

How big of a hailstorm can photovoltaic panels withstand



Overview

Most solar panels are designed to withstand hailstones up to 1" in diameter, at 50mph. Some manufacturers even list the size hail it is rated for on. Historically, solar photovoltaic PV modules have survived the majority of hail events they have experienced. 75-inch hailstones, demonstrating that properly selected panels can withstand extreme conditions. While modern solar panel designs incorporate durable materials and robust construction techniques, the impact of hailstones—especially those exceeding one inch in diameter—can potentially. The National Renewable Energy Laboratory (NREL) has fired larger hailstones (up to 2 inches) at panels using compressed-air cannons, mimicking severe storms. [Subscribe to the EnergySage Newsletter!](#) Plug in for monthly energy-saving tips. Solar panels are designed to withstand harsh weather conditions, like high winds and heavy rain - but what about frozen balls of hail falling from the sky?

Luckily, severe hail storms aren't super common around the country, and most solar panels can withstand light-to-moderate impact.

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Can Solar Panels Survive a Hailstorm? Testing Durability in Extreme ...

Yes, most can--withstand small to moderate hail with little trouble, thanks to rigorous design and testing. Extreme hail (2+ inches) poses a bigger threat, but such events are outliers, and damage is ...

Hail vs. Solar Panels: Who Wins?

Most solar panels are designed to withstand hailstones up to 1? in diameter, at 50mph. Higher-quality panels are often constructed to endure larger hailstones, offering better protection in severe weather ...



What You Need To Know About Solar Power Hail Damage

Solar panels with UL 61730 or IEC 61730 markings are resilient to most hail storms across the U.S. Solar panels that pass these tests can withstand between one inch to three-inch hailstones traveling at 16.8 mph ...



Solar Panels & Hail: How Much Hail Can Solar Panels Handle?

In fact, most manufacturers test and certify their solar panels to withstand hail up to one inch in diameter falling at 50 miles per hour. Today's solar panels are also extremely resilient against high winds and heavy rain. ...



Can Solar Panels Withstand Hail? A 2025 Durability Guide

High-quality, modern solar panels are extremely durable and designed to withstand most hail storms. The Proof: Tier-1 panels are certified (IEC 61215) to withstand a direct impact from **1-inch (25mm) hail at over 50 ...

Does Hail Damage Solar Panels? Complete 2025 Protection Guide

Real-world performance exceeds expectations: NREL's Colorado facility achieved a 99.97% panel survival rate during a severe 2017 hailstorm with 2.75-inch hailstones, demonstrating that properly selected ...



Can Your Solar Panels Survive

a Brutal Hailstorm?

While modern solar panel designs incorporate durable materials and robust construction techniques, the impact of hailstones--especially those exceeding one inch in diameter--can potentially ...



Hail Damage Mitigation for PV Systems , Department of Energy

Historically, solar photovoltaic PV modules have survived the majority of hail events they have experienced. In areas that have experienced very large hail (greater than 1 3/4" or 44 mm diameter), however, hail has caused ...



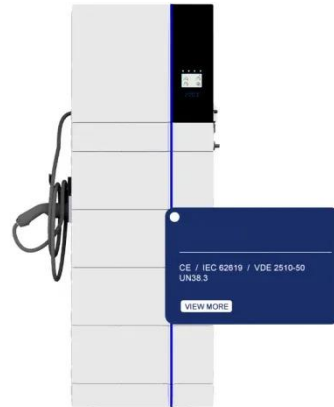
Can Hail Damage Solar Panels? (2026) , ConsumerAffairs®

Most solar panels can easily withstand up to golf-ball-size hailstones, or about 1 3/4 inches in diameter. However, they may not be able to withstand tennis-ball-size or baseball-size hail.



Can hail damage solar panels? Here's the truth

Modern solar panels are surprisingly resilient. Most can withstand golf ball-sized hail because your panels' tempered glass provides solid protection.



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