

Guidelines for Proper Joint/ Obstacle Construction

Session 10



Placing Mixture

- ▶ Production at the facility, delivery to the job site, laydown by the paver, and compaction by the rollers must all be in tune to produce the highest quality pavement
- ▶ Understanding the variables that can affect each rate is the key to adjusting the others when changes happen



Placing Mixture

- ▶ Before you began paving, calculate an ideal paver speed.
- ▶ This speed should be checked and maintained.
- ▶ Remember, balance of all the production rates is the key to quality pavement.



Gradations & Thicknesses

460.3.2 Thickness

(1) Provide the plan thickness for lower and upper layers limited as follows:

NOMINAL SIZE	MINIMUM LAYER THICKNESS	MAXIMUM LOWER LAYER THICKNESS	MAXIMUM UPPER LAYER THICKNESS	MAXIMUM SINGLE LAYER THICKNESS ⁽²⁾
	In Inches	In Inches	In Inches	In Inches
37.5 mm	3.5	5	4.5	6
25.0 mm	3.25	5	4	6
19.0 mm	2.25	4	3	5
12.5 mm ⁽¹⁾	1.75	3 ⁽²⁾	2.5	4
9.5 mm ⁽¹⁾	1.5	3 ⁽²⁾	2	3

⁽¹⁾ SMA mixtures use nominal size 12.5 mm or 9.5 mm.

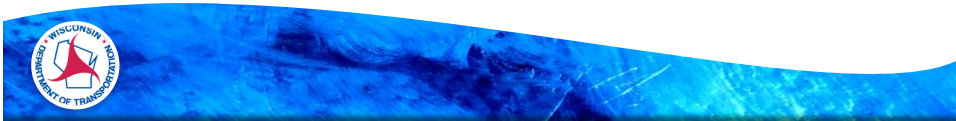
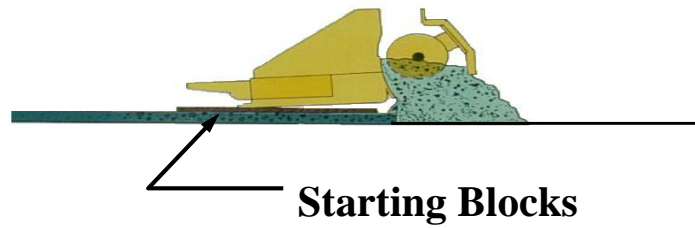
⁽²⁾ SMA mixtures with nominal sizes of 12.5 mm and 9.5 mm have no maximum lower layer thickness specified.

⁽³⁾ For use on cross-overs and shoulders.

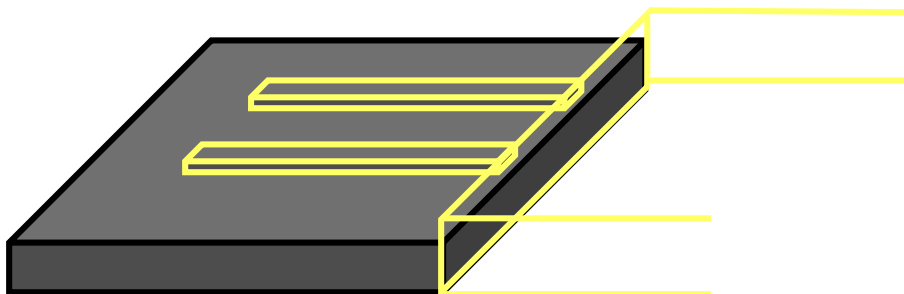


Lower Layer Pavement: 19.0 mm
Upper Layer Pavement: 12.5 mm

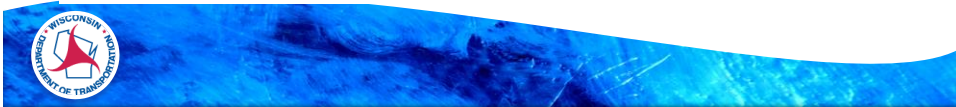
Placing Mixture



Placing Mixture



A good rule of thumb is to raise the screed 1/4" to 1/2" more for each 1" of compacted thickness



Placing Mixture

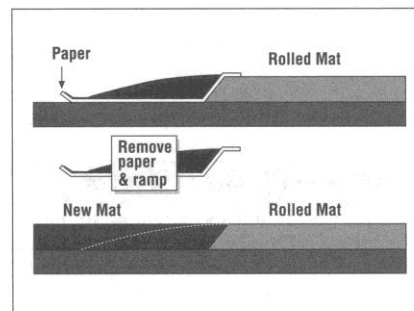
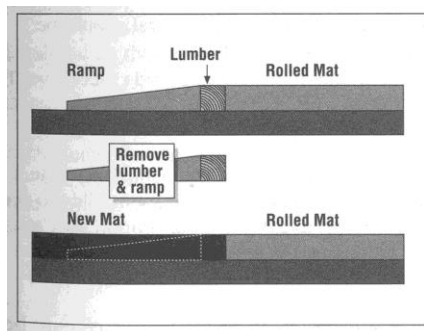
Transverse Joints

- ▶ A transverse joint must be constructed across the pavement whenever paving is being suspended (for the day, at the end of the job).
- ▶ When ending paving (for the day or the job), run the paver in normal fashion right up to where the transverse joint is being constructed.
- ▶ Do not run the paver dry right at the joint. Keep a full head of material in front of the screed to the end.



Placing Mixture

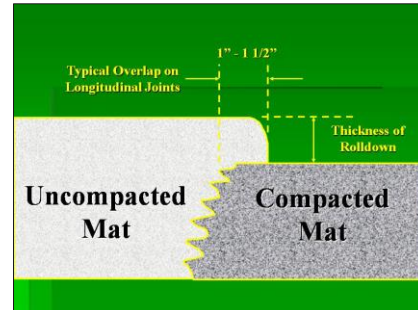
Transverse Joints



Placing Mixture

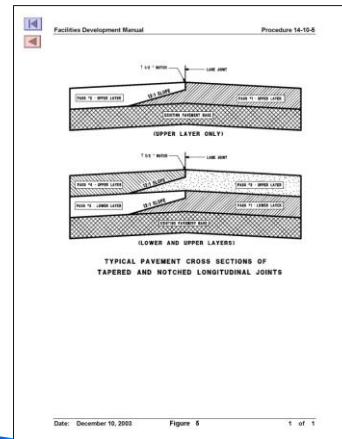
Longitudinal Joints

- ▶ The key to good longitudinal joint construction is the proper overlap of mix between the new and old mat.
- ▶ The proper overlap provides just enough material on top of the joint to allow proper compaction without having extra mix, which would have to be removed by a luter.



Placing Mixture

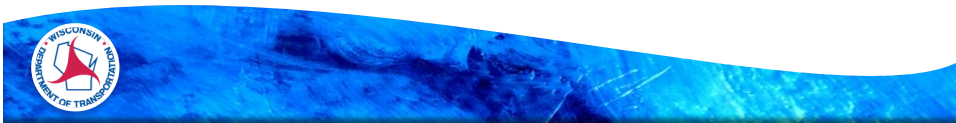
Longitudinal Joint



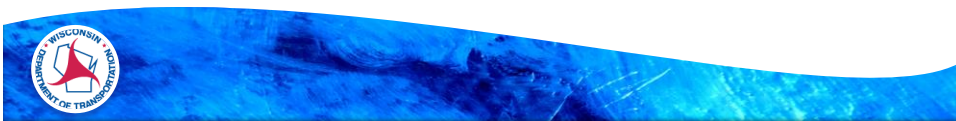
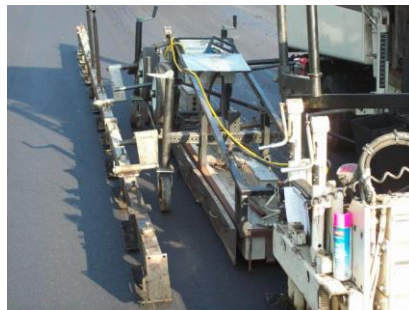
Centerline Joint Construction

[SS450.3.2.8 & FDM 14-10-5]

- (3) Construct notched wedge longitudinal joints for all mainline paving if the pavement thickness conforms to the minimums specified in 460.3.2, unless the engineer directs or allows an alternate joint. Taper each layer at a slope no greater than 12:1. Extend the taper beyond the normal lane width, or as the engineer directs. Ensure that tapers for all layers directly overlap and slope in the same direction.



Centerline Joint Pictures



Milling and Removing Temporary Joint, Item SPV.0105.XX.**A Description**

This special provision describes the milling and removing of the upper layer HMA wedge joint and any other temporary longitudinal or transverse joints, including sweeping and cleaning of the affected area prior to the abutting pavement placement.

B (Vacant)**C Construction**

Immediately prior to the placement of the adjoining lane, mill any temporary wedge joint to a true line with a face perpendicular to the surface of the existing asphaltic surface pavement.

Immediately prior to continuation of paving operations, mill any temporary transverse joint to a true line with a face perpendicular to the surface of the existing asphaltic surface pavement.

The contractor becomes the owner of the removed asphaltic pavement and is responsible for the disposal as specified for disposing of materials under subsection 204.3.1.3 of the standard specifications.

D Measurement

The department will measure Milling and Removing Temporary Joint as a single lump sum unit for all wedge joints acceptably removed.

E Payment

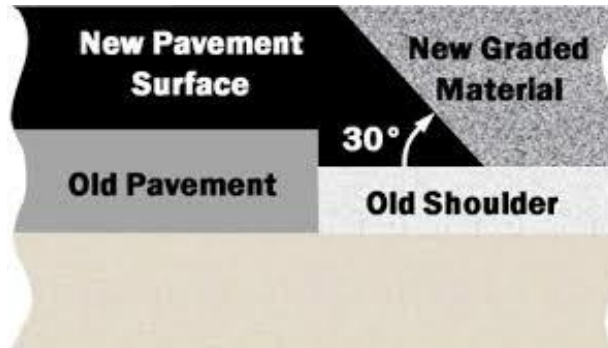
The department will pay for measured quantities at the contract unit price under the following bid item:

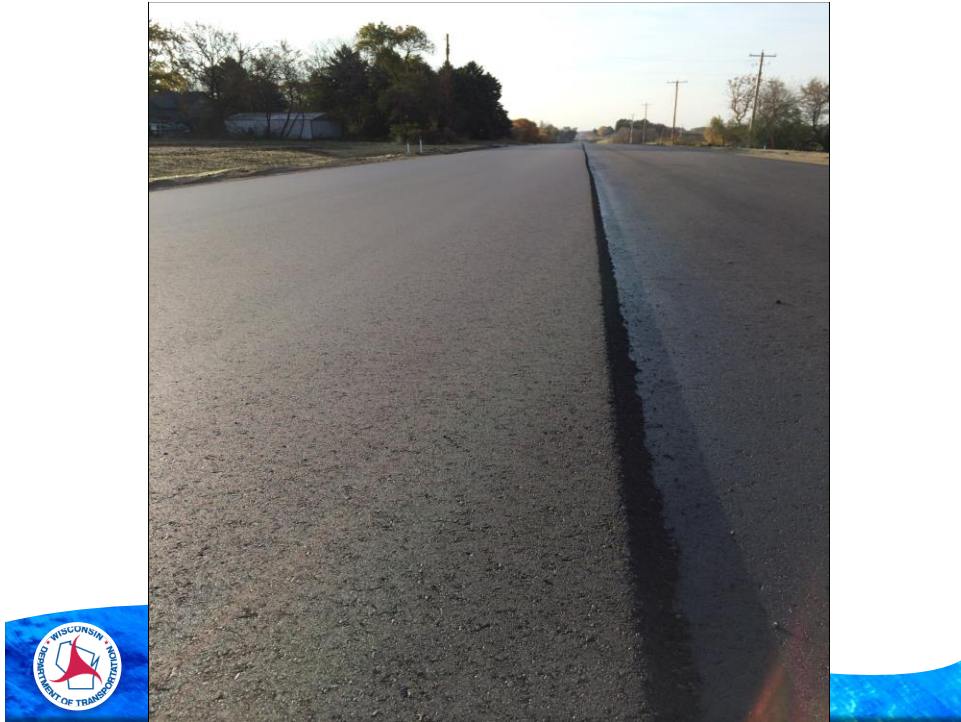
ITEM NUMBER	DESCRIPTION	UNIT
SPV.0105.XX	Milling and Removing Temporary Joint	LS

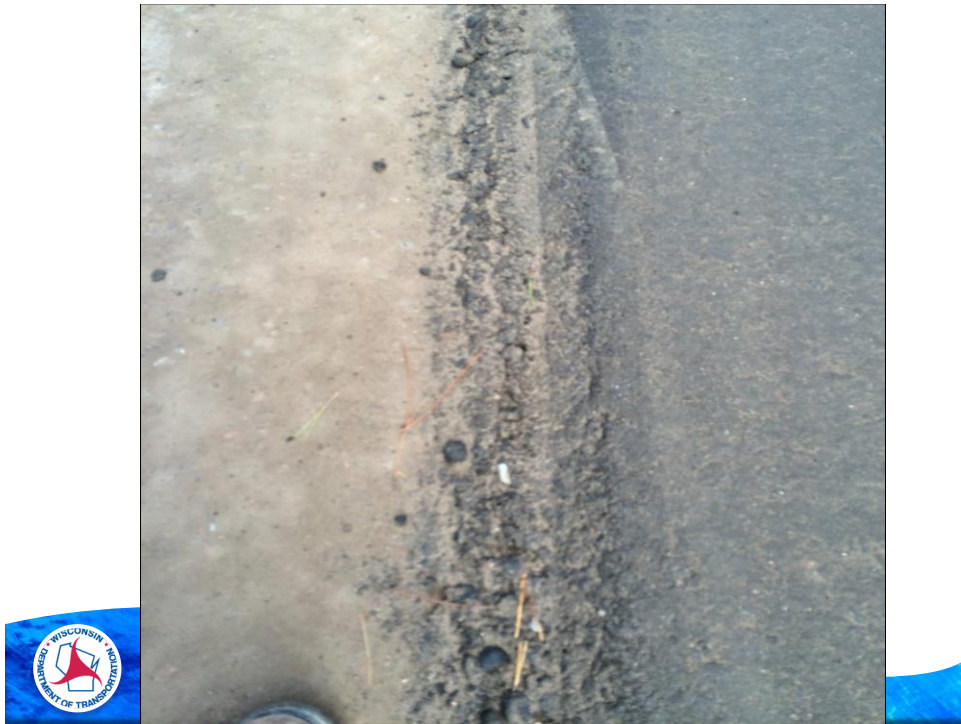
Payment is full compensation for milling, removing, sweeping, cleaning, and disposing of materials; and for furnishing all labor, tools, equipment, materials, and incidentals necessary to complete the contract work.



Extruded Joint (Safety Edge)



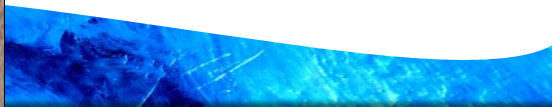






Joint Compaction

- ▶ Weakest link
- ▶ Allow water and air penetration
 - Stripping
 - Delaminations
 - Hardening/Cracking
- ▶ Avoid if possible!
- ▶ Many approaches
- ▶ Attention to detail



Placing Mixture

Handwork

- ▶ Tying into the existing pavement requires skill to ensure a smooth transition
- ▶ There will almost always be some handwork necessary to complete the joint
- ▶ When handworking mix:
 - “leave the mix high” to allow compaction
 - Handworked mix is looser than paver-laid mix
 - Leave high about 1/4” to 1/2” per 1” of mix laid
- ▶ Compact this immediately
 - Handworking (and the time to do it) results in a cooler mix

