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Drone Usage in Construction

A guide to operations, compliance and risk management





Drones have moved from a specialty tool to a practical part of construction planning, documentation, inspection and site oversight. A strong program aligns operational value with FAA compliance, jobsite controls, contracts, data governance and insurance.

Part 107: The Operating Foundation

Most commercial construction drone operations use the Federal Aviation Administration's small UAS framework under 14 CFR Part 107. The rule applies to small, unmanned aircraft weighing less than 55 pounds and establishes pilot, aircraft and operating requirements.

Core operating requirements

Remote pilot

The person acting as remote pilot in command must hold a Remote Pilot Certificate with a small UAS rating or be under the direct supervision of a certificated remote pilot.

Visual line of sight

The remote pilot or visual observer must maintain visual line of sight with the aircraft unless the FAA has granted an applicable waiver.

Altitude and speed

The general limit is 400 feet above ground level and 100 mph. A drone may operate higher than 400 feet above ground when it remains within 400 feet of a structure, subject to the rule's conditions.

Preflight condition

Before flight, the remote pilot must assess the operating environment and confirm that the aircraft is in a condition for safe operation.

Controlled airspace

Operations in controlled airspace require FAA authorization. LAANC may provide near real-time authorization at preapproved altitudes for qualifying operations.

Registration and marking

Each drone operated under Part 107 must be properly registered and marked. Remote ID information must also be reflected in the registration when applicable.

Night operations

Routine Part 107 operations may be conducted at night without a waiver when the remote pilot has completed the FAA's updated knowledge test or recurrent training and the drone has anticollision lighting visible for at least 3 statute miles with a flash rate sufficient to avoid a collision. Lighting intensity may be reduced when the remote pilot determines that operating conditions make it appropriate for safety.

Operations over people and moving vehicles

The FAA permits qualifying operations over people and moving vehicles under four categories. The aircraft and operation must satisfy the requirements for the applicable category. Some categories require an FAA-accepted Declaration of Compliance, operating limitations in the aircraft flight manual, Remote ID compliance, or restrictions on sustained flight over open-air assemblies. Operations that do not fit an authorized category may require a waiver.

Remote identification

Drones that are required to be registered, or are registered, must comply with Remote ID. An operator may use a Standard Remote ID drone, attach an FAA-compliant broadcast module, or fly without Remote ID equipment only within an FAA-Recognized Identification Area and within visual line of sight. A broadcast module reports the drone and takeoff location, while Standard Remote ID also broadcasts control-station location information.

Pilot Certification and Currency

A Remote Pilot Certificate does not expire, but the pilot must remain current to exercise Part 107 privileges. Most certificate holders maintain currency by completing free FAA online recurrent training every 24 calendar months. Pilots seeking an initial certificate generally must pass the initial aeronautical knowledge test at an FAA-approved testing center and complete the FAA application and security screening process.



Airspace authorization and LAANC

The Low Altitude Authorization and Notification Capability, or LAANC, connects drone pilots with FAA-approved service suppliers. For covered airports and qualifying operations, LAANC can provide near real-time controlled-airspace authorization at preapproved altitudes. Further coordination requests may be available for proposed altitudes above the published grid value, up to 400 feet. Operations not supported by LAANC may require a request through FAADroneZone and additional processing time.

Other responsibilities

- Avoid careless or reckless operation and yield to other aircraft.
- Do not act as the remote pilot in command or visual observer for more than one drone operation at a time.
- Make the drone and required records available to the FAA when requested.
- Report an operation to the FAA within ten days when it results in serious injury, loss of consciousness or qualifying property damage under Part 107.
- Review applicable state, local, tribal, privacy, trespass, surveillance and critical infrastructure requirements before collecting imagery or data.
- Confirm any waiver, airspace authorization or operational limitation before each mission.



Using drone technology to improve project visibility

Reality capture and digital twins: Repeatable aerial data can document existing conditions, create site models and support comparisons over time.

BIM and progress tracking: Georeferenced imagery and models can help teams compare installed work with plans and communicate schedule status.

Earthwork and materials: Photogrammetry can support cut-and-fill analysis, stockpile measurement and quantity verification when appropriate controls and survey standards are used.

Inspection and safety: Drones can reduce some work-at-height exposure and improve access to roofs, façades, structures, utilities and difficult terrain. They do not replace competent-person inspections or required engineering review.

Thermal and specialty imaging: Properly equipped aircraft can help identify temperature anomalies, moisture patterns or equipment conditions that warrant further investigation.

Security and incident response: Planned flights may support perimeter observation, post-event documentation and situational awareness, subject to privacy, labor, security and evidentiary requirements.

Manage the risk, not just the flight

Construction companies should treat drone use as an operating program rather than a stand-alone technology purchase. The controls below can help align field activity with contracts, data practices and insurance.

Governance and accountability

- Name a program owner and define who may approve missions, act as remote pilot in command, access data and engage third-party operators.
- Maintain a current inventory of aircraft, Remote ID status, registrations, pilot credentials, training dates, waivers and authorizations.
- Use a written preflight, flight and postflight process, including weather, airspace, people and vehicle exposure, emergency procedures, and battery condition.

Contracts and third parties

- Define the scope of work, ownership and permitted use of imagery, models, analytics and derivative data.
- Require evidence of pilot credentials, aircraft registration, FAA compliance and appropriate insurance before a vendor enters the site.
- Address additional insured status, indemnification, subcontracting, confidentiality, incident reporting, data retention, and limits of liability with legal and insurance advisers.

Cybersecurity and privacy

- Classify drone imagery, location data, credentials and project models according to the project's information security requirements.
- Use approved platforms, access controls, multifactor authentication, encryption and retention schedules.
- Evaluate where data is stored, who can access it, how AI models use it and whether the platform may reuse customer data.
- Coordinate notice, consent and flight-zone practices with applicable laws, owner requirements and workforce policies.

AI-enabled analytics

- Validate automated progress, quantity, defect or safety outputs before relying on them for decisions.
- Document human review, data quality, model limitations and escalation procedures.
- Clarify responsibility for inaccurate analytics, missed conditions, software failure and professional services conclusions.

Insurance alignment

- Review aviation or unmanned aircraft liability, general liability exclusions, property coverage for equipment, workers' compensation, cyber, technology errors and omissions, professional liability and hired or nonowned exposure as applicable.
- Confirm that owned and contracted operations match policy definitions, territorial limits, pilot requirements and contractual obligations.
- Report incidents promptly and preserve flight logs, imagery, maintenance records and authorization documentation.

Talk with your risk and insurance team

Drone programs can improve visibility, documentation and decision-making, but the exposure extends beyond aircraft liability. Before expanding operations, review how the program interacts with project contracts, privacy, cybersecurity, professional services, AI-enabled analytics and third-party vendors.

Gallagher can help construction organizations evaluate these connected risks and align insurance and risk management strategies with the way drones are used in the field.



Key FAA resources

- Small UAS Regulations, Part 107
- Operations Over People
- Part 107 Airspace Authorizations and LAANC
- Remote Identification of Drones
- Recurrent Training Courses for Drone Pilots
- Electronic Code of Federal Regulations, Part 107
- Electronic Code of Federal Regulations, Part 89

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