



## Frozen AC Unit: Causes, Quick Checks & Safe Fixes

Ultimate DIYer Free Library – AC / HVAC Series

A frozen AC system is a warning sign that should be addressed quickly.

### Why AC Units Freeze

Low airflow or refrigerant issues cause coils to ice over.

### Immediate Steps to Take

Turn off cooling and allow the system to thaw.

### Common Homeowner Checks

Check air filters, vents, and return airflow.

### When to Call a Professional

Repeated freezing usually requires licensed service.

## Why AC Units Freeze in the First Place

A frozen AC unit is not the problem — it is a **symptom**.

Freezing occurs when the evaporator coil gets **too cold**, allowing moisture in the air to freeze instead of drain away.

This happens for two main reasons:

1. **Restricted airflow**
2. **Low refrigerant levels**

Airflow issues are the **most common homeowner-related cause**.

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## ◆ **What Homeowners Should Check FIRST (Before Calling for Service)**

These checks cost nothing and can prevent unnecessary service calls.

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### ◆ **Clogged or Dirty Air Filter (Most Common Cause)**

A clogged filter restricts airflow across the evaporator coil.

When airflow drops:

- The coil gets colder
- Moisture freezes instead of draining
- Ice builds rapidly

**Action:**

- Remove the filter immediately
  - Replace with a clean filter
  - Never run the system long-term without a filter
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### ◆ **Too Many Air Filters Installed**

Installing filters in **multiple locations** causes serious airflow restriction.

Common mistake:

- Filters in return vents
- **AND** a filter at the furnace or air handler

This double filtering chokes the system.

**Action:**

- Use **one filter location only**

- Follow the system's original design
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## ◆ **Overly Restrictive High-MERV Filters**

High-MERV filters trap more particles — but also restrict more air.

If your system isn't designed for it:

- Airflow drops
- Coils freeze
- Compressor strain increases

### **Action:**

- Use moderate filtration
  - Prioritize airflow over extreme particle capture
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## ◆ **Blocked or Closed Vents & Returns**

Air must move freely through the system.

Check for:

- Closed supply vents
- Furniture blocking returns
- Rugs covering floor returns

Even one blocked return can reduce system airflow enough to cause freezing.

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## ◆ **Dirty Evaporator Coil (Homeowner Awareness)**

Dust buildup on coils acts like insulation.

- Reduces heat transfer
- Lowers coil temperature
- Encourages ice formation

⚠️ Coil cleaning often requires professional access.

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## ◆ What to Do Immediately If Your AC Is Frozen

If ice is visible:

1. Turn **OFF cooling**
2. Set the fan to **ON** (if possible)
3. Allow the system to fully thaw

Running a frozen system can cause **severe damage**.

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## ◆ Low Refrigerant (Professional Diagnosis Required)

Low refrigerant reduces pressure inside the coil, lowering temperatures and causing freezing.

Signs include:

- Repeated freezing after airflow issues are corrected
- Weak cooling
- Hissing or bubbling sounds

⚠ Refrigerant systems are sealed. Low refrigerant means there is a **leak**.

Homeowners **should not**:

- Add refrigerant
- Bypass safety devices

This requires a licensed professional.

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## ◆ Why Ignoring Freezing Gets Expensive

Running a frozen system can lead to:

- Liquid refrigerant returning to the compressor
- Compressor overheating
- Internal compressor damage

A failed compressor is **very costly** and often one of the most expensive HVAC repairs.

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## ◆ **When to Call a Professional**

Call for service if:

- Freezing returns after airflow corrections
  - Ice forms quickly
  - Refrigerant issues are suspected
  - Electrical or control problems exist
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## **Ultimate DIYer Rule of Thumb**

**Check airflow first — most frozen AC problems start there.**

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