



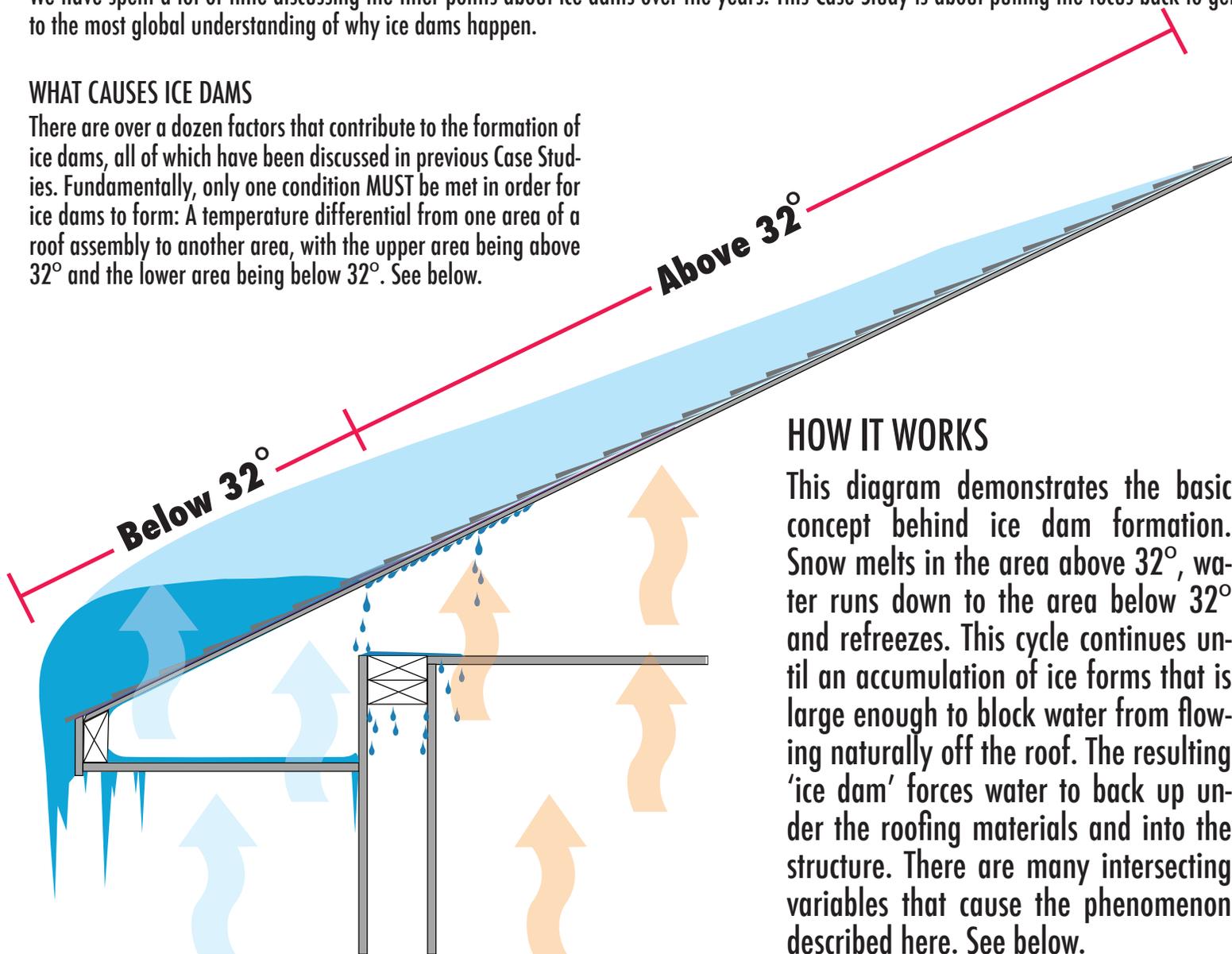
WHAT CAUSES ICE DAMS

The Fundamental Underlying Cause of Most Ice Dams

We have spent a lot of time discussing the finer points about ice dams over the years. This Case Study is about pulling the focus back to get to the most global understanding of why ice dams happen.

WHAT CAUSES ICE DAMS

There are over a dozen factors that contribute to the formation of ice dams, all of which have been discussed in previous Case Studies. Fundamentally, only one condition **MUST** be met in order for ice dams to form: A temperature differential from one area of a roof assembly to another area, with the upper area being above 32° and the lower area being below 32°. See below.



HOW IT WORKS

This diagram demonstrates the basic concept behind ice dam formation. Snow melts in the area above 32°, water runs down to the area below 32° and refreezes. This cycle continues until an accumulation of ice forms that is large enough to block water from flowing naturally off the roof. The resulting 'ice dam' forces water to back up under the roofing materials and into the structure. There are many intersecting variables that cause the phenomenon described here. See below.

LIST OF 7 CONTRIBUTING FACTORS TO ICE DAM FORMATION

1. A period of outdoor temperatures ranging between 0°-10° at night followed by daytime temperatures between 10°-20°.
2. Repeated snow falls that keep the roof loaded with new snow resulting in at least 6" of coverage at all times.
3. Thermal inefficiencies in the home that allow warmth to heat up the roof deck from the underside.
4. Homeowner lifestyle that results in excessively heated spaces (More heat equals more roof snow melting).
5. Roof pitch: Flatter roof pitches tend to be more affected by problematic ice dams.
6. Eave depth: Smaller eaves tend to be more affected by problematic ice dams than deeper eaves.
7. Age and construction style of home: Older homes tend to be more affected than newer homes.