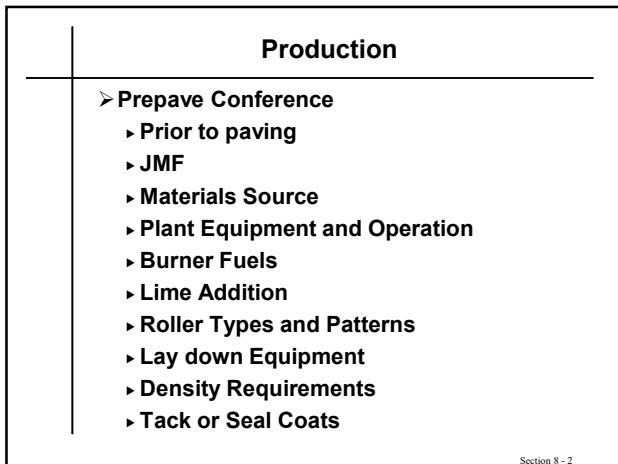
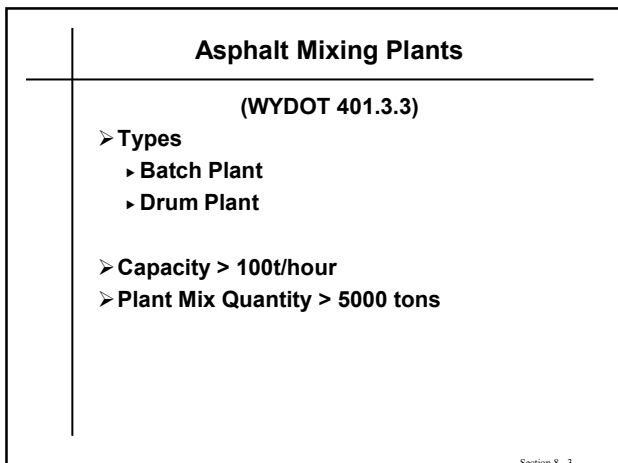


1



2



3

A Drum Mixing Plant



Section 8 - 4

4

Storage Silo



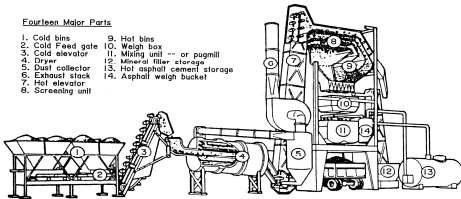
Section 8 - 5

5

A Batch Mixing Plant

Fourteen Major Parts

1. Cold bins
2. Cold Feed gate
3. Cold elevator
4. Dryer
5. Dust collector
6. Exhaust stack
7. Hot elevator
8. Screening unit
9. Hot bins
10. Weigh box
11. Mixing unit -- or pugmill
12. Mineral filler storage
13. Hot asphalt cement storage
14. Asphalt weigh bucket



Section 8 - 6

6

Aggregate Bins



Section 8 - 7

7

Mixing & Compaction Temperatures

Table 401.4.9-1

	Lab Mixing Temp F	Lab Compaction Temp F
PG 58-XX	310	285
PG 64-XX	320	295
PG 70-XX	330	305
PG 76-XX	330	305

Section 8 - 8

8

Asphalt Mix Temperature



Section 8 - 9

9

Weather Limits

➤ Cutoff Dates – May 1 to October 15

➤ In writing, the engineer may extend paving start or finish dates

➤ No placement when conditions prevent proper handling, compacting or finishing

Section 8 - 10

10

Plant Mix without Warm Mix Additives

Atmospheric Temperature Limits

Table 401.4.3-1

Air Temperature Limitations

Compacted Thickness of Surface Course Being Placed	Air Temperature
Compacted thickness < 1 in [25 mm]	60 °F [15 °C]
1 in [25 mm] ≤ compacted thickness < 2 in [50 mm]	50 °F [10 °C]
Compacted thickness ≥ 2 in [50 mm]	40 °F [4 °C]
Leveling	50 °F [10 °C]

Section 4 - 11

11

Plant Mix with Warm Mix Additives

Atmospheric Temperature Limits

Table 401.4.3-2

Air Temperature Limitations Using Warm Mix

Compacted Thickness of Surface Course Being Placed	Air Temperature
Compacted thickness < 1 in [25 mm]	55 - 60 °F [15 °C]
1 in [25 mm] ≤ compacted thickness < 2 in [50 mm]	45 - 50 °F [10 °C]
Compacted thickness ≥ 2 in [50 mm]	35 - 40 °F [4 °C]
Leveling	45 - 50 °F [10 °C]

Section 4 - 12

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Hauling

- Release Agents – Paraffin or non petroleum
- No contamination
- Cover as needed

Section 8 - 13

13


Incorrect Truck-loading Sequence



Section 8 - 14

14

Correct Truck-loading Sequence



Section 8 - 15

15

Rollers

- WYDOT 401.3.6
- Meet requirements of subsection 210.3.6
- Capable of reversing direction without backlash
- Shall not adversely affect pavement surface

Section 8 - 16

16

Asphalt Paver



Section 8 - 17

17

Compaction



Section 8 - 18

18

Burner Fuels

WYDOT 401.2.4

➤ Natural gas

➤ Used Oil

➤ Butane

➤ Propane

➤ Number 1 and Number 2 fuel oil

Mixing

➤ Asphalt within 25°F of aggregate

Section 8 - 19

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Spreading and Finishing

➤ Maximum/Minimum lift

Table 401.4.11-1
Single Lift Thickness

Nominal Maximum Aggregate Size (in [mm])	Lift Thickness (in [mm])	
	Minimum	Maximum
¾ [19]	1 [25]	2 [50]
¾ [13]	1½ [38]	3 [75]
¾ [19]	2 [50]	3 [75]

➤ Longitudinal Joints

➤ Top lift coincides with center line and lane line or edge line

➤ Offset 6"

➤ Not in wheelpaths

➤ 1:3

Section 8 - 20

20

Spreading the Finishing (continued)

➤ Transverse Joints

➤ Taper 1V:6H

➤ Taper removed

➤ Opening to Traffic

Section 8 - 21

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	<h3>Test Strips</h3> <ul style="list-style-type: none"> ➤ Purpose <ul style="list-style-type: none"> ➤ Verify density can be achieved ➤ Verify equipment ➤ Verify procedures ➤ General <ul style="list-style-type: none"> ➤ First 500 t of pavement ➤ Produced at normal rate ➤ Remain in place ➤ No additional Hot Plant Mix until accepted (only leveling can be placed) ➤ Compaction <ul style="list-style-type: none"> ➤ Immediately after placement ➤ Continuous and uniform
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Section 8 - 22

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	<h3>Test Strips (continued)</h3> <ul style="list-style-type: none"> ➤ Sampling and Testing <ul style="list-style-type: none"> ➤ 7 samples from last 300 t ➤ If correlation is being done 2 samples per location ➤ Random locations – WYDOT selected, contractor core ➤ No sample <1 ft for edge ➤ Densities by T 230 (Wyoming modified) ➤ Acceptance <ul style="list-style-type: none"> ➤ If P.F. ≥ 1.00 – Accept Test Strip ➤ If P.F. < 0.50 – Reject Test Strip ➤ If P.F. ≥ 0.50 but <1.00 – May be left in place
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Section 8 - 23

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	<h3>Test Strips (continued)</h3> <ul style="list-style-type: none"> ➤ Other Considerations <ul style="list-style-type: none"> ➤ Additional Strips – Contractor Pay ➤ JMF Changes – New Test Strip ➤ Contractor Request – Contractor Pay ➤ Materials Program Request – State Pay ➤ Results - < 24 hours ➤ Payment – Lump Sum ➤ Payment for materials – based on P.F. evaluation
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Section 8 - 24

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Compaction

➤ Rolling

▶ Immediately after placement

▶ Continuous till density achieved

▶ Sufficient rollers

Section 8 - 25

25

Compaction (continued)

➤ Sampling

▶ Seven test/lot on QC/QA projects

▶ Lot 1500 t, maximum

▶ Sublot – one-seventh of lot

▶ Random locations

▶ No test < 1 ft for edge

▶ AASHTO T 230 (Wyoming Modified) for acceptance

▶ Nuclear density gauge – if calibrated, use for quality control only

Section 8 - 26

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PMWC

➤ JMF

▶ Passing 1/2"100%

▶ Passing 3/8"97-100%

▶ Passing #4± 5%

▶ Passing #8± 5%

▶ Passing #200± 2.0%

▶ Mix Temperature JMF Temp. ± 20°F

➤ Placing and Compaction

▶ 3 passes steel wheel in static mode

▶ No density requirements

▶ Cutoff dates – June 1 to September 15

Section 8 - 27

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