

MODIFICATIONS TO STANDARDS

SPECIFICATION & PARA. REQUESTED MODIFICATION & JUSTIFICATION

P-401 PLANT MIX BITUMINOUS PAVEMENTS; ANM Notice C-2, June 19, 2008; Delete the following two paragraphs requiring longitudinal joints to be saw cut:

Paragraph 401-4.12. change first sentence in third paragraph to read:

“Longitudinal and transverse joints which are irregular, damaged, uncompacted, or otherwise defective or whose surface temperature has cooled to less than 185° F shall be cut back (3 to 6-inches) to expose a clean, sound surface for the full depth of the course.”

Paragraph 401-4.12. Delete note.

Justification: See attached.

PLEASE NOTE – This modification is valid only for projects in the State of Wyoming.

DATE

January 23, 2008

SPONSOR

All Wyoming Airports

DATE

January 23, 2008

APPROVED BY (FAA)



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The following are justification for this Modification to Standards:

- The national FAA P-401 specification presents cutting back of cold joints as an option that the engineer may include when considered necessary.
- PG graded asphalt binder materials are better and should produce better joints.
- Past deficiencies in joint construction methods warrant action, but cutting back joints is not the answer. The same paving contractors that did not take the time to build proper tapered joints can now cut and make a prettier joint that still lacks compaction.
- After cutting off the taper, hot asphalt mix is placed to a higher depth to allow for compaction. If the hot placement depth is too high, a lip or ridge remains after rolling. Therefore, crews tend to hold down the placement depth and roll onto the cold surface to match the surfaces. This lack of asphalt material results in less density on the hot side.
- The cut back joint looks smooth, but the compaction on the hot side is lower than the mat density on the cold side. This inconsistency along the cut line will inevitably lead to a full-depth crack. This crack will have a smooth-wall separation that will be more problematic for maintaining long term sealant adhesion. Conversely, the traditional tapered joint constructed with a raked (or bumped) method will add material above the joint area and increase density... even if the roller straddles the joint.
- Tapered joints often have an open-graded appearance and lack density because of segregation by the transverse auger within the paver. Likewise, if the material is raked outward for smoothness before compaction, the result will be an open-graded joint. These bad joints tend to take on water and ravel too soon. The same open-graded result is present on the hot side of cut back joints when the auger segregates the material but cold side segregation is normally cut off.
- The answer to constructing proper joints is industry education. This includes engineers, inspectors, and contractors. This can begin with language included in the specification warning against rollout of lane edges and for construction of "bumped" joints.
- Last, but not least, cutting back the joints represents a waste of construction money. On a typical paving project (3" lift over 8 paving lanes on a 100' wide runway), cutting the cold longitudinal joints back the allowed 6-inches (4" of mat and 2" of taper) represents a loss of approximately 3% of the asphalt pay item(s) plus the cost of cutting and removing the joint material. As an example, the same typical paving project with two lifts on a 10,000'x100' runway would waste approximately 540 tons of asphalt and 32 tons of binder. This material loss plus the cost of cutting and removing the joint material costs approximately \$75,000 that could be put to much better use elsewhere on any project.