How Denver's Dry Winters and High UV Index Silently Damage Asphalt Shingles

Nobody thinks about their roof in February. The snow looks clean up there, the gutters are quiet, and as long as nothing is leaking, most homeowners in Denver assume everything is fine. The problem is that winter in Colorado is not actually gentle on your roof. It is just quietly destructive in ways that do not show up until a July hailstorm makes them impossible to ignore.

This past winter made things worse than usual. Colorado came out of the 2025/2026 season with well below average precipitation across the Front Range, a dry stretch that kept snowpack low and left the ground, and everything sitting on top of it, starved of moisture for months. If your roof felt the effects of that drought, you probably have no idea yet. But it is worth understanding what actually happened up there.

Denver sits at 5,280 feet, which sounds like a fun fact until you understand what it means for UV exposure. At that elevation, the atmosphere filters out less solar radiation than it does at sea level. The UV index in Colorado regularly exceeds levels recorded in Miami and Los Angeles, even in the middle of winter. On a clear January day with snow on the ground, your roof is absorbing and reflecting intense UV radiation from both above and below simultaneously. That reflective bounce off fresh snow is particularly brutal, and it happens for months.

What UV Actually Does to Asphalt Shingles

Asphalt shingles rely on oils within the asphalt layer to stay flexible. Those oils keep the shingle from becoming brittle, allow it to expand and contract with temperature changes, and hold the granule surface in place. UV radiation breaks those oils down gradually over time. You cannot see this happening. There is no visible warning sign during the process itself.

What you eventually see is the result: shingles that have gone stiff, started to cup or curl at the edges, and lost significant granule coverage in patches. In Denver, this process is accelerated compared to lower elevation cities because the UV load is simply higher year round. A shingle that might hold up for 25 years in a coastal city with regular humidity and lower UV exposure can show meaningful degradation in 15 years here.

The Dry Air Problem

Colorado's low humidity makes the situation worse in a normal year. This year it compounded everything. Moisture in the air slows the rate at which asphalt loses its oils, and humid climates give shingles a kind of passive maintenance just from the environment. Denver's average relative humidity in winter already drops into the teens and twenties under normal conditions. This past winter, with precipitation consistently running below average and drought conditions expanding across the state, that drying effect had even more time to do its work with nothing to counteract it.

This is why Denver roofs blister. Blistering happens when volatile compounds trapped inside the shingle have nowhere to go as the material dries and heats. Small pockets form beneath the surface and eventually rupture. Once a shingle blisters, that spot has compromised waterproofing and compromised impact resistance. It does not take a large hailstone to crack a shingle that has already been weakened this way.

Why This Matters Before Storm Season

By the time June arrives and the hail starts, a roof that just came through one of the drier Front Range winters in recent memory is already partway to failure. The storm does not create the damage so much as it reveals it. Homeowners file claims, adjusters come out, and what looks like pure hail damage is actually a combination of storm impact and months of UV and drought degradation working together. Insurance carriers know this distinction, and it affects how your claim gets evaluated.

Getting your roof inspected this spring is not just routine maintenance. After the winter Colorado just had, it is genuinely necessary.