

Industrial HVAC Chiller Plant Safety Inspection Checklist

Site / Project	_____	Address	_____
Inspector name	_____	Company	_____
Date	_____	Time	_____

Documentation aid only. Adapt this resource to the site, manufacturer instructions, and applicable local requirements. It does not replace a competent person, professional judgment, legal advice, or a required statutory form.

Inspection checklist

Refrigerant System Integrity

☐ Are refrigerant leak detection systems (sensors) calibrated and functioning correctly, with alarms set at appropriate levels? (ASHRAE 15)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Are refrigerant monitor logs reviewed and documented weekly, showing no abnormal leak trends? (EPA 608)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Is refrigerant piping insulation intact and free from damage or deterioration, preventing condensation and corrosion? (ANSI/IIAR 2)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Are refrigerant storage vessels properly labeled, secured, and protected from physical damage? (OSHA 1910.119)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Is refrigerant recovery equipment available, in good working order, and operated by certified personnel? (EPA 608)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Are refrigerant pressure relief valves properly sized, installed, and tested annually? (ANSI/IIAR 2)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Are refrigerant compressor oil levels within the manufacturer's recommended range? (OEM Manual)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Are refrigerant sight glasses clear and free from bubbles, indicating proper refrigerant charge? (OEM Manual)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐ Are all refrigerant lines clearly identified with the type of refrigerant and flow direction? (ANSI A13.1)	☐ Pass	☐ Fail	☐ N/A	Notes: _____

☐	Is the emergency refrigerant shutdown procedure documented and readily accessible? (Site Specific Procedure)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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Cooling Tower Water Treatment and Legionella Control

☐	Are cooling tower water treatment logs maintained daily, showing consistent adherence to chemical treatment protocols? (ASHRAE 188)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Are biocide levels in the cooling tower water maintained within the recommended range, as verified by regular testing? (ASHRAE 188)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Are total dissolved solids (TDS) levels in the cooling tower water within acceptable limits, preventing scaling and corrosion? (Water Treatment Plan)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is the cooling tower bleed-off system functioning correctly, removing concentrated impurities from the water? (Water Treatment Plan)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Are cooling tower drift eliminators in place and in good condition, minimizing water droplet carryover? (ASHRAE 188)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is a regular cooling tower cleaning and disinfection schedule followed, preventing biofilm formation? (ASHRAE 188)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is Legionella testing performed regularly, with results documented and corrective actions taken when necessary? (ASHRAE 188)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is access to the cooling tower restricted to authorized personnel only? (Site Security Plan)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is the make-up water source for the cooling tower properly treated and monitored? (Water Treatment Plan)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is the cooling tower basin free from cracks, leaks, and debris? (Visual Inspection)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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Pressure Vessel Safety

☐	Are chiller pressure gauges accurate and within calibration dates? (ASME Boiler and Pressure Vessel Code)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Are chiller pressure relief valves properly sized, installed, and tested according to ASME standards? (ASME Boiler and Pressure Vessel Code)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
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☐	Is hydrostatic testing of pressure vessels performed at the required intervals, with documented results? (ASME Boiler and Pressure Vessel Code)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Are regular visual inspections of pressure vessels conducted for signs of corrosion, cracks, or other damage? (NBIC)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is the pressure vessel nameplate legible and does it contain all required information? (ASME Boiler and Pressure Vessel Code)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is the chiller protected against overpressure events by appropriate safety devices? (ASME Boiler and Pressure Vessel Code)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Are pressure vessel supports and foundations in good condition, providing adequate support? (Engineering Design)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is documentation for pressure vessel inspections, testing, and repairs readily available? (NBIC)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Are corrosion protection measures in place for pressure vessels, such as coatings or cathodic protection? (NACE)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Are operating procedures for pressure vessels documented and followed? (Site Specific Procedure)	☐ Pass	☐ Fail	☐ N/A	Notes: _____

Personal Protective Equipment (PPE) and Emergency Preparedness

☐	Are appropriate PPE (gloves, eye protection, respiratory protection) available and used when handling refrigerants? (OSHA 1910.132)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Are appropriate PPE (gloves, eye protection, face shield) available and used when handling water treatment chemicals? (OSHA 1910.132)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is an emergency eyewash station readily accessible and functioning properly? (ANSI Z358.1)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is an emergency shower readily accessible and functioning properly? (ANSI Z358.1)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is a well-stocked first-aid kit readily available? (OSHA 1910.151)	☐ Pass	☐ Fail	☐ N/A	Notes: _____
☐	Is a refrigerant leak emergency response plan in place and understood by all personnel? (Site Specific Procedure)	☐ Pass	☐ Fail	☐ N/A	Notes: _____

☐ Is a Legionella outbreak response plan in place and understood by all personnel? (ASHRAE 188)	☐ Pass ☐ Fail ☐ N/A	Notes: _____
☐ Are fire extinguishers readily accessible, inspected monthly, and appropriate for the hazards present? (NFPA 10)	☐ Pass ☐ Fail ☐ N/A	Notes: _____
☐ Is an emergency contact list posted in a prominent location? (Site Specific Procedure)	☐ Pass ☐ Fail ☐ N/A	Notes: _____
☐ Are confined space entry procedures followed when entering chiller or cooling tower basins? (OSHA 1910.146)	☐ Pass ☐ Fail ☐ N/A	Notes: _____

Findings

#	Item	Location	Severity	Action required
1				
2				
3				
4				
5				
6				
7				
8				

Signature

Inspector signature _____

Name _____

Date _____