

The Math Behind Degree Days: The Cold Hard Facts



Heating Degree Days (HDD) aren't actual "days" — they're a way to measure how cold it gets and how much heating a home needs because of it. Think of 65°F as the point where most buildings don't need heat; when temperatures drop below that, a heating system has to start working.

As the U.S. Energy Information Administration explains: "Degree days are measures of how cold or warm a location is. A degree day compares the mean (the average of the high and low) outdoor temperatures recorded for a location to a standard temperature, usually 65° Fahrenheit (F) in the United States. The more extreme the outside temperature, the higher the number of degree days. A high number of degree days generally results in higher energy use for space heating or cooling."

• How HDD is calculated each day:

1. 65 minus today's average temperature = Heating Degree Days for the day

• Example:

2. If today's average temperature is 55°F:

$$65 - 55 = 10 \text{ Heating Degree Days}$$

3. If today's average temperature is 30°F:

$$65 - 30 = 35 \text{ Heating Degree Days}$$

That day was much colder, so the heater had to work harder.

• Monthly Total Explained:

Each day's Heating Degree Days are added together for the entire month.

If many days are cold, the totals climb quickly.

• Example Month Calculation:

$$65 - 50 = 15 \text{ HDD per day}$$

$$15 \times 31 \text{ days} = 465 \text{ HDD in one month}$$

In 2024, the West South Central United States recorded 339 Heating Degree Days for December. That does NOT mean there were 339 days in the month.

It means all the cold from all the days added together equals 339 degrees below 65°F.

4. Think of HDD like a running total:

• Every degree below 65°F adds one unit.

• Mild days add only a few units.

• Cold days add many more.

December accumulated a large number because temperatures stayed consistently lower.

• Heating Degree Days answer one key question:

"How hard did the heater have to work this month?"

• They DO NOT mean:

5. How many days passed

• How long the winter was

• They DO mean:

6. How cold it really was

How much heating energy people needed

That's it! **Heating Degree Days measure cold — not time.**

Join TPGA to get monthly Heating Degree Day Data.

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