

## Penetrations

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### Purpose

To outline the management and control of Penetrations conducted by contractors (including third-party contractors) on the Perth Airport Estate.

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### Scope

**Non-Structural Penetration** - Works requiring Penetration into hollow walls, ceilings or floors, or into solid material which is not a structural member (the primary load bearing components of a building).

**Structural Penetration** - Works requiring Penetration into a structural member.

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### Process

#### OSH Works Planning Meeting

An OSH Works Planning Meeting must be undertaken before any works under contract or third-party works commence. On completion of the OSH Works Planning Meeting the following must be understood:

- The number and dimensions of the penetrations e.g. depth, diameter etc.
- The location of the penetrations e.g. column R11, T1 Arrivals
- Into what material e.g. concrete, steel, wood etc.
- All potential hazards and controls associated with the work e.g. services and isolation
- Impact to the Airport e.g. noise, dust, security, work hours etc.

#### Penetration Permit Request

Contractors **MUST** raise a Permit Request for all penetrations using the Perth Airport Electronic Permit to Work System (PEMAC). Link to PEMAC available here: <https://hra.perthairport.com.au/PCARE/Security/SignIn.aspx>

**NOTE: The Perth Airport Representative is responsible for issuing the Contractor with a PEMAC login.**

Contractors must:

- Identify whether the penetration is a Structural or Non-Structural
- Complete a Perth Airport HRA Penetration Request along with the required Supporting Documentation online at least three working days before the planned works.
- NOT commence the penetration until the Permit Request is signed and returned by the Perth Airport Representative

#### Supporting Documentation

All Supporting Documentation must be submitted with the Penetration Request. The type of documents required must be agreed in the OSH Works Planning Meeting and will vary depending on the Class:

#### **Non-Structural**

- A Safe Work Method Statement and Methodology

**Process  
(continued)**

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- Document verifying and identifying of hidden services including As-Cons and GIS
  - All Electrical / Gas / Water services have been isolated
  - Verification of Asbestos Containing Material (GIS)
  - Exclusion zone is erected around the proposed works
  - Any fragile surfaces have been identified and managed
  - Dust and noise are being appropriately managed
  - Life Safety Systems are isolated if excessive dust is identified as an issue

**Structural**

- All Supporting Documents as per Non-Structural above, and
- A Structural Engineering Report and Sign Off

**Review of Supporting Documentation**

The Perth Airport Representative and Permit Issuer is responsible for reviewing the Penetration Request and Supporting Documentation within the allocated three-day period to ensure the request has adequately assessed the hazards and controls associated with work.

**Site Inspection**

When the Permit Issuer is satisfied the Penetration Request and Supporting Documentation is adequate, the Permit Issuer must conduct a site inspection to ensure that the agreed controls in the Supporting Documentation have been implemented on site.

**Issue Permit**

Once the Supporting Documentation has been reviewed and the site inspection completed the Permit Issuer must sign and issue the Penetration Permit to enable work to commence.

**Monitoring**

Spot Checks may be conducted to ensure the agreed conditions of the Penetration Permit are being implemented.

**Completion of Work**

After the work is completed the Permit Applicant is required to notify the Permit Issuer and the Perth Airport Representative the works are complete. The Perth Airport Representative will close the Penetration Permit on PEMAC.

**Permit Cancellation**

Should a non-compliance occur with the agreed controls in the Penetration Permit and Supporting Documentation the HRA-PI may cancel the Permit. If this happens the Applicant must stop work immediately until further instruction from the Perth Airport Representative.

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## Structural and Non-structural Penetration Safety Rules

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### General Requirements

- A HRA – PENETRATION Permit is required for all works which involve the cutting, drilling or otherwise breaking into hollow walls, ceilings or floors, or solid material, either structural or non-structural within a building or structure controlled by Perth Airport.
- A SWMS must be drafted and be specific to the works at Perth Airport.
- The 'Hierarchy of Control' must be applied when planning and/or considering control measures for any penetration.
- Any penetration that requires Work at Heights or Hot Works (or other HRA) will require the appropriate permit for that works in addition to the Penetration Permit.
- All equipment should be inspected before use.
- Ensure the right equipment is used for the task at hand.
- For Structural Penetrations - All penetrations into structural members requires an Engineer to sign off that the work will not impact the structural integrity of the member. All works must be undertaken within the specifications made by the Engineer. Any unexpected conditions or changes to the planned penetration must be reported to the Engineer, the contractor as well as the Perth Airport Representative/ Permit Issuer.
- Post tensioning strands (PTS\_ are used in some of the floor slabs within terminal buildings. Damaging these may cause catastrophic impacts to the integrity of the floor slab. Adequate controls must be in place to prevent damage to PTS, which may include; high resolution, accurate scanning; minimum distances between penetrations and PTS; exclusion/No-Go zones marked on the slab; etc.

### Security Requirements

- In some instances, penetrations may impact on security boundaries within the airport. The contractor must ensure all Penetrations works are assessed by the relevant stakeholders for their potential to impact on the security of the airport and passengers both during the works and following the works.
- The passing of tools or materials from one side of a physical barrier to the next may pose a specific security threat and must be addressed in the methodology.
- Leaving tools in sterile areas is prohibited.
- Tool registers are required for all sterile area works.

### Impacts Outside the Work Area

- All penetrations where there is the possibility of the tool or waste materials from the penetration process dropping, damaging property or causing injury to a person must have appropriate controls in place to effectively mitigate this risk.

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- The potential for the works to impact on smoke detectors (dust) must be assessed and controlled, in some cases isolation of detectors may be required.

#### Services Within Ceilings, Walls and Floors

- Prior to any Penetrations being undertake a thorough investigation of the services which may be within the work area must be undertaken by the contractor, including appropriate sub-surface detection for the surface being penetrated. The sub-surface detect scans must be attached as Supporting Documentation to the Penetration request.
- Services in the works are must be isolated before any penetrations being undertaken, where this is not practical live services must be suitably marked and communicated to the workforce that they are live.

#### **Legislation and Standards**

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Code of Practice Concrete and masonry cutting and drilling 2019 (Department of Mines, Industry Regulation and Safety)

Occupational Safety and Health Regulation 1996, Division 2 Section 19 (1) (a) and (b), and 20 (1), (2)(a).

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