



Summer HVAC Efficiency Best Practices

A Pre-Season and In-Season Inspection Tool for Multi-Site Facility Managers Overseeing Commercial HVAC Equipment

How to Use This Checklist

This tool helps multi-site facility managers verify that the four variables governing summer HVAC efficiency - coil cleanliness, airflow optimization, refrigerant charge accuracy, and load balance - have been addressed at every location before peak cooling demand arrives. Use Part 1 as the pre-summer inspection standard for service vendor verification. Use Part 2 as the portfolio tracking log that makes efficiency status visible across all locations. Use Part 3 for in-season monitoring during the cooling season.

Target: All pre-summer efficiency checks completed and all deficiencies corrected before sustained peak heat demand begins. In high-heat markets including the Southwest, Southeast, and Sun Belt, target completion before June 1.

PORTFOLIO INFORMATION

Field	Details
Portfolio Name / Organization	
Number of Locations	
Sectors Represented	☐ Retail ☐ Veterinary ☐ Automotive Dealership ☐ Storage ☐ Healthcare ☐ Other: _____
High-Heat Markets in Portfolio	List states or regions: _____
Humid Markets in Portfolio (dehumidification critical)	List states or regions: _____
Primary Service Vendor	
Vendor Contact for Pre-Summer Scheduling	
Pre-Summer Inspection Target Completion Date	
Person Responsible for Portfolio Efficiency Tracking	

PART 1: LOCATION-LEVEL PRE-SUMMER EFFICIENCY CHECKLIST

Complete one checklist per location. Use during or immediately after the pre-summer service visit to verify that all four efficiency variables have been addressed. Attach service vendor report to completed checklist.

LOCATION INFORMATION

Field	Details
Location Name / Address	
Sector	☐ Retail ☐ Veterinary ☐ Automotive Dealership ☐ Storage ☐ Healthcare ☐ Other
Number of HVAC Units at This Location	
Primary Equipment Type	☐ Rooftop Packaged Units ☐ Split Systems ☐ Both
Service Vendor	
Technician Name	
Inspection Date	
Ambient Temperature at Time of Inspection	°F

VARIABLE 1: COIL CLEANLINESS

Condenser Coil - Check Each

- ☐ Condenser coil fin surfaces physically inspected - not viewed from distance only
- ☐ Fin spaces checked for embedded debris - cottonwood, dust, pollen, biological growth between fin rows

☐ Coil condition rated and documented

Condenser coil condition: ☐ Clean ☐ Light fouling - monitor ☐ Moderate fouling - cleaning required ☐ Heavy fouling - cleaning required before summer

☐ Condenser coil cleaning completed during this visit - if moderate or heavy fouling was found

☐ Cleaning method confirmed appropriate - physical cleaning of fin spaces, not surface rinse only

☐ Post-cleaning coil condition confirmed - fin spaces clear, no remaining embedded debris

☐ Minimum two-foot clearance around condenser unit confirmed - no obstructions, stored materials, or vegetation within clearance zone

☐ No discharge air recirculation condition identified - unit not positioned so hot exhaust air returns to intake

Condenser coil notes: _____

Condenser coil cleaning required: ☐ Completed this visit ☐ Scheduled for: _____ ☐ Not required

Evaporator Coil - Check Each

☐ Evaporator coil accessible for inspection at this location

☐ Evaporator coil fin surfaces inspected for dust accumulation and biological growth

☐ Evaporator coil condition rated and documented

Evaporator coil condition: ☐ Clean ☐ Light fouling ☐ Moderate fouling - cleaning required ☐ Heavy fouling - cleaning required

☐ Evaporator coil cleaning completed during this visit - if fouling found

☐ Condensate drain pan inspected - no standing water, biological growth, or blockage

☐ Condensate drain line confirmed clear - water flows freely to drain

Evaporator coil notes: _____

Evaporator coil cleaning required: ☐ Completed this visit ☐ Scheduled for: _____ ☐ Not required ☐ Not accessible - flag for follow-up

Coil Cleaning Environmental Calibration

Note conditions at this location that affect how frequently coil cleaning should be performed:

☐ Heavy cottonwood or allergen season in this market - condenser coil may require mid-season inspection

☐ Construction activity nearby - elevated dust load on condenser coil likely

☐ Animal dander or hair in return air stream (veterinary) - evaporator coil accumulation accelerated

☐ High-traffic area producing elevated airborne particulate - both coils affected

☐ Standard conditions - annual cleaning schedule appropriate

Recommended condenser coil cleaning frequency for this location: ☐ Annual ☐ Semi-annual ☐ Seasonal - specify: _____

VARIABLE 2: AIRFLOW OPTIMIZATION

Filter Condition and Static Pressure - Check Each

☐ All filters at this location inspected and condition noted

Filter condition at inspection: ☐ Clean - within service interval ☐ Loaded - replacement required ☐ Overloaded - immediate replacement required

☐ All filters replaced during this visit - or confirmed within acceptable remaining service life

☐ Filter type in use documented - MERV rating and dimensions confirmed

Filter type / MERV rating in use: _____

☐ Static pressure drop across filter bank measured and documented

Static pressure measured: _____ inches w.c. *Design range for this system:* _____ inches w.c.

☐ Static pressure confirmed within design range - or flag raised if above design limit

Static pressure status: ☐ Within design range ☐ Above design range - investigate cause ☐ Not measured - add to next visit scope

☐ If static pressure above design range: cause investigated

Cause of elevated static pressure (if applicable): ☐ Overloaded filter ☐ Higher-efficiency filter than system designed for ☐ Duct obstruction ☐ Other: _____

☐ If higher-efficiency filter is creating static pressure penalty: fan capacity reviewed against filter resistance



Supply Airflow Distribution - Check Each

☐ Supply air temperature measured at representative diffuser locations in occupied zones

Number of zones checked: _____ *Supply air temperatures recorded:* _____ °F range

☐ Supply air temperature confirmed achieving setpoint offset at diffuser locations - conditioned air reaching occupied spaces

☐ Any zones identified where supply air temperature at diffuser is significantly warmer than other zones - indicating distribution imbalance

Zones with distribution imbalance identified: ☐ None ☐ Yes - describe: _____

☐ Visible duct obstructions or collapsed flexible duct sections identified and flagged

☐ Damper positions confirmed correct for cooling season operation

☐ Supply registers and return grilles confirmed unobstructed - furniture, merchandise, or equipment not blocking airflow

☐ Any recent space reconfigurations at this location that may have affected distribution noted and flagged for load balance assessment

Space reconfigurations since last service: ☐ None known ☐ Yes - describe: _____

Fan and Air Handler - Check Each

☐ Supply fan confirmed operating - no unusual noise or vibration

☐ Supply fan motor amperage measured and documented against nameplate

Fan motor amperage measured: _____ *A Nameplate amperage:* _____ A

☐ Belt condition confirmed on belt-driven units - no cracking, glazing, or excessive wear

☐ Air handler cabinet confirmed sealed - no visible air bypassing filter or coil

Airflow notes: _____

VARIABLE 3: REFRIGERANT CHARGE ACCURACY

Charge Verification - Check Each

☐ Refrigerant charge verified at ambient temperature appropriate for meaningful measurement - not at ambient below 65°F

Ambient temperature at time of charge verification: _____ °F

☐ Suction pressure measured and documented

Suction pressure: _____ psig *Expected range at current conditions:* _____ psig

☐ Discharge pressure measured and documented

Discharge pressure: _____ psig *Expected range at current conditions:* _____ psig

☐ Superheat measured and documented

Superheat measured: _____ °F *Target range for this system:* _____ °F

☐ Subcooling measured and documented

Subcooling measured: _____ °F *Target range for this system:* _____ °F

☐ Charge status confirmed based on superheat and subcooling measurements

Refrigerant charge status: ☐ Correct ☐ Undercharged - refrigerant added ☐ Overcharged - refrigerant removed ☐

Unable to verify at current ambient - reschedule

☐ If charge was low: leak check performed at all accessible fittings, connections, and coil surfaces

Leak check result: ☐ No leak identified ☐ Leak identified at: _____ ☐ Leak repaired during this visit ☐ Leak repair scheduled for: _____

☐ If refrigerant was added without leak identification: flagged for follow-up leak check

☐ Refrigerant type confirmed and documented

Refrigerant type: ☐ R-410A ☐ R-32 ☐ R-454B ☐ Other: _____

☐ Prior service records reviewed for pattern of repeated refrigerant additions - indicator of unresolved leak

Prior recharge history at this location: ☐ No pattern ☐ Repeated additions noted - leak search required

Refrigerant notes: _____

Leak Management Follow-Up

- ☐ Any active leak identified during this visit has a repair scheduled before peak summer demand begins
- ☐ Any location with a pattern of repeated refrigerant additions has a leak search scheduled - not another recharge without source identification

Leak repair status: ☐ No leak present ☐ Repaired this visit ☐ Scheduled for: _____ ☐ Under investigation

VARIABLE 4: LOAD BALANCE**System-to-Building Match Assessment - Check Each**

- ☐ System reviewed for evidence of consistent load imbalance - patterns of comfort complaints, zones that cannot achieve setpoint, or persistent temperature differentials between areas
- Comfort complaint pattern at this location: ☐ None ☐ Specific zones consistently warm ☐ System runs continuously without achieving setpoint ☐ Short-cycling noted ☐ Other: _____
- ☐ Thermostat setpoints reviewed - confirmed appropriate for space use and occupancy schedule
- ☐ Any space changes at this location since last load assessment identified
- Space changes noted: ☐ None ☐ Floor plan reconfiguration ☐ New equipment added (kitchen, medical, display lighting) ☐ Enclosed previously open area ☐ Added occupancy or extended hours ☐ Other: _____
- ☐ Supply and return temperature differential measured at air handler
- Supply air temperature: _____ °F Return air temperature: _____ °F Differential: _____ °F Expected range: 15-20°F
- ☐ Temperature differential within expected range - or investigation initiated if significantly outside range
- Temperature differential status: ☐ Within expected range ☐ Below expected range - investigate airflow or refrigerant ☐ Above expected range - investigate load or refrigerant
- ☐ Any equipment at this location showing signs of consistent operation at or above capacity - continuous operation without achieving setpoint, high discharge temperatures at moderate ambient - flagged for load assessment
- Load assessment required: ☐ No ☐ Yes - flag for engineering review

Sector-Specific Load Considerations

Check applicable items for this location's sector:

Retail

- ☐ Point-of-sale equipment heat load reviewed - significant equipment additions since last assessment noted
- ☐ Display lighting changes reviewed - LED retrofits reduce load; older high-output displays increase load
- ☐ Refrigerated case heat rejection reviewed - cases in open floor areas add to cooling load

Veterinary

- ☐ Recovery area temperature requirements confirmed - stable temperature zones for post-procedure animals
- ☐ Surgical suite conditioning reviewed - temperature and humidity requirements for clinical areas
- ☐ Kennel and boarding areas reviewed - high occupancy animal areas generate significant heat and humidity load

Automotive Dealership

- ☐ Showroom enclosed areas reviewed - enclosed drives or service areas added since last assessment
- ☐ Customer amenity areas reviewed - lounge additions or expansions change conditioning requirements
- ☐ Parts storage areas reviewed - climate requirements for parts inventory if applicable

Storage

- ☐ Climate-controlled storage temperature and humidity requirements confirmed - core product requirement
- ☐ Seasonal inventory changes that affect load noted - high-value stored items with specific requirements flagged
- ☐ Insulation and building envelope condition reviewed - storage facility performance is highly envelope-dependent

Healthcare

- ☐ Patient care area conditioning requirements reviewed - temperature and air quality standards confirmed
- ☐ Any new clinical equipment added that generates significant heat load - imaging equipment, sterilization equipment
- ☐ Air change requirements for clinical areas confirmed - ventilation rates may differ from standard commercial

Load balance notes: _____

Load assessment recommended: ☐ No ☐ Yes - reason: _____

LOCATION EFFICIENCY SUMMARY

Variable	Status	Action Required	Action Completed	Cleared
Condenser coil cleanliness	☐ OK ☐ Needs attention		☐ Yes ☐ No	☐ Yes ☐ No
Evaporator coil cleanliness	☐ OK ☐ Needs attention		☐ Yes ☐ No	☐ Yes ☐ No
Filter condition and static pressure	☐ OK ☐ Needs attention		☐ Yes ☐ No	☐ Yes ☐ No
Supply airflow distribution	☐ OK ☐ Needs attention		☐ Yes ☐ No	☐ Yes ☐ No
Refrigerant charge	☐ OK ☐ Needs attention		☐ Yes ☐ No	☐ Yes ☐ No
Refrigerant leak status	☐ OK ☐ Needs attention		☐ Yes ☐ No	☐ Yes ☐ No
Load balance	☐ OK ☐ Needs assessment		☐ Yes ☐ No	☐ Yes ☐ No
Overall location status				☐ Cleared for summer ☐ Follow-up required

Follow-up items and deadlines: _____

PART 2: PORTFOLIO EFFICIENCY TRACKING LOG

Complete one row per location. Use to track pre-summer efficiency status across all locations and identify patterns requiring portfolio-level attention. Add more rows as needed.

Location	Sector	Inspection Date	Condenser Coil	Evaporator Coil	Airflow / Static Pressure	Refrigerant Charge	Leak Status	Load Balance	Overall Status	Follow-Up Required
			☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ Cleared ☐ Pending	
			☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ Cleared ☐ Pending	
			☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ OK ☐ Flag	☐ Cleared ☐ Pending	

Portfolio Efficiency Summary

Metric	Count	Percentage
Total locations inspected		
Locations cleared - all four variables addressed		%
Locations with condenser coil cleaning required		%
Locations with evaporator coil cleaning required		%
Locations with static pressure outside design range		%
Locations with airflow distribution imbalances identified		%
Locations with refrigerant charge corrected		%
Locations with active refrigerant leaks found and repaired		%
Locations with repeated recharge history - leak search required		%
Locations flagged for load balance assessment		%

Locations not yet inspected		%
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Portfolio Pattern Flags

- ☐ Multiple locations in the same market with heavy condenser coil fouling - may indicate regional environmental event requiring adjusted cleaning frequency
- ☐ Multiple locations with static pressure above design range - may indicate portfolio-wide filter specification issue requiring review
- ☐ Multiple locations with refrigerant undercharge without identified leak source - may indicate a technician practice gap in charge verification methodology
- ☐ Multiple locations in same sector with load balance flags - may indicate a sector-specific load change pattern requiring systematic assessment
- ☐ Multiple locations with evaporator coil fouling in humid markets - elevated frequency cleaning schedule recommended for those locations

PART 3: IN-SEASON MONITORING CHECKLIST

Use this abbreviated checklist during any in-season maintenance visit, comfort complaint response, or routine monitoring check during the cooling season. Full pre-summer checklist is not required - this is a focused efficiency spot-check.

Date: _____ **Location:** _____ **Ambient Temperature:** _____ °F

Coil Condition

- ☐ Condenser coil visual inspection - any fouling accumulation since pre-season cleaning
- Coil status:* ☐ Clean - no action needed ☐ Light fouling - monitor ☐ Significant fouling - schedule cleaning
- ☐ Condensate drain confirmed flowing - no standing water in drain pan

Airflow

- ☐ Filter condition visually confirmed - not past service interval
- ☐ Supply air reaching occupied zones - no comfort complaints from specific zones indicating distribution problem
- ☐ Any new obstructions to supply registers or return grilles noted and cleared

Refrigerant

- ☐ System achieving setpoint at current ambient conditions - no indication of capacity loss
- ☐ Suction line temperature check - suction line should feel cold to the touch and show condensation in humid markets; warm or ambient-temperature suction line indicates possible undercharge
- ☐ No evaporator frost or ice observed - icing indicates airflow restriction or refrigerant undercharge

Comfort and Load

- ☐ No persistent comfort complaints from specific zones since last visit
- ☐ System cycling normally - not running continuously without achieving setpoint at current ambient
- ☐ No new equipment or space changes at location since last visit that would affect load

In-Season Flag - Escalate to Full Service Call If:

- ☐ Condenser coil has significant fouling accumulation mid-season in a high-fouling market - schedule cleaning
- ☐ System not achieving setpoint at ambient temperatures within normal design range
- ☐ Suction line not cold or showing frost - refrigerant charge concern
- ☐ Evaporator icing observed
- ☐ Comfort complaints from specific zones have persisted since pre-season inspection
- ☐ New equipment or space changes have occurred that materially affect load