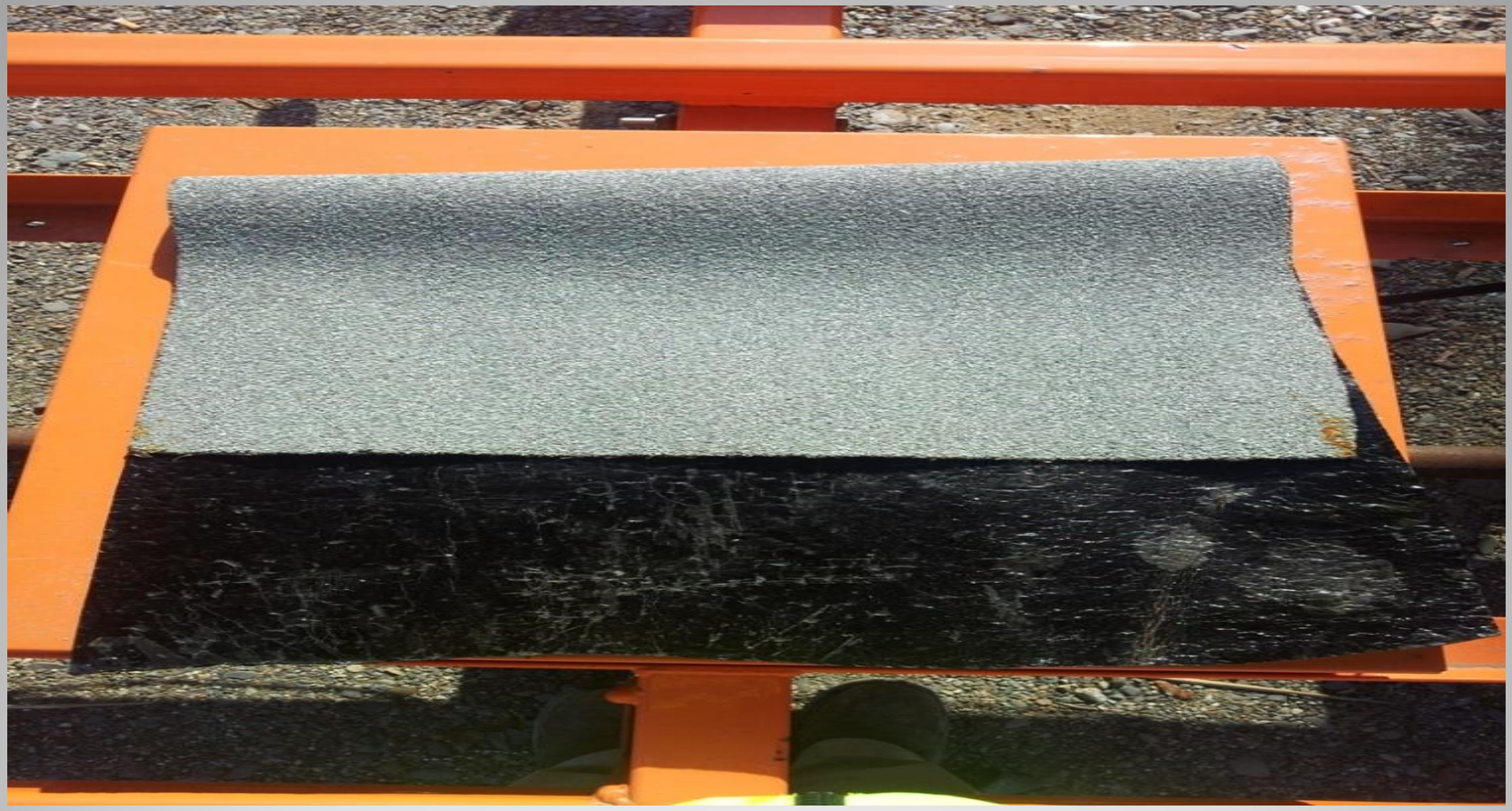
High Performance Membrane

What is it and how does it work??

- High performance membrane is composed of a selected SBS modified bitumen applied to a non-woven polyester reinforcement (Soprema Sopralene flam antirock)
- Sometime manufacturers also use selected glass strands for extra strength (IKO armour bridge)
- All manufacturers uses a grey colored granule surface to protect top side of membrane from abrasion and work traffic
- Eliminator & Firestone are also approved



It looks very similar to ice and water shield or rubber roofing

- Bead blast deck (around drains, joints)
- Check moisture content with moisture meter
- Apply primer
- Apply membrane by machine or hand
- Roll membrane before paving with rubber tire roller to remove and bubbles and assure better adhesion
- Pave at a minimum of 290 F to 320 F per manufacturers recommendation

The process to apply High Performance Membrane

- The reason for the temperature specification is to have the pavement melt into the high performance membrane for a better sealing
- When paving on bridge we cannot use vibratory roller, must us an oscillation roller

High Performance Membrane application continued

Shot blast the deck to remove foreign materials and sharp protrusions

Sand blast by hand areas the machine can’t reach

Check with moisture meter

Standard Specifications

- Standard Specification 508.04 General states temps must be above 40 degrees F and moisture is at or below 6%
- When rapid set patching materials have been used, must be cured a minimum of 72 hours before applying primer
- If deck area is greater than 8073 ft^2 then membrane must be machine applied

Apply primer. Deck must be clean and dry before applying.

Apply primer and allow to dry

Be sure to get all areas, drains, bridge joints, edges etc.

Applying the High Performance Membrane

Machine applied

Changing rolls of Membrane

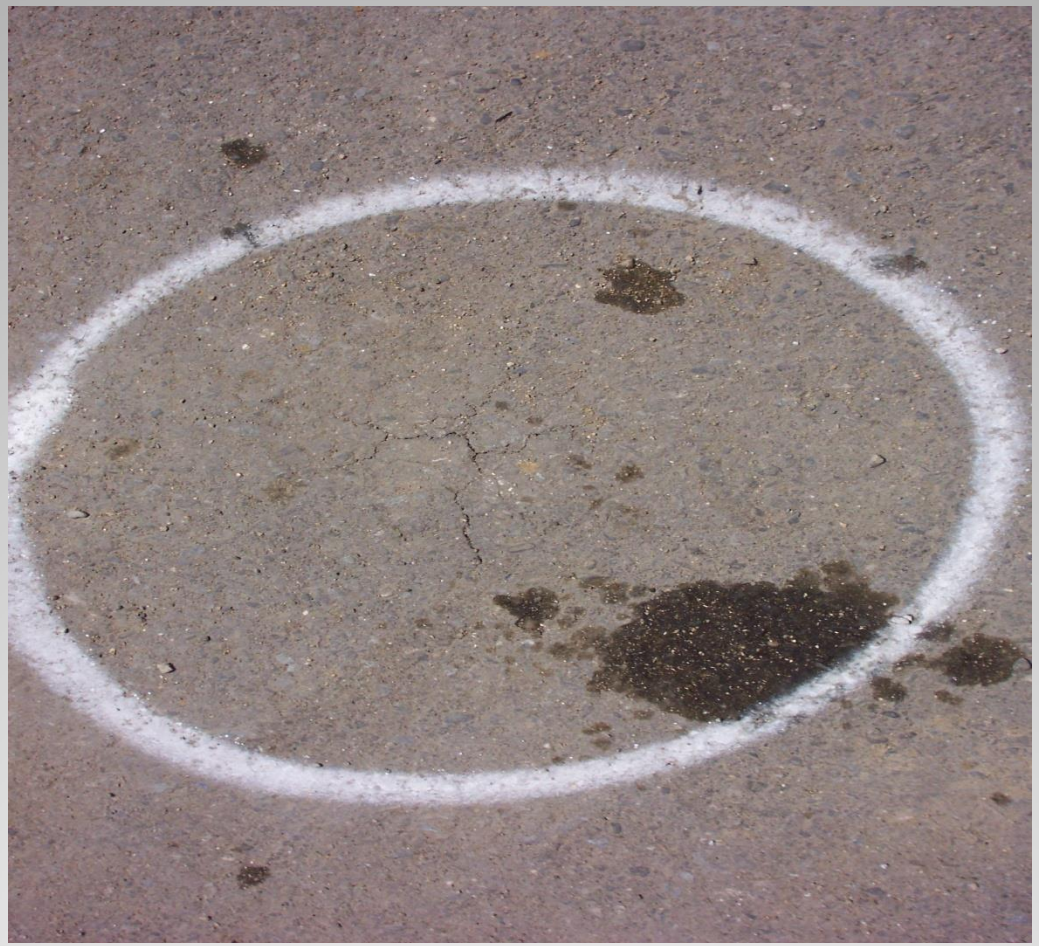
Torch applied at ends of roll and around areas machine can’t go

Torch applied

Notice overlap pattern from low to high

Completed deck

Issues that can arise



Bubble in the membrane showing up after paving

Moisture under membrane in several areas

This is what it looks like after pavement is removed and membrane cut to let out air/steam

Another picture of a bubble that formed while paving

Common issues with high performance membrane on a rehab job

- Surfaced milled to rough usually caused by not enough teeth on milling drum
- Edge along gutter line can’t be done with mill machine. Usually try to leave but contractor should be made to remove because the lip causes an area where membrane can tear and also causes a dam which will cause freeze thaw issues
- Moisture under membrane causes bubbles. They must be popped then a patch that goes at least 6” around all areas of the tear

- You can chain drag membrane like concrete and it will make a distinctive sound where it is not bonded
- Often contractor wants to remove membrane completely with mill machine to save work of scraping off old membrane. This can be an issue because every bit of concrete taken off of deck means there is that much less concrete coverage over the rebar

Things to know

- The primer is very volatile. No smoking should be allowed anywhere near deck while primer being applied. It can and will ignite causing serious issues
- A rep of the membrane manufacturer should be on site during install. Recently the spec has been changed to all allow a member of the install company to be the rep if they attend the training from the manufacturer. This has its own inherent issues