Title: HMA Laydown – Material Problems Matrix	Pennsylvania Asphalt Improvement Network	Document No.: QPM009-05	Effective Date: 20-Dec-06 Rev: 00	Page: 1 of 3
Owner/Approver:	Reviewed By:	Reviewed By:	Reviewed By:	Reviewed By:

1.0 PURPOSE:

This procedure defines common Hot Mix Asphalt (HMA) problems that can occur in the field, and suggests potential causes for each problem to assist in troubleshooting HMA paving operations to ensure a smooth and stable pavement.

2.0 SCOPE:

This procedure applies to all HMA at field laydown sites.

3.0 RESPONSIBILITY:

HMA lay-down site management, supervision and operating personnel.

4.0 EQUIPMENT NEEDED:

Paver, Vibratory Rollers, Pneumatic Rollers and Static Steel Rollers.

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5.0 PROCEDURE:

Material Problems

	CAUSE																																					
PROBLEM	Fluctuating Head of Material	Feeder Screws Overloaded	Finisher Speed Too Fast	Too Much Lead Crown in Screed	Too Little Lead Crown in Screed	Over Correction of Thickness Control Screws	Excessive Play in Screed Mechanical Connection	Screed Riding on Lift Cylinders	Screed Plates Worn Out or Warped	Screed Plates Too Tight	Cold Screed	Moldboard or Strike off Too Low	Running Hopper Empty Between Loads	Feeder Gates Set Incorrectly	Kicker Screws Worn Out or Mounted Incorrectly	Incorrect Nulling of Screed		Screed Extensions Installed Incorrectly	Vibrators Running Too Slow	Grade Control Mounted Incorrectly	Grade Control Hunting (Sensitivity Too High)	Grade Control Wand Bouncing on Reference	Grade Reference Inadequate	Sitting Long Period Between Load	Improper Joint Overlap	Improper Mat Thickness for Max. Agg. Size	Trucks Bumping Finisher	Truck Holding Breaks	Improper Base Preparation	Improper Roller Operation	Reversing or Too Rapidly Turning Rollers	Parking of Roller on Hot Mat	Improper Mix Design (Aggregate)	Improper Mix Design (Asphalt)	Mix Segregation	Moisture in Mix	Variation of Mix Temperature	Cold Mix Temperature
Wavy Surface-Short Waves (Ripples)	*	*	*			0,	*	*		*	<u>.</u>	`	O)			<u> </u>	1	_	<_	*	*	*	*			Ü	_	, ,	X	x	0,	广	X	X		Ĥ	X	(D
Wave Surface-Long Waves	*	*				*		*					*	*						*			*	*			Х	х	х		х	х			х		х	
Tearing of Mat-Full Width			*						*		*																						х	Х	х	х	х	х
Tearing of Mat-Center Streaks					*				*		*			*	*											х												х
Tearing of Mat-Outside Streaks				*					*		*	*		*				*																		\Box	П	х
Mat Texture-No uniform	*	*	*					*	*	*	*		*					*	*					*		Х			х				х	Х	х		х	X
Screed Marks							*																				Х	Х										
Screed Not Responding to Correction			*				*	*		*										*						Х											х	X
Auger Shadows		*																															х	Х	х		П	
Poor Precompaction			*					*											*							х			х								П	х
Poor Longitudinal Joint	*					*		*												*	*	*			*					Х								Х
Poor Transverse Joint		*					*	*		*						*	*													Х								X
Transverse Cracking (Checking)																													X	Х			х	Х		х		Ш
Mat Shoving Roller																													X	Х	X		х	X		х	х	
Bleeding of Fat Spots in Mat																																	х	Х		х		\Box
Roller Marks																													Х	Х	Х						х	
Poor Mix Compaction																													Х	х	х	х	х	х		х	х	X

(*) indicate causes related to paver

Source:US Army Corps of Engineers - Asphalt Paving handbook 2000

(x) indicate other problems to be investigated Red (Large Print) indicates a "Control Issue"

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6.0 Revision Log

Revision	<u>Date</u>	Description	Requested By	Completed By					
00	20-Oct-06	Initial Release	PASIN Core Team	MDL/ FJC					