How Hot Does It Get?

PROVEN PRACTICES TO GET THE MOST OUT OF YOUR PATCHBOX

Patching in 13°F in DeWitt, IA

Conclusion

The temperature attained and quality of the patching experience depends largely on factors which the user controls. Our customers find that – by controlling the three factors outlined in this report – they can successfully patch in as cold of weather as they want to be out in.

PatchBox LLC
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How Hot Does It Get?

We get that question a lot. And although it sounds a bit smart-alecky, an appropriate answer is, "How hot can ***you*** get it?"

PatchBox doesn't generate any heat. Not a single BTU. Through innovative insulation and heat transfer design features, our goal is to capture as much free tailpipe heat as possible and transfer it to asphalt.

Customers have documented tailpipe temperatures in excess of 200°F with gas and diesel engines. Our customers' experiences point to three primary factors outlined below that influence patching performance. By taking these factors into account they successfully patch in as cold of weather as they want to be out in.

Factor 1 - Starting Temperature

It takes a ***lot*** of heat to warm a ton of asphalt. So it's best to store cold mix inside. If that's not possible, load the unit and store it inside overnight (with the tarp off) so it can absorb heat from warmer shop air. There's a huge difference between starting a load at 55°F and 15°F. If multiple loads are anticipated during the day, it's a good idea to bring the loader inside with a bucket full of mix to warm for the next load.

Factor 2 – Driving Pattern

Heat coming out the tailpipe is directly proportional to how much the accelerator pedal is depressed. A couple of miles at 35 mph or climbing a hill generates much more heat than idling or stop-and-go driving. Wise customers patch potholes furthest away from the garage first and work back.

A pretty accurate temperature estimate can be gained by running a simple test. Load the truck to 3000 pounds to approximate a loaded PatchBox unit. Perform a theoretical warm-up drive, jump out of the truck and quickly shoot a temperature gun at the tailpipe. That's what will be available to the PatchBox unit under similar driving and ambient temperature conditions.

Factor 3 - Quality of Cold Mix

Let's face it, there are batches of cold mix that won't patch well no matter how hot it gets. Sure, buying "painted rock" lowers the material invoice, but is it worth the cost of poorer patches, rework, and frustrated workers? Using ***fresh*** material designed for your patching temperatures makes a big difference.

Can It Get Too Hot?

It is possible to burn cold mix asphalt. Although we haven't received any reports of customers burning material with their PatchBox unit, theoretically it's possible if one is driving at elevated speeds during hot weather with the insulated tarp in place. Smart year-round cold mix asphalt patchers remove the flex pipe and replace the insulated tarp with our Warm Weather Tarp option when patching in hot weather.

Can I Use PatchBox with Hot Mix Asphalt (HMA)?

While we designed PatchBox for cold mix asphalt, customers also report benefits when using our product with hot mix asphalt (HMA), especially when compared to patching off the back of a truck. PatchBox certainly won't hold HMA at 300°F indefinitely, but it will dramatically reduce the rate of cooling due to the insulated tarp and because heat will continue to be directed to the load during the return drive from the asphalt plant and during subsequent idling while patching.

The photo below was taken by the City of Le Claire, IA Public Works on a 60°F day. It shows a temperature of 257°F as HMA flows onto the PatchCatch Tray, approximately 2.5 hours after picking up 325°F material at a plant located 15-20 minutes away. They reported that they were able to work with the material for roughly four hours, allowing them to do a quality job and even take a normal break as opposed to their prior practice of racing through a project before the HMA became unusable.