchion joints, mixing and applying the grano mix, and ensuring the joints are fully compacted to prevent shrinkage and cracks. | | | | |  |
|  | **Procedure:**  **Preparation:**   * Clean the stanchion joints of any debris or loose material. * Set up equipment and ensure the area is free of hazards, such as trip risks from materials or equipment. * Ensure PPE is worn at all times. * Protect the work area from adverse weather using covers or shelters if necessary.   **Mixing the Grano Cement:**   * Use the correct mix ratio: 1 part cement to 2 parts fine aggregate (grano dust). * Mix the components thoroughly to achieve a consistent mix. * Add water in small amounts to achieve a workable consistency, avoiding making the mix too wet.   **Pointing the Stanchions:**   * Apply the grano mix to the prepared stanchion joints. * Use a pointing trowel or similar tool to push the mix into the joint, ensuring it is fully compacted to avoid any voids or shrinkage. * Continue adding and compacting the mix until the joint is completely filled.   **Curing:**   * After application especially in warm weather, ensure the mix is kept moist during the curing process to prevent rapid drying and shrinkage. * Lightly spray water or cover the joints with damp hessian to maintain moisture levels. | | | | |  |
|  | **Control Measures:**   * Ensure the correct mix ratio (1:2 cement to fine aggregate) is maintained, and the mix is fully compacted to prevent shrinkage. A compressive strength (MPa) of approximately 30 MPa is required for this type of work to ensure adequate support for the stanchions. | | | | |  |
|  | **Responsibilities:**   * The operator is responsible for ensuring the mix is correctly applied and fully compacted. The site supervisor will oversee the process and ensure that all workers follow safety guidelines, and the procedures outlined in this method statement. | | | | |  |
|  | Grout used for general works typically has a compressive strength ranging between 25-40 MPa, depending on its mix design and curing conditions. Grano (granolithic mix) with a 2:1 ratio of grano (fine granite aggregate) to cement tends to achieve higher compressive strengths, often reaching 50-70 MPa. Grano mixes, especially when designed with a low water-to-cement ratio and proper compaction, can exhibit superior durability and strength.  In summary, grano mixes outperform standard grout in terms of compressive strength due to the dense, fine aggregate (granite) that contributes to its higher resistance to wear, impact, and overall durability. This makes grano ideal for areas with heavy foot or mechanical traffic, whereas general grout is better suited for more typical structural or filling applications. | | | | |  |

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| Mandatory and additional PPE required:  *(rigger boots or similar are banned from use, wellingtons can only be used following inclusion in the RA)* | | | | | | | | |
| Mandatory PPE: | | | Task Specific PPE: | | | | | |
| * Gloves (suitable for task) * Hard hat * High visibility clothing * Light Eye Protection (LEP) * Boots (with steel toecap and midsole) * Over trousers | | | * Rubber non-absorbent gloves * Dust mask (when mixing) | | | | | |
| Environmental considerations: *Consider Waste Management pollution prevention measures, protected wildlife / sites / trees, noise / vibration / dust, resource use. Refer to H02G03 Environmental Guidance for RAMS* | | | | | | | | |
| Waste Management | | | | | | | | |
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| Pollution Prevention *(water & ground; consider fuels, concrete & silt)* | | | | | | | | |
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| Protected & Invasive Species | | | | | | | | |
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| Nuisance *(noise, dust, vibration)* | | | | | | | | |
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| Resource Use *(fuel, water, aggregates, etc.)* | | | | | | | | |
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| Other *(archaeology, NRMM, etc.)* | | | | | | | | |
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| Emergency response: | | | | | | | | |
| Event | | Action to be Taken *(indicate location of first aid facilities, fire extinguishers, spill kits, rescue lines)* | | | Emergency Contact Details | | | |
| Fire: | | Raise the alarm, go to the muster point. | | | Alert Fire Warden or 999 | | | |
| Accident: | | Information on site first aider. First aider to deal with situation, 999 to be called if required. | | | Alert First Aider or 999 | | | |
| Pollution: | | Emergency spill procedure to be actioned. | | | Alert Site Management | | | |
| Water: | | Site management to be informed who will alert UU. | | | Alert Site Management or UU | | | |
| Service strike: | | Stop work immediately and evacuate the area. Service coordinator to be informed immediately. | | | Alert Site Management and Service Provider | | | |

**Record of briefing of the personnel who are to undertake this work:**

*(Extend the table as necessary to record the briefing on any revisions in separate rows)*

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| ACTIVITY: | Grouting of Metalwork and Plinths | RAMS Ref.: | 165 | Rev: | 0 |
| Briefing Given by: *(name)* |  | Signed: |  | Date: |  |

I confirm that I have received and understood the briefing for the task(s) outlined.

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| ACTIVITY: | Grouting of Metalwork and Plinths | RAMS Ref.: | | 165 | | | Rev: | 0 |
| **MINOR AMENDMENTS** | | | | | | | | |
| AMENDMENT TO RAMS CARRIED OUT BY *(Supervisor responsible for works)* | | | | | | | | |
| Name | Position | Signature | | | | Date | | Time |
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| AMENDMENT SUMMARY *changes required & reasons for minor amendment(s)* | | | | | | | | |
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| Outline of the significant hazards involved: | | | Outline the controls to be followed to do the work: | | | | | |
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| AMENDMENT TO RAMS APPROVED BY *(Manager responsible for works)[if approval by phone call record date & time]* | | | | | | | | |
| Name | Position | Signature | | | Date | | | Time |
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I confirm that I have received and understood the briefing for the task(s) outlined:

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