

Attachment A15**REQUIREMENTS FOR WORKS IN THE AIRSIDE
(CHANGI AIRPORT)****1 Control of works in the Airside**

- 1.1 Works within the operating aerodrome may impact or may be impacted by aircraft, ground handling and vehicular operations. The safety of work activities in the vicinity of aircraft maneuvering areas is therefore imperative and must be managed and controlled. The requirements stipulated in this document apply to **works in the airside**.
- 1.2 Works in the airside refer to physical activity carried out to maintain, develop or modify airside facilities. The following areas and systems are defined (but not limited to) as airside facilities:
- a. Aircraft Manoeuvring Areas – runways, runway strips, taxiways, taxiway strips and taxilanes;
 - b. Operational systems - (e.g., airfield lighting, iFerret, navigation aids, etc.) and their respective critical and sensitive areas, if applicable;
 - c. Apron – aircraft stands (including equipment staging area), equipment parking area, Aircraft Docking Guidance System, Passenger Loading Bridge, fuel pits and emergency stop switch, flood lights, INS signs, CCTV cameras, etc.;
 - d. Airside Buildings – AFLCC, ILS Building, South Pump House, Fire Station, Control Tower, Passenger Terminal Building etc.;
 - e. Roadways – Perimeter Road, primary and secondary roadways in the aprons, perimeter fence and systems etc.
- Note: For works in the Baggage Handling Area, refer to Annex B for Airside Work Permit (Baggage) requirements.
- 1.3 The Project Officer who has any form of work activities in the airside should engage Airside Development & Baggage (Airside Works team) on the Airside Work Permit (Airfield) requirements. If in doubt, please forward your enquiries via email to Airside Works team at grp.airsideworks@changiairport.com. Alternatively, enquiries can also be forwarded to lim.sengkee@changiairport.com
- 1.4 All works required to take place during runway closure are to adhere to the Runway Closure Works Control Matrix (refer to Section C, para 26).
- 1.5 No work activities shall take place in the airside unless approval has been granted by CAG Airside Development & Baggage (Airside Works team). Unauthorised works in the airside will be halted immediately.

1.6 Refer to Attachment A15 Annexes A – D for more details.

Annex A**1 Airside Work Permit (Airfield)**

- 1.1 The Project Officer who is managing work activities in the airside shall ensure that the Work Party carrying out the works are properly briefed and informed of the requirements stipulated in the latest edition of the Airport Operational and Safety Requirements (AOS), Airside Works Procedure Manual (AWPM).
- 1.2 The Project Officer may consult Airside Development & Baggage (Airside Works team) on the scope of works to be carried out in the airside **3 months** prior to the targeted commencement of works. The purpose for consultation is to assess the impact on operations and to confirm the need for closure of affected airside facilities, if any.
- 1.3 The Project Officer is required to consult the relevant stakeholders on the considerations related to safety, the method of works, impact on security and operations of critical systems prior to seeking approval from Airside Works team to commence works. Written approval/ permits are required for certain work activities. Refer to the list of stakeholders in the table below.

Area of Concern	Approving Agency for Pre-requisite Requirements
Works affecting airport security infrastructure	Aviation Security (CAG) and Airport Police Division
Works on the inner perimeter fencing and/or PIDS	Engineering & Development Group (CAG) and Aviation Security (CAG)
Hot works, works requiring isolation of fire alarm system	Airport Emergency Services (CAG)
Works within another project's work boundary	Relevant Project Officer
Works affecting tenanted and/or operational spaces	Rentable Properties (CAG), Airside Operations Control (CAG) and/or Engineering & Development Group (CAG)
Works affecting/on the external façade of terminal buildings	Facilities Management (CAG)
Closure or works affecting roadways	Airside Management (CAG) and Airside Operations Control (CAG)
Closure of aircraft stands	Airside Operations Control (CAG)
Closure of Aircraft Manoeuvring Area	Airside Operations Control (CAG) and Changi Tower (CAAS)
Aerodrome reporting requirements (e.g. AIP and NOTAM)	Airside Operations Control (CAG)
Trial hole works, Earthworks	Refer to stakeholders in e-PTW portal
Works involving tall machinery/equipment	Airspace Policy Division (CAAS)
Works near radio navigation and landing aids	Aeronautical Telecommunications & Engineering Division (CAAS)
Works on airfield lighting system, drainage, M&E systems, fire hydrant	Engineering & Development Group (CAG)
Works on CCTV, iFerret, ADGS	Engineering & Development Group (CAG) and Airside Operations Control (CAG)

Works affecting fire hydrant system	Airport Emergency Services (CAG)
Works affecting fuel system	Airport Operations Control - Operations Policy (CAG) and Changi Airport Fuel Hydrant Installation (CAFHI)
Works affecting Baggage Handling System or Baggage Handling Area	Engineering & Development Group (CAG) and Airside Development & Baggage (Baggage Ops) (CAG)

- 1.4 A copy of the Airside Work Permit (Airfield) forms can be downloaded at [AWP forms](#) (for non-CAG Project Officer, to contact Airside Works Team). The Project Officer shall refer to the “How-to-complete-AWP” Guide (see Appendix 1) to guide him/her in verifying that all the necessary requirements in the “Checklist for Project Officer (Airfield)” have been fulfilled.
- 1.5 The Project Officer is required to provide information about the proposed works, including but not limited to the following:
- a. Purpose/nature of works;
 - b. Proposed work schedule indicating the dates and working hours;
 - c. Schematic superimposed on maps/architectural drawings/layout plans of current infrastructure indicating clearly the work areas and the boundary of each work site (including areas for staging machinery and equipment, assembly area, site office etc.);
 - d. Phasing plan for various stages of works (including pre-construction activities, e.g. ground surveys);
 - e. Approved risk assessment(s), documenting relevant risks and corresponding mitigating measures for safety hazards and potential disruptions to aircraft operations, and ground handling operations;
 - f. Contact details of key personnel from the project management team, and main contractor;
 - g. Designated driving routes to work site and vehicle utilization plan.
- 1.6 The Project Officer shall prepare the Airside Work Permit (Airfield) forms and the required supporting documents. The application shall be submitted **at least 3 working days** (not inclusive of the submission date) via email to the Airside Works team prior to the requested start date; otherwise, the application may be rejected due to insufficient processing time. The required 3 working days will be reset if the application is rejected.
- 1.7 Work activities shall **not** commence until approval has been granted by Airside Works team. Upon approval, the Project Officer must ensure that works are conducted within the approved duration and authorised daily working hours within the approved work boundary.

- 1.8 The Project Officer shall be responsible to ensure that approved work site is well maintained, and safety and hazards control measures (e.g. markerboards, water barriers, etc.) are diligently put in place by the work party. Housekeeping activities such as grass cutting within 1m outside the boundary of the work area, FOD management, waste disposal, ensuring the tidiness and cleanliness of temporary site office and/or access roads, etc., are performed regularly to maintain an acceptable level of upkeep of the work area and its surrounding.
- 1.9 For the extension of approved work duration, a new application will be required. If earlier supporting document(s) remain applicable and valid, references to these supporting document(s) can be stated in the application without having to attach a copy.
- 1.10 For early completion of works before the approved end date, the Project Officer shall notify the Airside Works team.

2 Specific Instructions

- 2.1 Any accident/incident in the airside must be reported immediately to Airside Operations Control - Airside Management Centre (AMC) at 6541-2275. The Project Officer or appointed representative shall respond immediately to the site to take control of the area and to prevent exacerbating safety hazard or further disruption to operations.
- 2.2 During the course of work, Airside Operations Control, Airside Works Team or Air Traffic Control may issue instructions to stop work arising from non-compliance, e.g. unauthorised works, failure to abide by aerodrome safety requirements or due to operational reasons etc. Upon receiving stop work instruction, the Project Officer shall take immediate actions to clear all equipment and personnel from the work area. The Project Officer shall provide an update to Airside Operations Control and Airside Works Team as soon as the work area is cleared.

"How-to-complete-AWP" Guide

This guide was designed as **reference material** to assist the Project Officer in completing the AWP (Airfield) Checklist. This guide does not replace any of the manuals that document the requirements (e.g. AOS).

<u>S/N</u>	<u>Description</u>	<u>Status (✓ if completed, else N.A.)</u>	<u>Actions to be taken by Project Officer</u>
<u>Airport Operational & Safety (AOS) Requirements</u>			
1	The Work Party has obtained the latest copy of the AOS requirements; has read and is able to comply with the requirements.	<input type="checkbox"/>	This is a mandatory requirement. It must be a 'tick'; 'NA' is not acceptable.
<u>Works on Security Gates, Fences or Related Facilities</u>			
2	For works on the inner perimeter fencing of the airport, the application* has been approved by E&D/CAG and AVSEC/CAG. (Refer to AOS, Section A)	<input type="checkbox"/>	'Tick' if: E&D and Avsec have approved works on inner perimeter fencing ----- 'NA' if: otherwise
3	The erection of new security fence, door, gate or barrier has been completed and accepted by CAG and APD before works affecting the existing security fence, door, gate or barrier is allowed to commence. (Refer to AOS, Section A)	<input type="checkbox"/>	'Tick' if: CAG and APD has accepted the completed erection of new security fence, door, gate or barrier, before works affecting existing security fence, door, gate or barrier commenced 'NA' if: otherwise
4	AVSEC/CAG and APD have been consulted on works near or affecting airport security infrastructure. (Refer to AOS, Section A)	<input type="checkbox"/>	'Tick' if: Avsec and APD have been consulted for 1. works on or affecting ANY airport security infrastructure; or 2. works to be carried out within 3m of airport fences; or 3. works to be carried out between inner and outer fence 'NA' if: otherwise
<u>Airport Fire Safety Requirements</u>			
5	The Work Party is able to comply with the airport fire safety requirements as stipulated in the CAG Fire Safety Manual and also the regulations and safety practices of the SCDF. (Refer to AOS, Section B)	<input type="checkbox"/>	This is a mandatory requirement. It must be a 'tick'; 'NA' is not acceptable.
<u>Hot Works</u>			
6	The Hot Work Permit* has been approved by AES/CAG. (Refer to AOS, Section B)	<input type="checkbox"/>	'Tick' if: AES has approved hot works 'NA' if: otherwise

Works requiring Isolation of Fire Alarm System

- 7 Isolation of Fire Alarm System* has been approved by AES/CAG. (Refer to AOS, Section B) 'Tick' if: AES has approved isolation of fire alarm system
'NA' if: otherwise

Airport Safety Training

- 8 The Work Party's personnel (supervisory level) have attended the Airport Operational and Safety (AOS) briefing and test. (Refer to AOS, Section C) This is a **mandatory** requirement. It must be a 'tick'; 'NA' is not acceptable.

Work Programme

- 9 The work proposal (e.g. Method Statement, design, demarcation layout, type of barricade used etc.) and detailed daily programme for the works have been approved by the Project Officer. (Refer to AOS, Section C) This is a **mandatory** requirement. It must be a 'tick'; 'NA' is not acceptable.

- 10 For works affecting/impacting any aircraft manoeuvring areas, the Project Officer is satisfied that the Work Party's Standard Operating Procedures (SOPs) comply with CAG's requirements and procedures, as well as the standards and recommended practices stipulated in the Civil Aviation Authority of Singapore (CAAS) Air Navigation (139-Aerodrome) Regulations, respective aviation specification and advisory circulars (Refer to AOS, Section C) 'Tick' if: satisfied with Work Party's SOPs when works are carried out (regardless of the aircraft manoeuvring areas being operational or closed) on
1. runway or within the runway strip; or
2. taxiway or within the taxiway strip; or
3. military taxiway or within the military taxiway strip

'NA' if: no works on the runway/runway strip/taxiway/taxiway strip/military taxiway/ military taxiway strip

- 11 For works within another project's work boundary, the Project Officer has sought concurrence to co-exist and ensure that coordination between the two project teams has been established. 'Tick' if:
1. co-existing has been agreed; and
2. coordination has been established for the proposed works to be carried out within another project team's work boundary (i.e. at the same location)

Please state the name of Project Officer whom you have liaised with.

'NA' if: there is no on-going work at the same location

- 12 For works affecting tenanted (e.g. parking lots, EPA) and/or operational spaces (e.g. offsite ESA, Evacuation Assembly Area, access into critical installations), the Project Officer has coordinated with the respective stakeholders to co-exist and if 'Tick' if: relevant stakeholders have been consulted for
1. works affecting any tenanted and/or operational spaces
2. alternative arrangements (as advised) have been made

necessary, alternative arrangements have been made to address the stakeholder's concerns.

'NA' if: otherwise

Note: critical installations include, but are not limited to, AFLCC, GP building, LLZ building, MM hut, Fire Stations, VIP complex etc.

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| 13 | Facilities Management/CAG has been consulted and concurred with the works affecting the external façade of the terminal building. | <input type="checkbox"/> | <p>'Tick' if: FM has concurred the works to be carried out on the external façade of the terminal building, including bus bays, parking lots, roadways (except underpass)</p> <p>'NA' if: work area does not encroach into the abovementioned</p> |
| 14 | For works within RSAF's operational areas (West of Runway 02L/20R or East of Runway 02R/20L), the RSAF has approved the work programme to be carried out. (Refer to AOS, Section C) | <input type="checkbox"/> | <p>'Tick' if: RSAF has approved works to be carried out within RSAF's operational areas (West of Runway 02L/20R or East of Runway 02R/20L)</p> <p>'NA' if: otherwise</p> |

Works Affecting Active Roadway or Pedestrian Foot Path

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| 15 | Prior to the commencement of works, the Work Party has submitted a detailed proposal on the plans to carry out the works, including all the necessary safety and traffic marshalling measures to the Project Officer for evaluation and approval. (Refer to AOS, Section C) | <input type="checkbox"/> | <p>'Tick' if: Project Officer has evaluated and approved on safety and traffic marshalling measures for works affecting active roadway and/or pedestrian foot path</p> <p>'NA' if: works does not affect active roadway and/or pedestrian foot path</p> |
| 16 | Airside Management/CAG has been consulted on any potential impact to safety and has concurred with the works on/affecting active roadway or pedestrian foot path. | <input type="checkbox"/> | <p>'Tick' if: Airside Management has concurred the works on/affecting active roadway and/or pedestrian foot path</p> <p>'NA' if: works does not affect active roadway and/or pedestrian foot path</p> |
| 17 | Airside Ops Control/CAG has been consulted on any potential impact to operations and has concurred with the works on/affecting active roadway or pedestrian foot path. | <input type="checkbox"/> | <p>'Tick' if: Airside Ops Control has concurred the works on/affecting active roadway</p> <p>'NA' if: works does not affect active roadway</p> |
| 18 | The request for closure of roadway* has been approved by Airside Management/CAG and Airside Ops Control/CAG. | <input type="checkbox"/> | <p>'Tick' if: Airside Management has approved the traffic management plan and Airside Ops Control has approved closure of roadway</p> |

'NA' if: works does not affect active roadway, or Airside Management/Airside Ops Control have agreed no roadway closure required

Closure of Airside Facilities

19 The request for closure of aircraft stand(s)* has been approved by Airside Ops Control/CAG.

Please state the reference number of AIP Supplement (if required).

'Tick' if: Airside Ops Control has approved
1. any request for closure of aircraft stand(s) for works to be carried out; or
2. layover at aircraft stand(s) has been assigned

'NA' if: closure of aircraft stand is not required by Airside Ops Control/CAG, or if works do not affect stands operations

20 The request for closure of aircraft manoeuvring area(s)* has been approved by Airside Ops Control/CAG and Changi Tower/ CAAS and the associated NOTAM(s)* issued.

Please state the reference number of NOTAM/AIP Supplement.

'Tick' if: works requiring closure of taxiway(s), taxilane(s) and/or runway has been approved

'NA' if: closure of taxiway, taxilane and/or runway is not required (after taking into consideration taxiway strip and jet blast influence area)

21 For work activities which coincide with runway closure period, arrangement has been made for the Work Party to report to Runway Entry/Exit Point (REP).

'Tick' if: work party is reporting to Runway Entry/Exit Point (REP)

'NA' if: otherwise

Aerodrome Reporting

22 The Project Officer has read and understood the requirements listed in Changi Aerodrome Manual (CAM) Section 4.1 Aerodrome Reporting. Project Officer has consulted and obtained confirmation from Airside Ops Control on the requirement (current/impending/non-issuance) of AIP Supplement/AIP Amendment/AIC for the purpose of the works.

This is a **mandatory** requirement. It must be a 'tick'; 'NA' is not acceptable.

Trial Hole Works

23 The application for permit to carry out trial hole works* has been approved. (Refer to AOS, Section C)

'Tick' if: works requiring trial hole works has been approved

'NA' if: otherwise

Earthworks

24 The application for permit to carry out earthworks* has been approved. (Refer to AOS, Section C)

'Tick' if: works requiring earthworks has been approved

'NA' if: otherwise

Use of Mobile Machinery, Tall Construction Machinery/Plant, Temporary Structures, Stockpile

25 The application for the deployment of mobile machineries, tall construction machineries/plant, temporary structures, stockpile* has been approved by CAAS Airspace Policy Division. (Refer to AOS, Section D)

‘Tick’ if: CAAS ASP has approved for works requiring the deployment of mobile machineries, tall construction machineries/plant, temporary structures, stockpile

‘NA’ if: otherwise

26 If there is a requirement to demobilise machinery for operational reasons to another area within the airside (designated as staging area), that staging area* has been approved by CAAS Airspace Policy Division.

‘Tick’ if: CAAS ASP has approved the staging area

‘NA’ if: otherwise

Works near Communications, Navigation, Landing and Surveillance Aids

27 CAAS ATE Division has been consulted and has concurred with the works to be carried out in the vicinity of ATE facilities (e.g. HF Stations & Antennae, Multilateration System Sensors (MLAT), Instrument Landing System) and its corresponding critical and/or sensitive areas. (Refer to AOS, Section F)

‘Tick’ if: CAAS ATE has been consulted for

1. works to be carried out within the GP/LLZ critical and sensitive areas; or
2. works to be carried out within 15m radius of all ANS equipment

‘NA’ if: works are carried out outside the above stated areas

Hazard Identification and Risk Assessment

28 The approved Risk Assessment* has been submitted. (Refer to AOS, Section J)

This is a **mandatory** requirement. It must be a 'tick'; 'NA' is not acceptable.

Works affecting Other Airport Systems

29 Relevant stakeholders have been consulted and have concurred with the works. (E.g. Airfield lighting, CCTV, iFerret, drainage, fire hydrant, ADGS, fuel system & M&E systems etc.)

‘Tick’ if: system owner and user of the affected system have concurred the works

‘NA’ if: no other airport system is affected

Please state the type of system and name of officer whom you have liaised with.