



HOW TO QC AND PROBE A TPO ROOF



» Purpose

To teach roofers how to properly QC (quality check) and probe TPO welds so the roof is watertight, secure, and ready for inspection and 20 years of service. **We never skip this step**, skipping this is what leads to leaks.

Why This Matters

Probing is the way to confirm welds are strong and sealed. If even a ¼" of seam is open, water will find its way in. A careful QC ensures the roof lasts and protects the home or building, this makes it one of the most important steps.

What Seams to Probe?

We probe ALL seams, whether done by robot or by hand every time.

1 Preparing to Probe

- Probe at the end of each day as a roof goes is best practice along with an entire double check at end of project.
- **Never probe hot seams.**
- Let all welds fully **cool down** before testing.



Prepare the Probe Tool:

- Make sure your probe is not too sharp.
- A slightly dulled probe is best so it won't cut or damage the TPO.
- A crayon is best tool for marking off open welds to be addressed. An extension pole can be connected for long seams.

Lumber crayons are great for making marks on the TPO of spots found

Use an extension pole for large roofs

A lightly dulled point is best for probing TPO

A probe with a very sharp point can damage the roofing material



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Probing the Seams

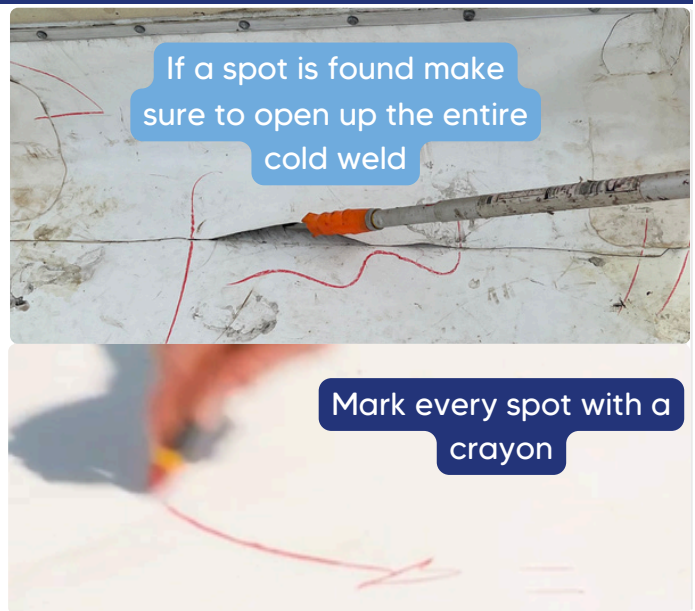
- Push the probe along the weld with **medium, firm pressure**, push horizontally against the seam.
- Do not press too hard or downward—you can create a hole.
- Work back and forth as you go along the seam (running over an area just once can cause you to miss an open weld).



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Open Any Bad Welds

- If your probe slides into a seam, put pressure on the weld using the probe to open the seam up. Not too much pressure or you can create a hole.
- Mark the area so you don't lose it with a crayon.
- **Check EVERY seam. The seam you dont check will be the one that has a problem. Check all details, corners, etc. and take your time.**



Repairing the Seam:

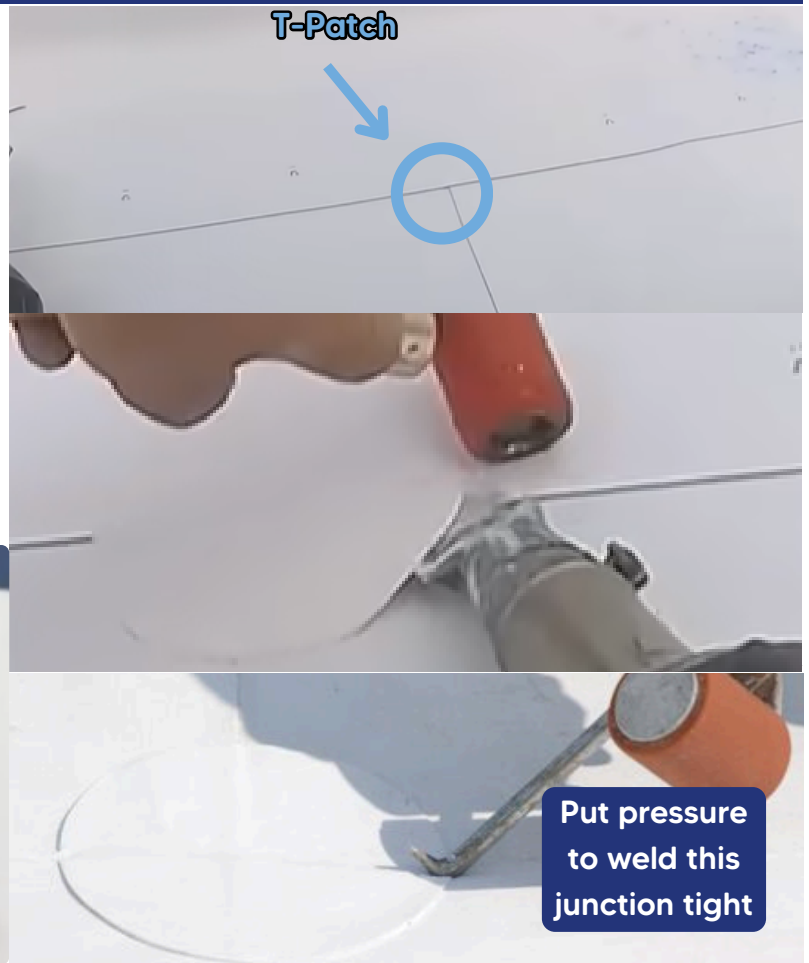
- Clean any spots found, first with soap and water to get dirt off and then with a seam cleaner or Xylene. Let the seam cleaner dry for a little, then weld it shut with a hand welder front to back.
- For bigger gaps or overheated areas, close it in and then install a strip in patch of TPO over the top for additional protection.
- Once the repair cools, probe it as well



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Check for T-Joints

- A “T-Joint” is a place where reinforced TPO seams meet creating a T, water can get in this small location where they cross.
- They must have a T-patch, a “T-Patch” is a small piece of unsupported TPO in a circle or square with rounded corners that stops water from getting into that area.
- Press patches in tight right at the cross.



Inspecting Termination Bars/Clamps

Termination Bar:

- Make sure the bar is tight and straight
- Check that **water block is behind**/polyurethane sealant on top. water block is a special sealant that never hardens behind the termination bar.
- Sealant should be pressed tight to the wall and membrane
- Fasteners in every slot

Pipe Clamps:

- Clamp must be tight around the pipe
- No cracks, gaps, or loose metal
- Sealant should be smooth and sealed all the way around
- Pipe should not move when pushed



Inspect Roof Surface

Check shingle

Tie/In/Angle Change

- Look for any damage on the TPO sheet if you find anything, patch it clean and solid.
- Make sure slope tie-ins are tight and secure, TPO goes 2' up at a slope transition. Install a polyurethane sealant bead where shingles meet TPO at low point
- Install "Cut Edge Sealant" on any cut edges



"Cut Edge" refers to any TPO reinforced edge that was cut and is not the factory edge. "Cut Edge Sealant" is installed here to waterproof this edge.



How to QC and Probe a TPO Roof

Scan Code for Training Video



✓ Final Checks:

- ✓ Medium, firm pressure used, probing back and forth
- ✓ Bad welds marked, cleaned, and repaired
- ✓ T-patches at all T-joints
- ✓ No damage to the field TPO or unsealed tie-ins

✗ What Not to Do

- Don't probe hot seams.
- Don't use a sharp probe.
- Don't press so hard with the probe or you can puncture the roof.
- **Don't skip Probing** or T-patches on T-joints. Taking proper time here is key.