Tank Cleaning and Wall Wash — study guide

Tank cleaning is a confined-space operation with chemical, fire and atmosphere hazards, and the result is proven by a wall wash test. This guide covers the cleaning, the permit, the testing and the PPE.[1][2]

Why clean tanks

Even a small amount of cargo residue left behind can cause problems, so tanks must be thoroughly cleaned to prevent the likelihood of **cross-contamination**. The purpose of tank cleaning is to remove sediment from the tank top plating, remove the build-up of seawater, prepare the tanks for internal inspection, and ensure all vessel containment systems are cleaned for the next load of cargo. Some areas within the tanks are not directly in the trajectory of the washing machines and are harder to clean — these are called **shadows**.

Permits and the atmosphere

A **permit to work** should include a record of all the potential risks, the time the work should end, an outline of safe methods of work, and the sequence of the precautions to be taken. Immediately before entering a confined space, test for **toxic atmospheres**, **flammable atmospheres**, and **oxygen-deficient or enriched atmospheres**. Acceptable oxygen test results for confined space entry are **20.6% to 22.0%**. Where a tank contains residue of noxious liquid substances, the MARPOL Convention and the International Bulk Chemical Code must be complied with.

Roles, PPE and risks

The **Standby Person** should be in continual attendance outside the confined space, with the necessary communications capability to raise an alarm and summon help. As a minimum, the PPE to be worn includes gloves, the gas detector, steel-toe-cap boots or shoes, and respiratory protection. A risk assessment for confined space entry should take into account identifying all the hazards present, assessing all of the risks, and determining the appropriate safety measures. Common dangers of confined space entry include radiation, sources of ignition, heat, and fire and explosions. Working in a confined space is not suited to everyone: those who may want to avoid it include people with claustrophobia, those with heart or breathing problems, and those with physical disabilities.

Stripping and the wall wash

The purpose of "**stripping**" is to prevent a build-up of wash water. A **wall wash sample** is tested for non-volatile matter, impurities and hydrocarbons — the evidence that the tank is clean enough for the next cargo.

Confined space characteristics

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A confined space is a space that is not used in daily activities or for continuous work, has limited openings for entry and exit, and has inadequate ventilation.

Key facts to remember

- Clean thoroughly to prevent cross-contamination. Purpose: remove sediment/seawater, prepare for inspection and next cargo.
- Shadows: areas not reached by the washing machines.
- Permit to work: potential risks, end time, safe methods, sequence of precautions.
- Test for toxic, flammable and oxygen-deficient/enriched atmospheres before entry. Acceptable oxygen: 20.6–22.0%.
- Noxious liquid residue → comply with MARPOL and the IBC Code.
- Standby Person stays outside with communications. Minimum PPE: gloves, gas detector, steel-toe boots, respiratory protection.
- Stripping prevents wash-water build-up. Wall wash tests for non-volatile matter, impurities, hydrocarbons.

Sources

1. IMO International Bulk Chemical Code (IBC Code) and MARPOL Annex II — tank cleaning, residues and wall wash testing.
2. IMO Resolution A.1050(27) — entering enclosed spaces (testing, standby person, PPE and permits).