

## ROOF AND PAVEMENT CONSULTANTS

# COLD WEATHER ASPHALT PAVING

## Considerations and Best Practices

Cold weather asphalt paving can have a very adverse impact on asphalt pavement performance due to temperature effect on compaction, joints, handwork and overall mat quality.

Make sure contractors follow the best practices outlined in this guide when paving in low-temperature conditions.



**Base Conditions** – Avoid frozen subgrades and base courses.



**Plant Production Temperature** – Increase and maintain at high end of acceptable production range.

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## COLD WEATHER ASPHALT PAVING



**Hauling** – Tarp trucks and avoid delays prior to asphalt placement.

**Lift Thickness** – Maintain minimum and/or increase thickness to retain heat within the hot mix.



**Paving Speed** – Use multiple crews paving in tandem to limit cold paver joints.

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# COLD WEATHER ASPHALT PAVING

**Compaction** – Compact asphalt while adequate hot mix temperature is present. Provide sufficient manpower and compaction equipment (rollers) to allow expedited compaction across the paving width of the mat. Smartphone apps like the MultiCool pavement cooling simulation can provide the information needed to support paving speed and compaction time frames, taking into account specific temperatures, wind and other climatic conditions. Use of warm mix can be another means of extending the compaction window.



**Course depth** – Increasing surface course depth can accommodate cooler paving temperatures, as the greater thickness allows for better heat retention. However, neither thicker asphalt nor warmer temperatures make a major difference if best practices for cold weather paving aren't implemented properly.

Best practices include plant production temperature increases, tarping trucks, trucking/paving productivity in sync (to avoid excess time for mix to cool), and proper installation and rolling/compaction. Following these specifications, close observation, and a warranty can all hold the contractor accountable in making the project a success.

The impact of not having good cold weather paving practices in place can affect future longevity through compromised asphalt mat density, joint density and joint integrity. All can be impacted in ways that may promote premature cracking, surface raveling or deformation. One of the greatest concerns after cold weather paving is the potential for paver joint cracking to occur more readily than typical. Cold weather paving has a large impact on how well paver pass/joints bond to one another, and cracks could be expected to form along these joints by spring. Severe winters can have an impact on any pavement, but it can increase the risk and likelihood when paved in cold temperatures.

**Note: paving contractors will often nullify their warranty through a waiver acknowledging that cold weather paving risks are assumed by the Owner.**

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