



Chiller Maintenance Checklist

18 planned preventive maintenance tasks · Free PDF from PM Assist

A practical starting point for planned preventive maintenance. Always refer to the manufacturer's O&M manual and site-specific requirements.

Visual Checks

- ☐ Inspect for refrigerant leaks — check joints, schrader caps, oil staining and brazed connections
- ☐ Inspect water-cooled condenser tubes for fouling, scaling and tube end erosion
- ☐ Check compressor oil level, colour and acidity (TAN) — log against trend
- ☐ Inspect starter panel, contactors, terminations and check star/delta or VSD operation
- ☐ Check anti-vibration mounts, pipework supports and refrigerant pipe insulation
- ☐ Inspect evaporator and condenser for tube fretting or vibration damage (water-cooled)

Functional Checks

- ☐ Check chilled water supply and return temperatures against design delta-T
- ☐ Verify condenser water temperatures (water-cooled) or ambient conditions (air-cooled)
- ☐ Record refrigerant suction and discharge pressures
- ☐ Calculate and verify superheat and subcool against manufacturer target range
- ☐ Check compressor operating current against full load amps (FLA) on each phase
- ☐ Verify chilled water flow rate against design and confirm CHW pump operation
- ☐ Review BMS trending data — flag drift in pressures, currents, delta-T and run hours
- ☐ Check expansion valve operation (TEV/EEV) and superheat stability

Cleaning & Housekeeping

- ☐ Clean air-cooled condenser coils with appropriate fin-friendly coil cleaner

Safety Checks

- ☐ Test all safety controls: HP/LP cutouts, flow switches, freeze stat and oil safety

Record Keeping

- ☐ Update the asset's F-Gas logbook with charge, top-up, leak test and engineer's cert
- ☐ Record kW input vs cooling load and calculate kW/ton or COP for the visit

Maintenance Frequency

Monthly

- Log operating parameters (pressures, temps, currents)
- Check for leaks and oil staining
- Clean air-cooled condenser coils where dust loading is high

Quarterly

- Full operating check under design load
- Test safety controls and freeze protection
- Oil analysis on large chillers (>250 kW)

Every 6 Months

- F-Gas leak check on systems ≥ 50 tonnes CO₂e
- Inspect VSD or starter for harmonics/insulation issues
- Review chilled water quality and inhibitor levels

Annually

- Comprehensive chiller service
- F-Gas leak check and logbook update (5–50 t CO₂e systems)
- Eddy current test of condenser tubes (water-cooled)
- Compressor oil and filter change
- Electrical thermography of panel and motor terminations