



# 2022 SPECIFICATION CHANGES

## 2022 VDOT/VAA ASPHALT REGIONAL SEMINAR

| CO Asphalt Program, Sungho Kim, Ph.D., P.E.

# VTM 22: Daily Gmm for Density Calculation

- ❑ **VTM 22 states to use Daily Gmm for measuring core density.**
  - ✓ Control strip (previously average of five values)
  - ✓ Method A (stays average of daily results)
  - ✓ SMA (stays average of Daily results)
  
- ✓ No change in specification, only in VTM 22

# SS315: 4.75mm Mix 290° min Placement Temp

- ❑ Minimum Placement Temperature of SM-4.75 mix of 290°
- ❑ Includes Warm Mix

## Old Placement Temp Requirements

PG Binder/Mix Designation	Percentage of Reclaimed Asphalt Pavement (RAP) Added to Mix	Minimum Base Temperature	Minimum Placement Temperature
PG 64S-22 (A)	<=25%	40° F/50° F <sup>1,2</sup>	250° F/270° F <sup>1,2</sup>
PG 64S-22 (A)	>25%	50° F <sup>2</sup>	270° F <sup>2</sup>
PG 64H-22 (D)	<=30%	50° F <sup>2</sup>	270° F <sup>2</sup>
PG 64E-22 (E)	<=15%	50° F <sup>2</sup>	290° F <sup>2</sup>
PG 64S-22 (S)	<=30%	50° F <sup>2</sup>	290° F <sup>2</sup>

# 2022 BMD PILOT SPECIFICATION

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# PM9S-F22 BMD Pilot Specification Highlights

- **BMD P+VO mix for all SM-9.5/12.5 A and D mixes**
  - Superpave gradation bands (wider than existing requirements)
  - Design VTM between 3 to 4.5% VTM.
  - Meet CT, Cantabro, Rutting BMD test requirements (and volumetrics)
- **Production Testing Frequency**
  - Contractor testing every 2000 tons (CT and Cantabro)
  - VDOT testing every 4000 tons (pills made by contractor)
  - Rutting testing by VDOT once per project
- **No pay adjustment for production BMD acceptance. If failure, stop production and make corrective actions.**

# 2020 ASPHALT DENSITY DATA

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# Section 315 – Asphalt Placement

## 1. Field compaction requirements:

- All Superpave surfaces 92.5%
- QC by contractor – still requires roller pattern, control strips
- QA / acceptance – now with plugs/cores (similar to SMA) for Method A
- SP315 → **SS315**: apply to Maintenance & Construction projects

## 2. Incentive of up to 5% - meeting minimum density requirements with consistency

- *must be 100% pay, and have 80% of plugs from each sub-lot be 92.5 -96.5 % of TMD to receive bonus*

**Pilot projects only in 2016,**

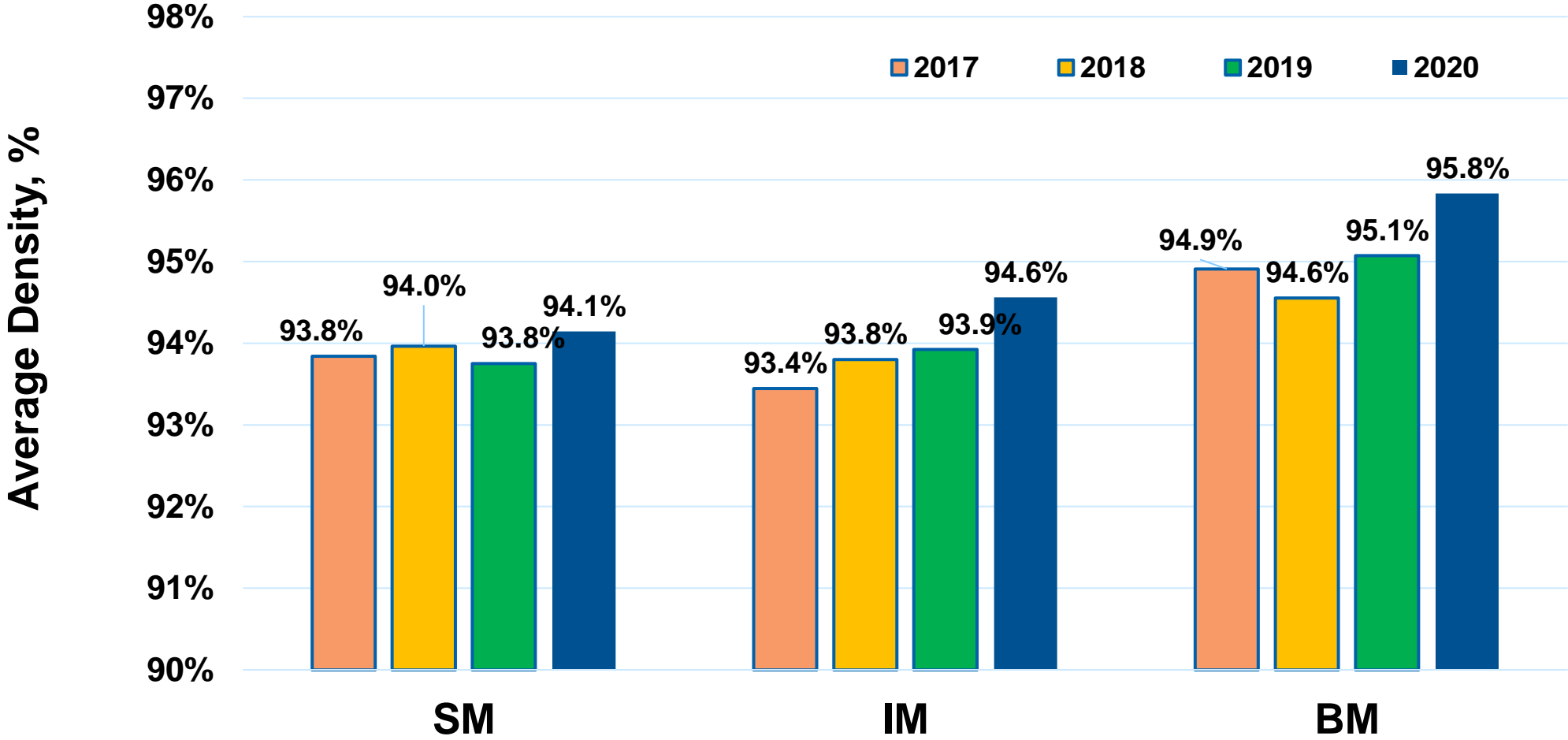
**applied to all maintenance resurfacing beginning in 2017**



# Density Comparison: 2017 ~ 2020 Averages

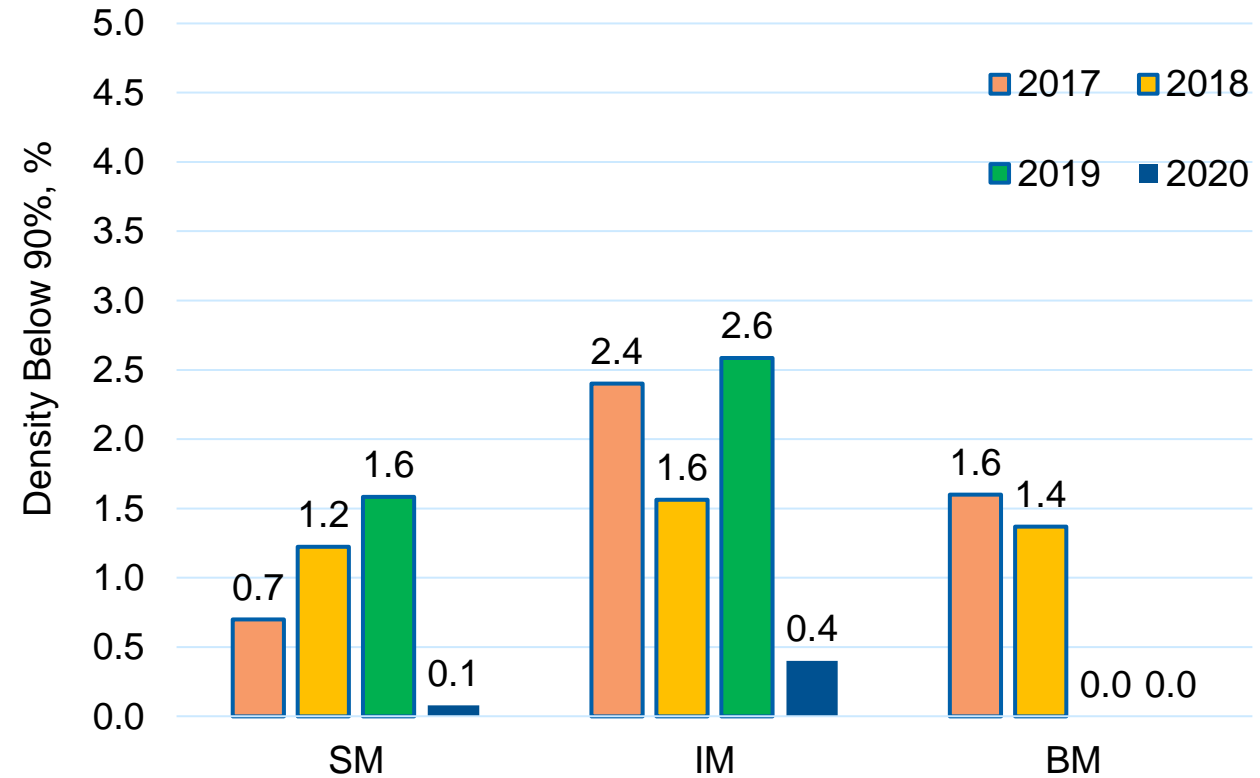
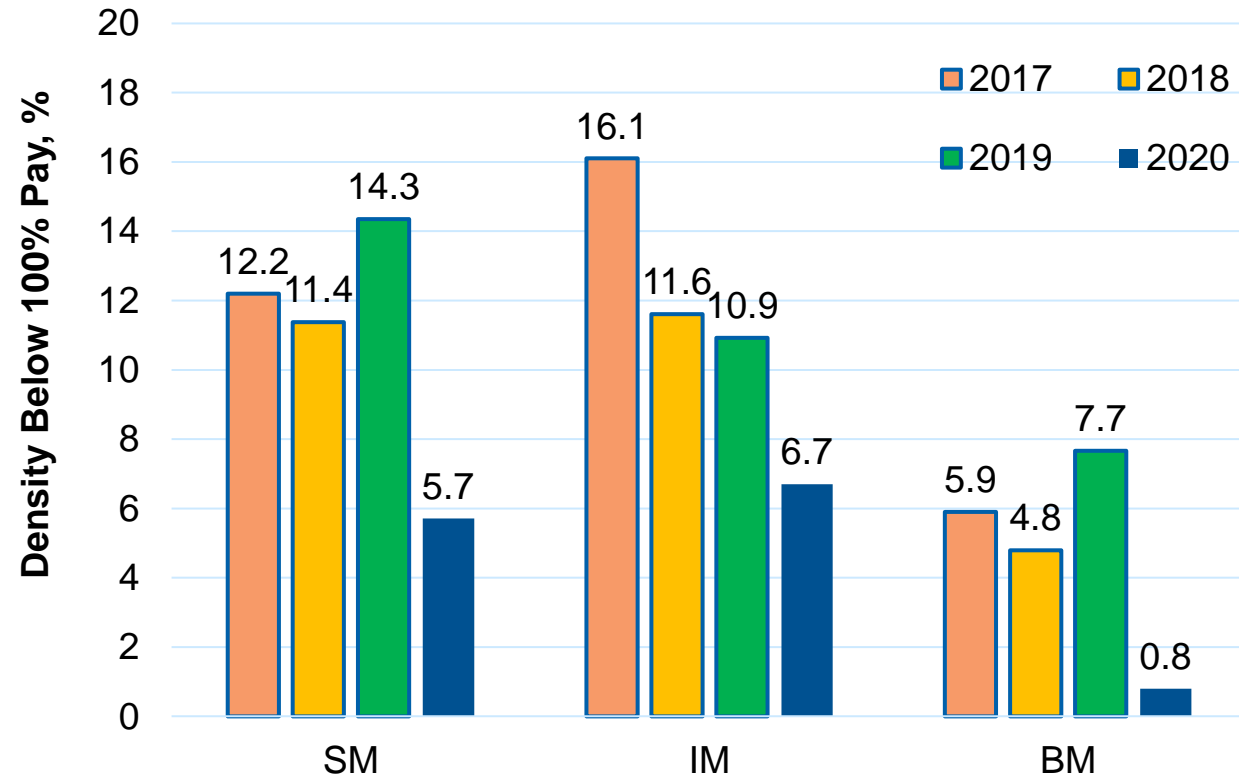
Mix	SM				IM				BM			
	Year	2017	2018	2019	2020	2017	2018	2019	2020	2017	2018	2019
Density, %	93.8	93.9	93.8	94.1	93.4	93.8	93.9	94.6	94.9	94.6	95.1	95.8
S.D.	1.4	2.2	1.5	1.5	1.5	1.5	1.7	1.5	2.1	2.0	2.2	1.5

# Density Comparison: 2017 ~ 2020 Averages

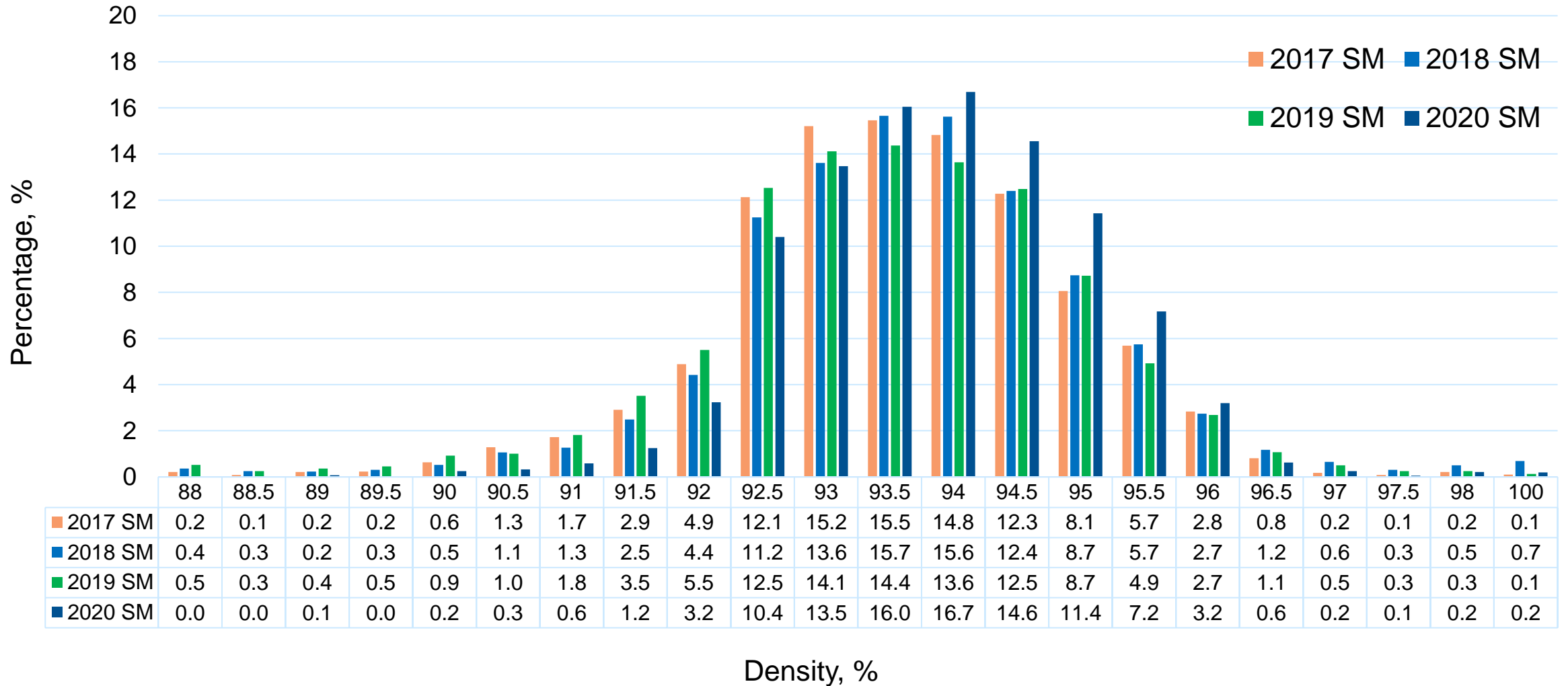


# Density: Below 100% Pay / 90% Density

- 100% Pay: SM = 92.5% / IM, BM = 92.2%



# Density Comparison: 2017 ~ 2020 (SM)



## SUMMARY – Field density incentives

- ❑ The improvement in field density has been very positive – which is expected to impart significant durability improvement.
- ❑ Improvement on IM & BM is noticeable.
- ❑ Less lower density = Less bad placement
- ❑ The industry is very focused on achieving the outcome of better field density that VDOT desires, at a good value of investment by VDOT.

**QUESTIONS?**

