

Drinking Water Hygiene in Aviation

Secure supply chains and operational preparation for
EU 2025/20



Water safety is renewed at every handover



Real potable-water filling infrastructure

Drinking water for aircraft passes through an operational chain. Every transition can preserve or damage the quality achieved upstream. Public or private supply, storage, filling station, water vehicle, hose, aircraft connection and onboard tank form one hygienic system. Stagnation, temperature, backflow, contaminated couplings or poorly controlled cleaning can create risk at any point.

A robust concept assigns responsibilities, control points and evidence along the whole chain. Laboratory results remain important, but cannot replace daily operational control or technical evaluation of handovers. The controlled chain, rather than a single reading, protects water quality until delivery to the aircraft.

The main new requirements of Commission Delegated Regulation (EU) 2025/20 for ground-handling organisations apply from 27 March 2028. At seven stations, from supply to onboard tank, the responsible party, condition and release decision must be traceable. Tanks, pipes, vehicles, hoses and couplings must be cleanable, inspectable and unambiguously identified. Cleaning, disinfection, maintenance, sampling and release follow defined procedures. Vehicle, time, aircraft, action and result must be connected so deviations can be contained.

Seven stations, one shared quality responsibility

The operational chain has seven stations: 01 water supply; 02 storage; 03 filling station; 04 water vehicle; 05 hose and coupling; 06 aircraft connection; 07 onboard tank. The system map shows where water is transferred, stored, moved, connected and finally made available onboard.

This is an operational model. Specific control points must be derived from the local risk assessment, authority requirements and the airline's procedures. Every handover should identify the asset used, its status, the time, the receiving point and the person or organisation authorised to release it.

Ground handling becomes a demonstrable organisational process

The European Commission adopted the delegated regulation on 19 December 2024. Regulation (EU) 2025/20 was published in the Official Journal on 7 March 2025. Its main requirements apply from 27 March 2028. Organisations need to make procedures, roles and records work in practice.

For potable-water servicing, GH.OPS.320 requires the ground-handling organisation to liaise with the airport operator on the condition of water uplifted for drinking or personal use onboard, including the rule's requirement concerning chemical substances and microorganisms. Water quality is tested periodically in line with local health-authority requirements and the aircraft operator's procedure. The rule therefore connects local water-hygiene duties with operational responsibility on the apron.

Safe delivery is a management task as well as an analytical one. Instructions, training, equipment condition, release decisions and response to deviations must agree. A good sample result is valuable but does not, on its own, prove continuing control. The new requirements supplement, rather than replace, applicable local water and health law.

A question for every organisation

Can each water handover be linked to a released piece of equipment, a time and an accountable procedure? If the answer depends on personal memory, the evidence chain is weak. Define roles and interfaces in writing, integrate procedures into the management system, align the testing plan with authority and operator requirements, link training with maintenance, cleaning and release, and give deviations clear escalation routes.

Legal basis: Commission Delegated Regulation (EU) 2025/20 of 19 December 2024, particularly GH.OPS.320, Potable water servicing, and Article 6 on application dates; EUR-Lex, consulted August 2026.

Make responsibility visible at each handover

Several organisations may take part in one aircraft filling. The task is to assign each actual action clearly, not to state that responsibility is shared in general. The airport, ground handler, vehicle operator, airline, laboratory and authority may have different roles in quality at the transfer point, release of vehicles and equipment, aircraft-specific procedures, testing, containment of deviations and renewed release. The actual allocation must be defined by contract, organisation and site.

Information flow

If a sample is abnormal or a vehicle is removed from service, affected parties must be identifiable without a lengthy search. Vehicle, batch, time and aircraft references limit the scope of the event. Agree in advance who can isolate an asset, arrange an alternative supply and authorise its return. Otherwise contradictory decisions arise under time pressure.

For every task, name who performs, checks, decides and records it; describe what is done in usable instructions; and provide IDs, forms or system data that produce auditable evidence.

Control the hygiene of vehicles, hoses and couplings

Operate tanks and pipework so they can be fully cleaned, flushed and inspected. Inaccessible dead spaces, damaged surfaces and unsuitable materials make hygiene harder and can contribute to recurrent findings.

Store and identify hoses and couplings so their contact surfaces remain protected. Prevent contact with the ground, wastewater, fuels or unapproved connections. Exclude backflow and wrong connections by design or control them through safe procedures.

The standard vehicle check combines functional testing, visual inspection and hygiene release. It examines pumps and valves, but also covers, seals, inner surfaces, hose ends, holders and labels. Before use, check condition, cleaning, protective caps, identification and records. During use, avoid ground contact, protect connections and record standing time or abnormalities. After use, drain, clean, dry, store protected and report deviations.

A measure ends only with checked release

A closed cleaning and disinfection process has four steps: define the trigger, such as an interval, repair, shutdown or abnormal result; specify product, concentration, contact time, temperature and material compatibility; document cleaning, disinfection, flushing and the responsible person; then check effectiveness against defined criteria and release the equipment explicitly.

Release cannot rest solely on the fact that a measure was carried out. Where a continuously or demand-dosed process is used, records should also show whether generation, dosing and measurement operated as intended.

Sampling answers questions when the plan reflects the chain

A single value describes one sample. Location, time and operating state make it useful for investigating causes. Select points according to risk, local authority rules and airline procedures. Sampling, transport and laboratory analysis must be technically sound.

A practical plan asks four questions: What quality enters at the supply or filling point? Does storage or standing time change it? Is the released vehicle hygienically stable? What quality reaches the aircraft connection? The answers establish a baseline, assess storage, verify the vehicle and confirm the handover.

Agree the testing scope and limit or action values for the site with the responsible bodies and the airline. A diagram cannot replace an authority-aligned sampling plan.

Contain an incident before targeted release

Abnormal results and technical faults are easier to control when isolation, notification, alternative supply and release have been agreed in advance. The sequence is to detect a reading, observation or alarm; isolate affected equipment and use; link vehicle, time, route, aircraft and handover point; investigate the cause and clean, disinfect or resample as appropriate; then release only when the stated criteria are met and the decision is recorded.

The visible problem may be at the end of a much longer chain. Investigate source water, filling point, storage, standing time, cleaning state, staff procedure, hose and connection together. A local intervention can remove a symptom while the source remains.

Connected data are essential for proportionate containment. Which asset was used at which

handover and when? What cleaning and release preceded it? Which other aircraft received water in the same period? A contingency procedure should specify approved alternatives, owners and communication routes so supply remains safe under operational pressure.

At minimum, record time and reporting route, asset ID, flight or operation reference, last cleaning and release, measurement or observation, immediate action and owner, follow-up sample and renewed release. Isolate as narrowly as technically defensible, investigate as broadly as protection requires, and release only after a traceable check.

Procedures must work under time pressure

Infrastructure provides the conditions for hygiene; the management system makes control repeatable and testable. Instructions should be understandable, available and usable in real operations. Cover not only the normal case but interruption, wrong connection, damaged cap, long standing time and abnormal measurement.

Training should explain the hygiene reason behind each action. Staff who understand why a hose end is protected or a connection is flushed are better placed to recognise deviations. Attendance alone does not demonstrate competence. Observed work, brief practical checks and operational feedback show whether the standard is understood and followed.

Leadership defines roles, escalation and resources. Operations perform cleaning, checking, filling and release consistently. Audits, deviations and data drive focused improvement. Periodic checks of real work should follow the whole chain, not only forms. New vehicles, hoses, routes, construction activity or airlines can change risk and should be assessed before use and reflected in procedures and training.

Evidence should connect decision, execution and outcome

An audit asks whether a requirement was understood, the planned process is suitable, the process happened and the outcome supports the release decision. Link vehicle IDs, cleaning, maintenance, samples, deviations and service records. Where systems are separate, use clear references and retention rules.

Data quality matters more than the number of fields. Clear IDs, complete time references, traceable decisions and consistent terms are useful; each mandatory field should answer an operational question. Digital systems can help traceability, but cannot correct an unclear process.

Core evidence includes risk and interface assessments; approved instructions; training and competence checks; vehicle and equipment status; cleaning and disinfection; sampling and laboratory results; deviations and corrective measures; and renewed release by an authorised person.

From system map to dependable routine

Preparation for EU 2025/20 starts by mapping the real supply chain. First identify handovers, assets, organisations and data sources. Then assess contamination routes, standing times, backflow and wrong connections. Next define cleaning, inspection, maintenance, release and escalation. Finally pilot the process, train, audit and improve it using operating data.

Prioritise open connections, mobile storage and handovers under changing conditions: they combine technical risk with organisational interfaces. Define isolation and release status so equipment cannot return after maintenance, downtime or an abnormality without a complete check.

Safe drinking water onboard results from controlled performance at every handover. Clear procedures and documented interfaces provide both regulatory preparation and operational reliability. The practical benefit is faster, more consistent decisions about which asset is released, which handovers are affected, what to test and who may approve renewed service.

Sources and working check

Primary source: Commission Delegated Regulation (EU) 2025/20 of 19 December 2024 supplementing Regulation (EU) 2018/1139 with requirements for the safe provision of ground-handling services and the organisations providing them. EUR-Lex CELEX 32025R0020: <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:32025R0020>

Operational guidance: World Health Organization, Guide to Hygiene and Sanitation in Aviation, third edition, 2009; consider supplementary modules and updates alongside local rules and operator procedures.

Check that all handovers are mapped; decision rights are assigned; vehicles, hoses and couplings have unique IDs; cleaning, disinfection and release are connected; sampling answers defined questions; deviations can be traced to assets and operations; alternative supply and escalation are prepared; competence is tested in practice; and records form a continuous decision chain.

Editorial status: August 2026. This report gives technical and organisational guidance and does not replace site-specific legal advice, authority coordination, risk assessment or approved operating instructions.

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