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1. **Purpose**
The purpose of this procedure is to ensure that work involving the removal of grid mesh, flooring, and handrails is undertaken safely and will not endanger persons.

2. **Scope**
This process is undertaken as part of the Permit to Work and 2nd Tier Permit process and applies to the removal and re-instatement of existing grid mesh, flooring or handrails under the control of Seqwater and to all workers engaged by Seqwater or whose work is directed by Seqwater.

This procedure does not apply where panels are installed as part of new asset or major upgrade projects. For these works, new and/or refitted grid mesh panels shall be inspected during the projects final inspection (or equivalent).

3. **Roles and Responsibilities**

3.1 **Manager/Supervisor**

The Manager/Supervisor is responsible for ensuring:

- All work, where grid mesh, flooring or handrail removal is required, is in accordance with this procedure.
- All workers required to perform work outlined in this procedure are trained and competent to perform the task.
- Review of the completed Permit to Work with a view to provide engineering controls to manage the hazard where the risk deems it practical and necessary.
- Consult with technical specialists where required for engineering controls.

3.2 **Workers**

Workers are responsible for:

- Performing work in accordance with this procedure.
- Only operating equipment in which they have been trained and authorised to operate.
- Following any specific directions in the Permit to Work and 2nd Tier Permit.

3.3 **Technical Specialist/Engineer**

Engineers shall ensure that where modifications are made or temporary structures are installed, that such modifications/installations are approved by the relevant person and comply with Australian Standards.

4. **Definitions**

**Access Officer**
A person who is competent to issue permits to work, identify potential hazards/risks and control measures for work to be performed.

**Competent Person**
A person who has acquired the knowledge and skills to do the task in a safe way, including knowledge of Australian,
Corporate Safety – Procedure
Grid Mesh, Handrail and Flooring Removal

Drop Zone
Area below or adjacent to the work area where objects could fall or be directed into if they strike other structures after they fall.

Flooring/Grid Mesh Panel
Any section of trafficable flooring, walkway, platform (grid mesh, checker plate, pit covers (hinged or otherwise)), steps or ladder rungs. A grid mesh panel can be used in the construction of walkways or platforms, including metal or fibre reinforced plastic panels.

Hand railing
A structure to prevent persons from falling off any platform, walkway or landing.

JSEA
Job Safety Environmental Analysis – a methodical assessment of the tasks to be undertaken to identify hazards and associated risks, and to ensure control measures are in place to reduce the risk.

Permit Recipient
The person responsible for the work being undertaken under a Permit to Work and any associated 2nd Tier Permits.

Removal
To completely or partially remove or displace an item of flooring or hand railing to create an opening through or leading edge from which someone or something could fall.

Unprotected Edge
A drop off or fall from any height created by the removal or modification of an existing structure which is used to prevent exposure to an unprotected edge, such as removal of flooring, handrail, hatches, pit covers or manholes.

5. Procedure
Implementation of this procedure ensures that any unprotected edge created is adequately controlled or eliminated.

Where any grid mesh, area of flooring or handrail, including chequer plating, is removed to present a fall hazard or create an unprotected edge, a Grid Mesh, Flooring and Handrail Removal Permit is completed. This is required for each occurrence where one or multiple sections of grid mesh panel, flooring or handrail are removed and consequently require reinstatement. Authority to undertake Grid Mesh, Flooring and Handrail Removal is granted by an Access Officer via a permit to work. A Grid Mesh, Flooring and Handrail Removal permit sit under a permit to work and is carried out by a 2nd Tier Permit Authority, i.e. a person with the relevant skills and competencies to undertake the 2nd Tier Permit and has completed SAWCS Permit User training as a minimum.

The Grid Mesh, Flooring, and Handrail Removal Permit must be used in conjunction with the JSEA and Permit to Work processes to assess the hazards presented by the removal of the grid mesh, flooring or handrail.

Only on approval of the Permit to Work and Grid Mesh, Flooring, and Handrail Removal Permit can the grid mesh, flooring or handrail be removed.
5.1 Prior to Removal
All other reasonable means of undertaking the job without the need for removing flooring and handrails shall be considered before commencing the job.

- The provision of Emergency Response access to the area must be considered and provided, e.g. grid mesh, flooring and handrails to only be removed from one side of a restricted area at a time. This ensures access/egress to or from the equipment.
- All working at heights shall be evaluated and planned for with safe systems set up. Fall protection (Harness/ restraint lanyards etc) shall be worn and suitably attached by all personnel working within the immediate area surrounding the walkway penetration or unprotected edge where there is a potential to fall, refer Working at Heights Procedure (PRO-00015).
- The possibility of dropped objects, loads and falling hot materials shall be evaluated.
- The integrity of the floor is to be checked to ensure:
  - The surrounding area would not be affected structurally by the floor being removed (e.g. Interlinking panels).
  - Other hazards such as rust, securing devices etc are identified so as to not affect the flooring removal (e.g. manual handling, SWL/ WLL of equipment).
- The possibility of persons being affected by fumes; vapours and gases are to be considered in the JSEA.
- Ensure that the removal/ replacement of protected edges does not compromise the safety of personnel.
- Maintain the original design intent (e.g. floor loading) when work is complete.
- Plan the work and designate a lay down area for the sections to be removed.
- Identify the correct lifting requirements for the sections to be removed.
- A JSEA must be completed and approved before any work commences.

5.2 Design and Requirements

5.2.1 Grid Mesh
All grid mesh shall be welded, or clipped and bolted to the structure. Panels shall NOT be clipped to other grid mesh panels, but only to structural steel.

There shall be a minimum of four (4) welds used on panels which are 25 mm long by 6 mm fillets using low hydrogen electrodes. Additional welds may be required on larger panels. Exceptions shall be approved on an individual basis by the District Coordinator.

Clipped panels shall have a minimum of one (1) clip and bolt at each corner. Additional clips may be required in large sections of grid mesh. Exceptions shall be approved on an individual basis by the District Coordinator.

Each grid mesh panel shall be securely fixed to the structure and shall not rely on adjacent panels for the prevention of lateral movement. Grid mesh shall be secured with permanent fixings as soon as practicable after placing and alignment is complete.
An acceptable alternative to welding is by use of clips which are fixed to the structure by positive means, such as tapped set screws or bolts (i.e. not simply clamped).

In some locations panels are installed and are neither clipped nor welded, but are fitted with lugs to positively locate and trap the panel in position on the structure. This is to facilitate quick access to areas requiring frequent service. Such panels shall not be easily displaced and shall not be larger than 300 mm square. Where practicable all such panels shall be hinged in preference to being loose.

In the case of hinged panels that allow personnel access to pits, sumps and other areas, if the access panel cannot be closed immediately behind the person, then this procedure applies. Confined Space Entry permitting must be considered for entry into pits and sumps.

5.2.2 Handrails
Handrails shall be designed so joints will withstand the appropriate design load. The method of securing handrails must not weaken the intrinsic strength of the structure or system. Design load, securing and further requirements are available in AS 1657 – Fixed Platforms, Walkways, Stairways and Ladders.

5.3 General requirements
Workers engaged in the removal of grid mesh, flooring or handrails shall NEVER leave the area of work unattended until the opening is made safe.

5.3.1 Alternate Route
An alternate means of access shall be required if the grid mesh, flooring and hand railing to be removed is one or more of the following:
- A principal means of evacuation in the case of an emergency;
- The only access to a highly used area;
- The only access to fixed emergency equipment;
- The only access to operating plant that requires regular inspection or attendance.

5.3.2 Barricading and Signage
Where grid mesh, flooring or handrails are to be removed, a fixed rigid barricade must be erected and adequate signage installed to alert people working or traversing the area to the introduced hazards and the reason for the barricading. Barricades shall be placed to restrict all possible access to the area where unprotected edges are created, and to the work zone. A copy of the Permit and JSEA will be placed at the entry point to the work zone to notify of the work task and the appropriate supervisor.

All areas identified as a fall risk must be demarcated with a sign conforming to AS 1319 - Safety Signs for the Occupational Environment, and must be clearly visible from common angles of approach. Each sign must indicate the hazards and the mandatory controls required to access and work in the area.
5.3.3 Personal Protection
All workers engaged in the removal of grid mesh, flooring or handrails, where any potential to fall exists, shall wear a safety harness and lanyard which shall be attached to an approved structure or static line at all times.

5.3.4 Handling of Grid Mesh, Flooring and Handrails
Grid mesh, flooring, or handrails shall be handled with the appropriate lifting equipment. If a crane is used, it shall use an approved lifting device (wire slings or chains with safety hooks). The panels shall only be handled by workers wearing appropriate fall prevention equipment. All grid mesh, flooring or handrails shall be secured immediately on placement with temporary clips or be lashed down with 2mm diameter (minimum) wire. The use of wire is a temporary measure to be used during placement only and is not acceptable as a permanent fixing. No panels laid on to steelwork shall be left unsecured during absences or overnight.

5.4 Removal of Grid Mesh, Flooring and Handrails
The person responsible for the work shall obtain approval from the Access Officer for the removal prior to commencement. Such work shall be covered in a Grid Mesh, Flooring and Handrail Removal Permit, Job Safety and Environmental Analysis (JSEA) and Permit to Work.

After approval to remove a grid mesh, flooring or handrails has been obtained a rigid barrier such as a scaffold tube barrier with mid rails and kick boards shall be erected around the area to be fitted prior to the grid mesh, flooring or handrails being lifted. Signage shall be fixed to the barrier.

All removed grid mesh, flooring or handrails shall be immediately removed from the work area to a storage location or shall be stood on edge and securely lashed in place to avoid the creation of a trip hazard.

5.5 Re-Instatement of Grid Mesh, Flooring and Handrails
On completion of work grid mesh, flooring and handrails shall be re-instated and appropriately secured into position. The ‘Re-Instatement Checklist’ section of the permit shall then be completed by the 2nd Tier Permit Authority. This section of the permit lists characteristics that the re-instated grid mesh, flooring or handrails must satisfy, or the remedial work that will be required.

If the grid mesh, flooring or handrails do not satisfy these characteristics due to the way it was reinstated or altered, the re-instated item must be corrected. Upon satisfactory
completion of any re-work, the 2nd Tier Permit Authority shall then amend the permit by
ticking, initialling and dating the applicable tick boxes in the permit.

If the grid mesh, flooring or handrails do not satisfy these characteristics because it was
previously deficient, the 2nd Tier Permit Authority will either arrange for it to be remedied
where this can be performed simply, or raise a Work Request. When the item has been
remedied, or a Work Request raised, the 2nd Tier Permit Authority shall then amend the
permit by ticking, initialling and dating the applicable tick boxes in the permit.

All alterations and modifications shall be signed off by the Technical Specialist/Engineer.
Most but not all deficiencies would require the grid mesh, flooring or handrail to remain
barricaded until remedied (refer to the Permit).

5.6 Completion and Sign-off
The 2nd Tier Permit Authority shall ensure that all actions required under the Re-instatement
Checklist are complied with.

- The flooring/edge protection has been replaced and secured.
- The work party has informed the Access Officer of job completion. The Access Officer
  (or their delegate) shall inspect the area. When satisfied with the condition of the
  work area the permit shall be signed off.
- Any additional sign off (as required) of the authorisation as specified must also be
  performed (e.g. RPEQ).
- Once all parties are satisfied that the work has been completed correctly, the area
  has been made safe and the authorisation has been signed off, the barricade can be
  removed and the area returned to its normal condition.
- All barricading below the work area will be removed as soon as the job is complete.

5.7 Records
Upon completion of works, the permit shall be submitted with the Permit to Work paperwork
and filed with CIS. The original documentation shall be archived for a minimum of five (5)
years.

6. References
- FRM-00412 Corporate Safety - Grid Mesh, Flooring and Handrail Removal Permit
- SEQW-SAWCS-PRO-005 Permit To Work
- AS 1657-1992 Fixed Platforms, Walkways, Stairs and Ladders
- AS 1319-1994 Safety Signs for the Occupational Environment

7. Verification
Compliance with this document may be verified by internal audit.