

PN 415 – 10/21/2005 - Asphalt Pavement Longitudinal Joint Construction

Replace the requirements of C&MS Section 401.17 with the following.

401.17 Joints. Place cold wedge joints and cold vertical face joints in a continuous manner. Set up joints at the proper height above the adjacent construction to receive maximum compaction. When the edge of a vertical face joint has been significantly rounded by the action of traffic, trim it to a vertical face before placing the adjacent pavement. When a wedge joint has been significantly rounded or damaged by traffic, or has disintegrated, replace the wedge joint. On projects where traffic is allowed to cross the edge of the new pavement lane, complete the longitudinal joint of the adjacent lane or berm within 24 hours.

Place a hot longitudinal joint where required. A hot longitudinal joint may be used in place of any cold joint unless restricted by the plan. Form hot longitudinal joints using spreading equipment meeting 401.12 operating in contiguous lanes, one just ahead of the other. Do not use a wedge joint for a hot longitudinal joint. Maintain the distance between spreading equipment in adjacent lanes such that it does not exceed the distance that a normal size load of mixture will cover. Alternate loads of mixture between the spreading equipment. Do not allow rollers performing the initial rolling operation in one lane closer than 12 inches (0.3 m) to the hot longitudinal joint until the adjacent lane is placed.

Instead of hot joint construction using multiple spreading equipment, the Contractor may use full width construction with a single unit unless restricted by the plan.

For mixes other than 446, compact all cold longitudinal joints on intermediate and surface courses using a three-wheel roller.

For surface courses, form or cut all transverse construction joints to a vertical face.

Unless a hot joint is constructed or full width construction is used, place a wedge joint in surface and intermediate courses where no confinement of the course's first pass at the cold joint exists. Do not place a wedge joint at ramps and other tight areas of slow production as designated by the Engineer. Instead provide a vertical face joint. Do not use a wedge joint for any course thickness less than 1.25 inch (32 mm). Provide a 0.5 to 0.7 inch (12 to 18 mm) vertical face notch at the upper portion of the wedge after compaction. Allow a notch at the lower wedge toe of height equal to the nominal maximum aggregate size of the asphalt concrete mixture. Provide a sloped wedge with a width of no more than 6.0 inches (152mm) and an angle of no more than 10 degrees from horizontal for surface courses up to 1.75 inches (45 mm) lift thickness. Provide a sloped wedge with a width of no more than 10.0 inches (250 mm) and an angle of no more than 15 degrees from horizontal for courses over 1.75 inches (45 mm) lift thickness. The lane width is determined from the upper notch of the wedge. When constructing the wedge

joint maintain the asphalt material head the same as or greater than the head of asphalt material in front of the spreading equipment screed. Remove any loose asphalt material at the lower wedge toe or any material that is not part of the wedge slope face before overlaying. When the adjacent lane top portion of the wedge joint is placed over the bottom portion of the first lane wedge joint use the same equipment required for constructing wedge joints at 0 degrees wedge taper to achieve precompaction of the top portion of the wedge joint.

Construct the wedge joint using equipment meeting the following requirements. The wedge joint device will be attached to the spreading equipment in all wedge joint operations. The wedge joint device will pre-compact, rather than strike off, the asphalt concrete by means of a longitudinal, uniformly decreasing material height of the asphalt concrete forced under the wedge joint device as the spreading equipment moves forward. The angle of pre-compaction thru the device will be 25 to 35 degrees. The length of travel of material under the device will be a minimum of 10 inches (250 mm). Provide additional compaction on the wedge and after the wedge joint device as desired but do not distort the wedge and notch configuration. The wedge joint device will have a variable angle adjustment from 0 degrees (horizontal) to the taper angle necessary to complete the wedge height required as well as creating the required notch. The wedge joint device will be constructed to allow at least the same head of asphalt material in front of the device as is in front of the spreading equipment screed. The wedge joint device will be constructed to not allow any asphalt material to bypass wedge joint precompaction.

Obtain approval of the above wedge joint equipment before use by contacting the Laboratory at least two weeks in advance of use to demonstrate the wedge joint device meets the requirements above. Do not use wedge joint equipment unless it has been approved by the Laboratory and meets the above requirements.

Seal all cold longitudinal construction joints by coating the entire face of the cold joint with a certified PG binder to provide 100% coverage of the joint and overlap the joint edges by at least 0.5 inch (12.5mm). Seal all cold transverse construction joints with a certified PG binder to provide 100% coverage of the joint or with an asphalt material applied at a rate of 0.25 gallon per square yard (1 L/m²).

DESIGNER NOTE: This proposal note is intended to evaluate the effectiveness of a wedge joint in asphalt construction. It can be used with either 446 or 448 applications. Only use this proposal note with the approval of the Asphalt Engineer of the Office of Materials Management.