

Deflating Roof Blisters on Flat Roofs, either BUR or Torch-on.

Most roof blisters will be dry inside with only trapped water vapour. The procedure suggested below is for dry blisters. For wet blisters with moisture inside, the process will require firstly expelling any free moisture, sealing the leak source if obvious, then following the procedure outlined below.

Roof blisters can happen for many reasons on multi-ply roof membranes. Any unbonded void between plies can become a blister over time. Often the edge 1 or 2 inches of felt BUR ply is left unbonded because the mop man tries to avoid over- width mopping. He may not realize that an unbonded edge can become a blister. With torch-on roofing, blisters often form just beside the side-lap edge because voids can form there during installation. A slight void can form where the edge of one sheet overlaps the higher edge of the adjacent sheet.

How a roof blister forms: Blisters can form even where there is no obvious moisture source. Water vapour is everywhere, above and below a roof, depending on weather outside and humidity inside the building. Water vapour molecules can slowly travel through a roof membrane. When the water vapour molecules reach an unbonded area they will start to accumulate as a vapour in that space. Each day when the sun warms the roof this water vapour expands and creates pressure in the void so it expands a bit. This expansion creates more space for vapour accumulation the following night. The next warm day the void expands a bit bigger and so on. This process goes on for many years. This way the void gradually grows to become a blister.

How to deflate a blister: Step 1. Using a sharp steel punch or drill, punch or ream a 3/4" hole through the blister all the way down to the roof deck or insulation layer. Step 2. Seal a good watertight patch over the top side of the hole but leave the bottom side open to the deck. This will allow the vapor pressure inside the blister to escape downwards. The blister will gradually deflate and stay flat. This procedure is quick and easy to perform.

Attempting to cut-open a blister and bond it internally will be difficult to do and it will most likely return again in a few years. So if the roof is not leaking near the blister, deflating it as described above will eliminate the blister permanently.