



# **PAPA Regional Technical Meeting**

## Allentown

March 21, 2019  
District 5

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# 2018 Bituminous Testing

## Testing:

- 258 Lots- Mixture Acceptance by box sample
- 198 Lots – Density Acceptance by pavement core

## Failure:

- 4 AC failures and 44 reduced pay
- 1 #200 failure and 27 reduced pay
- 0 PCS failures and 46 reduced pay
- 1 Density failure and 14 reduced pay

## 2018 Longitudinal Joint Density Performance

	<b>Longitudinal Joint Density Summary</b>		
Year	2016	2017	2018
Lots Tested	4	16	27
% Density Range	86.2%-91.8%	87.2%-96.5%	87%-96.8%
% Average Density	89%	92.1%	91.9%
Incentive Lots			
Zero Lots			
Disincentive Lots			
Total \$ for Incentive Lots	\$450	\$26,950	\$91,350
Total \$ for Disincentive Lots	\$-22,000	\$-22,000	0
Delta (Incentive - Disincentive)	\$-21,550	\$4,950	\$91,350

REF: Section 405 Evaluation of Bituminous Pavement Longitudinal Joint Density and Payment of Incentive/Disincentive



# ➤ 2018 Longitudinal Joint Density Performance

- Longitudinal Joint Type
  - Which joint type is being utilized most?
    - Vertical
    - Tapered is the most utilized.
  - Which joint type is producing better density?  
Vertical due to same day paving (hot joints)
  - Are you having any longitudinal joint issues?  
Yes, loss of compaction due to roller bridging and tapered joints unraveling premature. High volume\Interstate.

# 2018 Percent Within Tolerance (PWT)

	<b>District 5 - PWT SUMMARY</b>		
Year	2016	2017	2018
Number of PWT Projects Let	12	34	37
Number HOLA	2	4	5
Number LTS	10	30	32
Average Pay Factors (%)			
Asphalt Content	102.79	100.51	99.11
Primary Control Sieve	99.26	98.97	97.31
#200 Sieve	98.21	97.22	100.24
Density (Cores)	102.10	103.38	102.76
Average Density	94.0	94.4	94.8
Average Overall Lot Pay Factor (%)	1.01	1.01	1.01
Incentive (\$)	\$88,680.57	\$241,358.58	\$316,870.16
Disincentive (\$)	-\$20,140.30	-\$92,249.71	-\$80,256.53

## 2019 Planned Construction Projects

- List Projects With > 1000 tons of WMA Paving
  - ECMS 110081, Let Date 4/11/19, SR 4028, Berks, 10,800 Tons
  - ECMS 96442, Let Date 4/11/19, SR 209, Monroe, 12,200 Tons
  - ECMS 12319, Let Date 4/11/19 SR 22, Northampton, 20,100 Tons
  - ECMS 110103, Let Date 4/11/19 SR 309, Schuylkill, 13,050 Tons
  - ECMS 83088, Let Date 6/6/19 SR 209, Carbon, Design
  - ECMS 102873, Let Date 6/6/19 SR 987, Lehigh, Design
  - ECMS 111979, Let Date 6/6/19 SR 314, Monroe, Design

## 2019 Planned Construction Projects

- List Projects With > 1000 tons of WMA Paving
  - ECMS 102311 , Let Date 7/11/19, SR 100, Lehigh, Design
  - ECMS 79554, Let Date 7/11/19, SR 222, Lehigh, Design
  - ECMS 92414, Let Date 7/11/19 SR 222, Berks, Design
  - ECMS 110010, Let Date 9/12/19 SR 3422, Berks, Design
  - ECMS 10466, Let Date 12/3/18 SR 78, Berks, 108,450 Tons
  - ECMS 57840, Let date 1/22/19, SR 183, Berks, 3,900 Tons
  - ECMS 101689, Let Date 12/3/18, SR 23, Berks, 10,000 Tons
  - ECMS 107578, Let Date 12/31/18, SR 0, Schuylkill, 7,800 Tons

## 2019 Maintenance WMA Tons (Estimated)

County	9.5 mm	12.5 mm	19.0 mm	19.0 mm LVR	25.0 mm	37.5 mm
5-1						
5-2						
5-3	35,410			12,816		
5-4						
5-5						
5-6						
TOTAL TONS						

LVR = Low Volume Roads



## District Innovations & Best Practices

- Have you tried a 6.33 mm Thin Lift project yet?
  - No, as of now there are no projects designed with 6.33mm for 2019.
- Do you utilize SMA on all Interstate Highways?
  - Yes, We feel the design criteria will give us longer pavement life.
- Are you still having tack coat issues? What tack coat type do you predominantly specify?
  - No, mostly NTT/CNTT.

## District Innovations & Best Practices

- Have your maintenance forces completed a 19.0 mm for Low Volume Roads mix project yet?  
No. In 2019 there are tentatively 14 projects scheduled. 8 going out for contract and 6 by Department Force.
- Have you bid or completed a LLAP Project?  
No
- Have you bid and/or completed any crack and seat projects/asphalt structural overlay in the past few years?  
SR 33/209 Monroe County completed in 2011, SR 80 in Carbon County is in construction. SR 443 project in Carbon County is in design.

# District Innovations & Best Practices

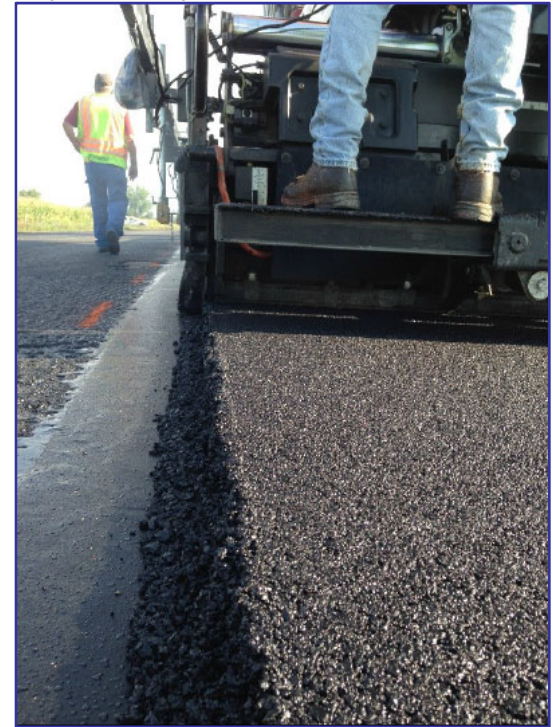
## *Longitudinal Joint Sealant*

- Product is known as J-Band, or Void Reducing Asphalt Membrane (VRAM)
- District 5-0 Pilot Projects proposed for Interstates 81 and 380
- Product claims to:
  - Improve the life of the joint
  - Stabilize the unconfined edge of the pavement
  - Reduce air voids in the mix and eliminate permeability
  - Save \$2 in deferred maintenance for every dollar spent



### Application

- Applied with a distributor truck under the location of the longitudinal joint of the wearing surface overlay.
- Material cures in 30 min, may be driven on and is non-tracking.
- Sealant migrates (50-75%) upward into the new asphalt layer when wearing course is placed



# District Innovations & Best Practices

## Longitudinal Joint Sealant Pilot Projects

SR 81-24M Schuylkill County

2 miles in centerline joint Northbound

SR 380-WD2 Monroe County

1 mile in centerline joint Northbound

\*Both projects had sealant placed between 19mm binder and SMA.

# District Innovations & Best Practices

## Longitudinal Joint Sealant

- Sealant placed at 300° not to exceed 330°
- Can be driven on at 130° within 30 minutes
- Tacked after placement without covering sealant
- Placed by calibrated distributor
- Area should be thoroughly cleaned before placement
- 40° minimum ambient and surface temperature
- Placement should be within +/-1.5" of specified width
- Application rate checked using weight per foot

# District Innovations & Best Practices

Overlay Thickness <sup>2/</sup> , in (mm)	LJS Width, "W" in (mm)	lb / lineal ft (kg/lineal m)
<b>Non-SMA</b>		
1 (25)	18 (457)	1.15 (1.71)
1 ¼ (32)	18 (457)	1.31 (1.95)
1 ½ (37.5)	18 (457)	1.47 (2.19)
1 ¾ (44)	18 (457)	1.63 (2.43)
2 (50)	18 (457)	1.80 (2.68)
<b>SMA</b>		
1 ½ (37.5)	12 (305)	0.83 (1.24)
1 ¾ (44)	12 (305)	0.92 (1.37)
2 (50)	12 (305)	1.00 (1.49)

≈ 1 gal/yd<sup>2</sup>

# District Innovations & Best Practices



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# District Innovations & Best Practices



## District Innovations & Best Practices



# District Innovations & Best Practices

Links to videos if your interested in viewing application.

- <https://www.youtube.com/watch?v=WKxdCgODTTk>
- [J-Band Void Reducing Asphalt Membrane - YouTube](#)
- <https://www.youtube.com/watch?v=v8zIMY9thu8>
- [Illinois DOT Longitudinal Joint Study 2012 - YouTube](#)

# Questions/Comments???



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