Longitudinal Joint Construction

Building a Sound Longitudinal Joint
Steps in Making Good Longitudinal Joints

1- Control Segregation at the Outside Edges of the Mat
2- Steer a Straight Line
3- Compact Unconfined Edge
4- Maintain Correct Overlap
5- Place the Proper Depth for Roll Down
6- Do Not Lute the Joint
7- Compact the Joint for Density
Control Segregation at the Outside Edges of the Mat

Minimize Segregation at the Outside Edges of the Mat

Properly Adjust the Material Sensors

Use Correct Length of Auger Tunnels
Auger

Uniform Head of Material Across the Entire Screed

Carry Material Within 12 – 18-inches of the End Gate
Carrying the mix out this far is unacceptable
Auger not extended to within 12 to 18-inches of the end gate.

The result - SEGREGATION at joint
2 Steer a Straight Line

Maintain Proper Overlap
A Must for Proper Joint Construction
First Pass Must Be Straight!

Unanimous that a string-line should be used, to assure first pass is straight, to get a consistent 1” overlap with 2\textsuperscript{nd} pass.
Compacting Unsupported Edge using Steel Wheel Roller

Option 1
Hang over 6"

Option 2
1st Pass 3”-6” inside
2nd Pass hang over 3”-6”
b. **Vertical Longitudinal Joint.** When opening to traffic, plan the work to resurface adjacent lanes to within one load of the same ending point at the completion of paving operations each day. Construct a vertical joint to conform to the pavement cross section.

When compacting an unsupported (unconfined) edge of the mat, keep the roller from 3 inches to 6 inches inside the unsupported edge on the first pass; ensure the roller overhangs the unsupported edge by 3 inches to 6 inches on the second pass.

When placing HMA in a lane adjoining a previously placed lane, place the mixture so that the strike off shoe will produce an edge that is adjacent to or minimally overlaps the adjoining course. Compact the longitudinal joint by rolling from the hot side, keeping the edge of the roller approximately 6 inches to 8 inches inside the cold joint for the first pass. For the second pass of the roller, compact the joint from the hot side while overlapping the cold side by 6 inches to 8 inches.
Compaction of Unsupported Edge using Pneumatic Tire Roller

Recommended

Not Recommended

6”

Pushes out

Recommended

Not Recommended

NAPA
National Asphalt Pavement Association
Maintain Proper Overlap and Matching Depth

Proper Roll Down – Start With 25% of the Depth

1/2 - 1 1/2” (13-35mm) Overlap

1st Pass (Cold)

2nd Pass (Hot)

Minimum Overlap for Compaction is 1/2 Inch (13mm)

Always Check Joint Roll Down Behind the First Roller
If Your Joint is Set Up Correctly, Little or No Handwork Should be Required
Maintain Proper Overlap and Matching Depth

Be Careful not to leave too high
Do Not Lute Joint

- Moves material away from joint
- Results in low-density zone at joint
Compacting Longitudinal Joints

6” – 8” Offset
Material Flow at Joint

Pinching the Joint
Material Flows Away From the Confined Edge & Less Density is Achieved

Material Flows Toward Confined Edge & Builds Greater Density
Compacting Your Longitudinal Joints

First Pass

- Roller First Pass
- 6 to 8 Inches
- Creates a Confined Edge & Raised Area

Second Pass

- Roller First Pass
- Second Pass Use, Vibratory to Build Density
b. **Vertical Longitudinal Joint.** When opening to traffic, plan the work to resurface adjacent lanes to within one load of the same ending point at the completion of paving operations each day. Construct a vertical joint to conform to the pavement cross section.

When compacting an unsupported (unconfined) edge of the mat, keep the roller from 3 inches to 6 inches inside the unsupported edge on the first pass; ensure the roller overhangs the unsupported edge by 3 inches to 6 inches on the second pass.

When placing HMA in a lane adjoining a previously placed lane, place the mixture so that the strike off shoe will produce an edge that is adjacent to or minimally overlaps the adjoining course. Compact the longitudinal joint by rolling from the hot side, keeping the edge of the roller approximately 6 inches to 8 inches inside the cold joint for the first pass. For the second pass of the roller, compact the joint from the hot side while overlapping the cold side by 6 inches to 8 inches.
Temperature is the Key to Getting Density
Steps in Making Good Longitudinal Joints

1- Control Segregation at the Outside Edges of the Mat
2- Steer a Straight Line
3- Compact Unconfined Edge
4- Maintain Correct Overlap
5- Place the Proper Depth for Roll Down
6- Do Not Lute the Joint
7- Compact the Joint for Density
Questions ??

http://store.asphaltpavement.org/index.php?productID=674