EnviroTemp ACFlush

Measurement & Verification Reference Guide for Inverter HVAC Systems

Additional technician guidance for documenting pre- and post-installation performance.

Professional Use Notice

This reference guide is intended for **qualified HVAC technicians** performing Measurement & Verification when installing EnviroTemp ACFlush in inverter-driven HVAC systems.

Inverter systems may also be described as:

- Variable Speed HVAC Systems
- Variable Capacity HVAC Systems
- Modulating HVAC Systems

This reference guide is intended to support the quick field procedure shown on the EnviroTemp ACFlush Installation Procedures page. It provides additional Measurement & Verification guidance for inverter, variable-speed, variable-capacity, and modulating HVAC systems.

Section 1 — System Condition Requirement

Before EnviroTemp ACFlush is installed, the HVAC system must be operating in accordance with the equipment manufacturer's specifications, with no known outstanding or unperformed repairs required.

Do not proceed with installation or Measurement & Verification if the system has unresolved faults, required repairs, abnormal operating conditions, incorrect charge, airflow restrictions, electrical issues, dirty coils, blocked filters, blower issues, thermostat faults, or any other condition preventing proper operation.

EnviroTemp ACFlush is intended to be applied only to systems that are in proper working order and capable of being accurately measured before and after installation.

EnviroTemp ACFlush is not intended to mask, bypass, or compensate for unresolved mechanical, electrical, refrigerant, airflow, or maintenance issues.

Section 2 — Introduction

2.1 Purpose of This Reference Guide

This reference guide provides qualified HVAC technicians with additional guidance for performing Measurement & Verification when installing EnviroTemp ACFlush in inverter-driven HVAC systems.

Inverter systems require a modified M&V approach due to their variable-capacity operation and rapid modulation response. Pre- and post-installation readings should be taken under comparable operating conditions wherever possible.

2.2 Typical Performance Outcome

Under normal operating conditions, EnviroTemp ACFlush may deliver measurable improvements such as:

- 1°–4°F improvement in delivered air temperature
- Faster coil heat exchange
- Reduced compressor workload
- Improved system stability

Systems less than 12 months old may show reduced improvement due to minimal baseline degradation.

2.3 Why Inverter Systems Require Special M&V Guidance

Inverter systems automatically adjust compressor speed based on load. Once EnviroTemp ACFlush begins improving coil efficiency, the system may:

- Reach target temperature faster
- Reduce compressor speed
- Ramp down before post-installation readings can be captured

This reference guide helps technicians document performance under comparable pre- and post-installation conditions wherever possible.

Section 3 — Pre-Installation Requirements

3.1 Mandatory System Inspection

Before installing EnviroTemp ACFlush, technicians should complete a full operational inspection using the company's approved pre-installation service checklist or equivalent service procedure.

Inspection should include:

- Refrigerant line condition
- Coil cleanliness
- Filter condition
- Blower performance
- Electrical integrity
- Thermostat operation
- System charge verification, if applicable
- Any known fault, abnormal condition, or required repair

Do not proceed with installation or M&V if the system is not operating correctly.

Any required repairs, maintenance issues, or abnormal operating conditions should be addressed before EnviroTemp ACFlush is installed.

Section 4 — Pre-Installation Temperature Measurement

4.1 System Preparation

Before taking pre-installation readings:

1. Record job details, equipment details, and technician notes using the company's approved customer paperwork or service record.
2. Turn the system ON.
3. Confirm the system is operating at full load.

4.2 Thermostat Configuration

To help prevent inverter modulation during measurement:

- **Cooling:** Set the thermostat to the lowest setting.
- **Heating:** Set the thermostat to the highest setting.

This helps force continuous full-capacity operation so that pre- and post-installation readings can be compared more accurately.

4.3 Stabilization Period

Allow the system to run for:

5–10 minutes

Verify full-load operation by checking AMP draw.

4.4 Temperature Measurement

Take the pre-installation temperature reading at the register closest to the air handler.

Record:

- AMP draw
- Supply air temperature
- Ambient conditions, optional but recommended
- Time reading was taken
- Any relevant technician notes

Use the same register for the post-installation reading.

Note: Opening doors or windows is not required for inverter systems and should not be performed.

Section 5 — EnviroTemp ACFlush Installation

Install EnviroTemp ACFlush strictly according to the approved EnviroTemp ACFlush installation instructions.

Ensure:

- Correct approved dosage is used
- Proper injection technique is followed
- System remains running during installation
- Suction line access is not interrupted
- Standard HVAC safety practices are followed
- Applicable equipment manufacturer requirements and local codes are observed

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Section 6 — Post-Installation Temperature Measurement

6.1 Post-Injection Stabilization

After installation:

- Allow **5–10 minutes** for EnviroTemp ACFlush to circulate.
- Confirm the system is still operating at full load.
- Verify AMP draw is similar to the pre-installation reading.
- Maintain the same measurement location used for the pre-installation reading.

Comparable operating conditions are important when documenting pre- and post-installation performance.

6.2 Temperature Monitoring

1. Begin taking post-installation temperature readings at the same register used for the pre-installation reading.
2. Continue monitoring until a measurable temperature change is observed.
3. Typical observed improvement may occur within **5–15 minutes**.
4. Typical observed improvement may be **1°–4°F**, subject to system condition, age, load, and operating conditions.

6.3 Documentation

Record the following using the company's approved customer paperwork, service record, or optional M&V table:

- Post-installation AMP draw
- Post-installation supply air temperature
- Time elapsed since installation
- Any relevant technician notes

6.4 Restore System Settings

Once readings are complete:

- Return the thermostat to its original setting.
- Confirm normal system operation.
- Close any doors or windows, if applicable.
- Ensure the customer's system is left operating correctly.

Section 7 — Special Considerations for Rapid Inverter Response

In some cases, EnviroTemp ACFlush may take effect quickly, causing the inverter system to ramp down before a post-installation reading can be captured.

If this occurs:

- The system may still produce equal or improved delivered air temperature at reduced capacity.
- This may indicate improved coil efficiency and reduced compressor workload.
- Document the observation in the technician notes section.

This behaviour may be normal in inverter systems and should be documented as part of the M&V record. Equal or improved delivered air temperature at reduced capacity may indicate improved coil efficiency and reduced compressor workload.

Section 8 — Support and Escalation

For installation support, performance verification questions, or troubleshooting, technicians should contact their service manager or their company's designated EnviroTemp ACFlush lead.

If further support is required, the company may contact its EnviroTemp ACFlush ambassador or authorised product dealer.

Appendix — Optional Documentation Tables

Where the company's own customer paperwork or service record already captures this information, technicians should use the company's approved documentation process.

The following tables may be used where additional M&V documentation is required.

Table 1 — System Details

Field	Details
Customer / Site	
Date	
Equipment Make / Model	
Serial Number	

Field	Details
Mode	Cooling / Heating
Technician Name	

Table 2 — M&V Readings

Reading	AMP Draw	Supply Air Temperature	Time Elapsed	Technician Notes
Pre-Installation				
Post-Installation				

Optional Additional Notes

Technicians may also record:

- Ambient conditions
- System age
- System size
- Customer-reported comfort concerns
- Site conditions
- Any unusual system behaviour observed during M&V