

Guidelines for Local Agency Use of ODOT's New HMA Specifications



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ODOT Asphalt Items

- ④ 441 Asphalt Concrete Surface Course
- ④ 441 Asphalt Concrete Intermediate Course
- ④ 442 Asphalt Concrete Surface Course
- ④ 442 Asphalt Concrete Intermediate Course
- ④ 301 Asphalt Concrete Base
- ④ 302 Asphalt Concrete Base



ODOT Asphalt Items

- ④ 441 Asphalt Concrete Surface Course
- ④ 441 Asphalt Concrete Intermediate Course
- ④ 442 Asphalt Concrete Surface Course
- ④ 442 Asphalt Concrete Intermediate Course
- ④ 301 Asphalt Concrete Base
- ④ 302 Asphalt Concrete Base



441 vs. 442 Mixes

☉ 441 Surface and Intermediate

- ☉ Contractor designed mix
- ☉ Marshall mix design
- ☉ 50 to 1500 trucks per day

☉ 442 Surface and Intermediate

- ☉ Contractor designed mix
- ☉ Superpave mix design
- ☉ Greater than 1500 trucks per day*

Item 441 Asphalt Concrete Surface Course

- ☉ **PG64-22 binder**
 - ☉ PG70-22M in certain districts
- ☉ **1” to 1.5” lift thickness**
 - ☉ 1.25” preferred
- ☉ **Type 1 mix design properties**
- ☉ **446 or 448 acceptance**



Item 441 Asphalt Concrete Intermediate Course

- ④ **PG64-22 binder**
- ④ **Type 1 mix design properties**
 - ④ 1" to 1.5" lift thickness
- ④ **Type 2 mix design properties**
 - ④ 1.75" to 3" lift thickness
 - ④ 1.75" preferred
- ④ **446 or 448 acceptance**



Asphalt Mixture Composition			
Property	Type 1 Surface	Type 1 Intermediate	Type 2 Intermediate
1 1/2 inch (37.5 mm) ^[1]			100
1 inch (25.0 mm) ^[1]			95 to 100
3/4 inch (19.0 mm) ^[1]			85 to 100
1/2 inch (12.5 mm) ^[1]	100	100	65 to 85
3/8 inch (9.5 mm) ^[1]	90 to 100	90 to 100	
No. 4 (4.75 mm) ^[1]	45 to 57	50 to 72	35 to 60
No. 8 (2.36 mm) ^[1]	30 to 45	30 to 55	25 to 48
No. 16 (1.18 mm) ^[1]	17 to 35	17 to 40	16 to 36
No. 30 (600 µm) ^[1]	12 to 25	12 to 30	12 to 30
No. 50 (300 µm) ^[1]	5 to 18	5 to 20	5 to 18
No. 100 (150 µm) ^[1]	2 to 10	2 to 12	2 to 10
No. 200 (75 µm) ^[1]			
Asphalt Binder ^[2]	5.8 to 10.0	5.0 to 10.0	4.0 to 9.0
F/A Ratio, max. ^[3]	1.2	1.2	1.2
F-T Value ^[4]	+2	+2	
Blows ^[5]	50	50	50
Stability, min., pounds ^[5]	1200	1200	1200
(N)	(5338)	(5338)	(5338)
Flow, 0.25 mm ^[5]	8 to 16	8 to 16	8 to 16
Design Air Voids ^[6]	3.5	3.5	4.0
VMA, min. ^[7]	16	16	13



446 vs. 448 Acceptance

- ☉ Both methods check binder content, air voids, gradation, and maximum specific gravity
- ☉ 446 always requires pavement cores tested for density
 - ☉ Uniform thickness lifts always required
- ☉ 448 may require density with nuclear gauge
 - ☉ If: 1" uniform thickness, 1 mile continuous paving (minimums)



441 Pay Item Descriptions

- ④ AC Surface Course, Type 1, (446), PG64-22
 - ④ AC Surface Course, Type 1, (446), PG70-22M
 - ④ AC Surface Course, Type 1, (448), PG64-22
 - ④ AC Surface Course, Type 1, (448), PG70-22M
-
- ④ AC Intermediate Course, Type 2, (446)
 - ④ AC Intermediate Course, Type 2, (448)
-
- ④ AC Intermediate Course, Type 1, (448)



Item 442 Asphalt Concrete Surface Course

- ④ PG70-22M binder
- ④ 9.5mm or 12.5mm nominal maximum aggregate size
- ④ Lift thickness
 - ④ 1" to 1.5" (9.5mm mix)*
 - ④ 1.5" to 2.5" (12.5mm mix), 1.5" preferred
- ④ Type A or B mix design
- ④ 446 or 448 acceptance

Item 442 Asphalt Concrete Intermediate Course

- ④ PG64-28 binder
- ④ 9.5mm or 19mm nominal maximum aggregate size
- ④ Lift thicknesses
 - ④ 1" to 1.5" (9.5mm mix)
 - ④ 1.75" to 3" (19mm mix), 1.75" preferred
- ④ Type A or B mix design
- ④ 446 or 448 acceptance

442 Gradations

TABLE 442.02-2 AGGREGATE GRADATION REQUIREMENTS

		9.5 mm mix	12.5 mm mix	19 mm mix
Sieve Size		Total Percent Passing		
1 1/2 inch	(3.75 mm)	—	—	100
3/4 inch	(19 mm)	—	100	85 to 100
1/2 inch	(12.5 mm)	100	95 to 100	90 max
3/8 inch	(9.5 mm)	90 to 100	96 max	—
No. 4	(4.75 mm)	70 max	52 min	—
No. 8	(2.36 mm)	34 to 52	34 to 45	28 to 45
No. 200	(75 µm)	2 to 8	2 to 8	2 to 6



442 Type A and B

Lane ADTT	Course Aggregate Angularity	
	Type A	Type B
< 4000	95 ^[1] / 90 ^[2]	65 ^[1] / 65 ^[2]
> 4000	100 ^[1] / 100 ^[2]	75 ^[1] / 70 ^[2]

^[1] Percent one or more fractured faces.

^[2] Percent two or more fractured faces.



442 Pay Item Descriptions

- ④ AC Surface Course, 9.5mm, Type A or B (446 or 448)*
- ④ AC Surface Course, 12.5mm, Type A or B (446 or 448)
- ④ AC Intermediate Course, 19mm, Type A or B (446 or 448)
- ④ AC Intermediate Course, 9.5mm, Type A or B (448)



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Asphalt Concrete Bases

☉ Item 301 Asphalt Concrete Base

- ☉ ODOT mix design

- ☉ 3" to 6" lifts

☉ Item 302 Asphalt Concrete Base

- ☉ Contractor mix design

- ☉ 4" to 7.75" lifts



Low Traffic Mixes

- ☉ **ODOT SS 823 Light Traffic Asphalt Mixture Composition Requirements**
 - ☉ Less than 50 trucks per day
 - ☉ State park roads, driveways, bike paths
- ☉ **FPO 404LVT (Low Volume Traffic) Asphalt Concrete**
 - ☉ Less than 2500 ADT



SS 823 Light Traffic Asphalt

- ☉ Type 1 surface course mix
- ☉ Type 1 and 2 intermediate course mixes
- ☉ Follow 441 lift thickness guidelines
- ☉ 448 acceptance only

404LVT

- ④ **Not an ODOT specification**
- ④ **Cookbook recipe design**
- ④ **1” lift thickness for surface course**
- ④ **Variable depth intermediate course if needed for leveling**



Other Asphalt Items

- ④ 424 Fine Graded Polymer Asphalt Concrete
- ④ 443 Stone Matrix Asphalt Concrete
- ④ 826 Asphalt Concrete with Fibers
- ④ 857 Asphalt Concrete with Gilsonite

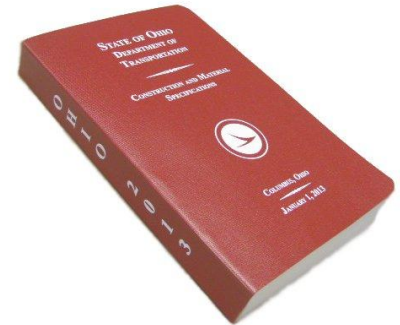


ODOT Resources

Pavement Design Manual



The Ohio Department of Transportation



Design Reference Resource Center (DRRC)

Centralized source of electronically distributed Design reference materials, including Design Manuals, Specifications, Standard Drawings and more.



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DRRC List

Where can I find	Latest Revision/History	Mailing List Subscription	Publishing Office
Alpha : A (14)			
Addenda Listing	Updates regularly*	<i>No list available</i>	Construction Contract Sales
Aesthetic Design Guidelines	September 2000	<i>No list available</i>	
Airport Directory	2005-2006 *	<i>No list available</i>	Aviation



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ODOT 2013 CONSTRUCTION & MATERIAL SPECIFICATIONS



Copies of the 2013 Construction and Material Specifications may be purchased by contacting:

Ohio Department of Transportation
Office of Contracts
1980 West Broad Street
Columbus, Ohio 43223
Telephone (614) 466-3778 466-3200

Price: \$4.50 + Shipping + tax
Make checks payable to:
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ODOT Proposal Notes, Supplemental Specifications, and Supplements

2013 Active Proposal Notes, Spec Book, Supplemental Specifications and Supplements

Type	Number	Effective Date	Title	Name	Designer Note
⊕ Document Type : Proposal Note	(41)				
⊕ Document Type : Spec Book	(1)				
⊕ Document Type : Supplement	(115)				
⊕ Document Type : Supplemental Spec	(86)				

2013 All Proposal Notes, Spec Book, Supplemental Specifications and Supplements

Type	Number	Title	Effective Date	Name	Designer Note
⊕ Document Type : Proposal Note	(56)				
⊕ Document Type : Spec Book	(1)				
⊕ Document Type : Supplement	(155)				
⊕ Document Type : Supplemental Spec	(127)				





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Industry Resources

FLEXIBLE PAVEMENTS OF OHIO

An Association for the development, improvement and advancement of quality Asphalt Pavement Construction.

6205 Emerald Parkway, Suite B, Dublin, Ohio 43016
888-4HOTMIX (In Ohio), 614-791-3600, 614-791-4800 (Fax)
info@flexiblepavements.org
www.flexiblepavements.org

Technical Bulletin: Specifying Asphalt Pavements in Ohio (18July2014)

General

High quality pavements are the result of well engineered pavement designs, high quality input materials, proper placement procedures, accurate and complete contract specifications, and an adequate quality assurance program. The purpose of this Technical Bulletin is to introduce the various asphalt materials available for use in Ohio, to raise awareness of the information necessary to draft complete contract specifications, and to assist agencies in adopting specifications utilizing quality control and acceptance. It is not the intention of this document to supplant proven successful means of specifying asphalt pavements. However, for those agencies who desire to remain

The asphalt binder grade adopted by ODOT for medium (normal) traffic is PG 64-22. PG stands for performance grade. The numbers represent the temperatures (in degrees Celsius) for which the binder was graded to perform. The 64 stands for the average seven day maximum pavement temperature and the minus 22 stands for the minimum pavement temperature at which the pavement will perform satisfactorily.

See the "Grade of Binder" section below for additional discussion of binder grade options. A complete discussion of PG binders can be found in Asphalt Institute publication SP-1, [Performance Graded Asphalt Binder Specification and Testing](#).



Questions?

