

CRITERIA FOR SPECIFYING 446 & 448

Updated to ODOT 2014 Pavement Design Guide

Specification	Guidelines For Use	Ref.*
446 Acceptance is specified when mat density acceptance is desired. Coring the pavement is required to obtain samples for density testing.	<ul style="list-style-type: none"> ▪ Specify items with 446 acceptance for all lifts placed at a uniform thickness on Priority, General and Urban System projects requiring heavy traffic mix design with greater than 500 cubic yards of surface course. ▪ Specify items with 446 acceptance for all designed Priority System minor rehabilitation projects where a uniform thickness is placed. ▪ Specify items with 446 acceptance for all lifts placed at a uniform thickness on Priority System projects where the combined surface and intermediate course quantities exceed 2000 cubic yards. ▪ Specify items with 446 acceptance for all lifts placed at a uniform thickness on General and Urban System projects requiring heavy traffic mix design where the combined surface and intermediate course quantities exceed 2000 cubic yards. ▪ For projects which require 446 acceptance, it is permissible to use variable thickness at bridges and ramps to taper down to the required elevation. Only areas of uniform thickness should be tested for density. ▪ Where 446 is specified for the surface course, intermediate course material should also be specified 446 except where the intermediate course is a variable thickness. 	404.1
424, 448, 442 Acceptance by mix proportions testing	Applicable to all projects where 446 is not required. When a uniform thickness course of 1-inch or greater and 1 mile or more is specified density quality control per 448/S 1055 is required.	404.1

CRITERIA FOR SELECTION OF MIX TYPE, BINDER TYPE & COURSE THICKNESS

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Item	Description	Layer Thickness	Binder Type	Traffic	Remarks	Ref.
424	Surface, Type A or B	Type A – 5/8" Type B – ¾ to 1-1/4"	PG76-22M or PG 64-22 + 5% SBR	A <1500ADTT. B – All	<ul style="list-style-type: none"> ▪ Intended primarily for Preventive Maintenance (PM) surface treatment. ▪ Type "A" Accepted per Item 403 "Basic Mix", Type B accepted per Item 448 	406.1.6
441(446/8)	Surface, Type 1	1¼" to 1½" ▪ Can be as thin as 1"	PG 64-22 or PG 70-22M	<1500 ADTT	<ul style="list-style-type: none"> • Specify PG70-22M for routes desiring a polymer modified binder 	406.1.1 & 2
442 (446/8)	Surface, 9.5 mm, A & B	1¼" to 1½" ▪ Can be as thin as 1"	PG 64-22	<1500 ADTT	<ul style="list-style-type: none"> ▪ For purpose of mix design development indicate Average Daily Truck Traffic (ADTT) using pavement. 	406.1.3
442 (446/8)	Surface, 12.5 mm, A & B	1½" to 2½" (1½" min.)	PG 70-22M	> 1500ADTT	<ul style="list-style-type: none"> ▪ For purpose of mix design development indicate Average Daily Truck Traffic (ADTT) using pavement. 	406.1.4
443 (446)	Stone Matrix Asphalt Surface or Intermediate, 12.5mm	1-1/2 to 2"	PG 70-22M or PG76-22M	Hvy. and buggy routes	<ul style="list-style-type: none"> ▪ This mixture is used to provide high rutting resistance and durability; minimum recommended placement is one mile of continuous paving or 250 cubic yards. 	406.1.5
441	Intermediate, Type 1	1" to 1½"	PG 64-22	<1500 ADTT	<ul style="list-style-type: none"> ▪ Use when total pavement overlay < 3" 	406.2.1
442 (446)	Interm., 19 mm, A & B	1¾" to 4½" (3" max. compacted lift) ▪ Can be as thin as 1½", but discouraged; ▪ Avoid specifying layer thickness between 3" to 3½"	PG 64-28	> 1500ADTT	<ul style="list-style-type: none"> ▪ For purpose of mix design development indicate Average Daily Truck Traffic (ADTT) using pavement 	406.2.1
441	Intermediate, Type 2	1¾" to 4½" (3" max. compacted lift) ▪ Can be as thin as 1½", but discouraged; ▪ Avoid specifying layer thickness between 3" to 3½"	PG 64-22 for Med. and Lt. traffic, PG 64-28 for Hvy. traffic	<1500 ADTT		406.2.2
441	Intermediate, Type 1	1" to 1½"	PG 64-22	<1500 ADTT	<ul style="list-style-type: none"> ▪ For use as variable thickness course, scratch, leveling, wedges, and tapers, or as a uniform course thickness for projects designed for light or medium traffic levels. 	406.2.3
442 (448)	Interm., 9.5 mm, A & B	1" to 1½"	PG 64-28	> 1500ADTT.	<ul style="list-style-type: none"> ▪ For purpose of mix design development indicate Average Daily Truck Traffic (ADTT) using pavement; ▪ For use as variable thickness course, scratch, leveling, wedges, and tapers with heavy traffic design. 	406.2.4
442 (448)	Interm., 19 mm, A & B	1¾" to 4½" (0" min.) ▪ Avoid specifying layer thickness between 3" to 3½"	PG 64-28	> 1500ADTT	<ul style="list-style-type: none"> ▪ For use as variable thickness course, scratch, leveling, wedges, and tapers for all traffic levels, and as a uniform thickness course using density gauge quality control. ▪ For purpose of mix design development indicate Average Daily Truck Traffic (ADTT) using pavement 	406.2.5
441	Intermediate, Type 2	1¾" to 4½" (0" min.) ▪ Avoid specifying layer thickness between 3" to 3½"	PG 64-22	<1500ADTT	<ul style="list-style-type: none"> ▪ For use as variable thickness course, scratch, leveling, wedges, and tapers for all traffic levels, and as a uniform thickness course using density gauge quality control. 	406.2.6
301	Asphalt Concrete Base	3" to 10" ▪ Can be as thin as 2½", but discouraged; ▪ Maximum compacted lift thickness is 6 inches.	PG 64-22	all	<ul style="list-style-type: none"> ▪ Item 302 should have 3" min. cover ▪ May be used as variable thickness ▪ Minimize contact with high traffic volumes. Intermediate course preferred for MOT, particularly over winter. 	406.3.1
302	Asphalt Concrete Base (Large Stone)	4" min. ▪ Maximum compacted lift thickness is 7 ¾ inches.	PG 64-22	Heavy.	<ul style="list-style-type: none"> ▪ Item 302 should have 3" min. cover ▪ May be used as variable thickness ▪ Item 302 was developed for use in high volume truck traffic applications ▪ When using multiple layers of base mix in a pavement buildup do not use Item 301 below Item 302. ▪ Should not be used for MOT for > 60 days and never over the winter. 	406.3.2

* Refer to the ODOT, Office of Pavement Engineering, Pavement Design Manual, Section 400, Flexible Pavement Design

Smoothness incentives generally result in better attention to detail by the contractor and higher quality pavement overall. Smooth, high quality pavements are expected to perform better for a longer time, potentially resulting in cost savings.

Proposal Note 420 – Surface Smoothness Requirements for Pavements

PN 420 is an incentive/disincentive based specification.

Use on projects having the following:

1. The project is at least 1 centerline mile (1.6 km) long (both divided and undivided highways);
2. The design speed is 50 miles per hour (80 km/h) or greater; and one of the following applies:
 - (a) The total new asphalt pavement thickness is equal to or greater than 3.00 inches (75 mm) or,
3. This note should not be used for projects that are totally within corporation limits.

Proposal Note 470 – Thin Lift Asphalt Surface Smoothness Requirements

PN 470 is an incentive only specification. The minimum smoothness requirements when PN 470 is used are contained in the ODOT Construction & Materials Specifications, Item 401.19

Use this proposal note when the District determines smoothness is desired for paving projects and the pavement thickness is less than the minimum specified in PN 420.

Projects where this note may not be desired are:

1. Projects with single course overlay without pavement planing. Districts should evaluate the existing pavement condition to determine if the desired smoothness is reasonably achievable and potentially provide additional asphalt quantity as required.
2. Projects with legal speeds less than 40 mph.
3. Projects with numerous intersections.
4. Small projects of less than 1 lane mile in length.
5. Projects with special nighttime time restrictions and traffic making obtaining smoothness data impractical.

This is a summary of ODOT guidance documents and was prepared by Flexible Pavements of Ohio (Rev. 18July2014)