

RIDOT HMA Matrix

	Old Designation ¹	New Designation ¹	Typical Lift Thickness ³				Typical Use	Differences/Similarities
	Marshall	Class NMAS	Inches		Millimeters			
			Min.	Max.	Min.	Max.		
Dense Base Courses	Base Modified Base ² Binder ² Modified Binder ² Bridge Binder ²	Class 19	2.25	4	57	102	Base or other underlying layers. Preferred mix for lifts greater than or equal to 2.25"	Asphalt contents and gradation are similar. Allowable RAP contents are same. Asphalt grades are similar (non-polymer modified)
		Class 12.5	2	3	51	76	Surface, Base or other underlying layers. Base for Bikepaths Patching, Utilities, Waterways	Asphalt contents and gradation are nearly the same. Asphalt grades are similar (non-polymer modified) Polymer/rubber modified binder may be used for surface courses.
Dense Surface Courses	Class I-1	Class 9.5	1.5	2.25	38	57	Surface, Bridges, Sidewalks, Leveling, Patching, Utilities, Waterways, Misc.	Asphalt contents and gradation are similar. Polymer/rubber modified binder may be used for surface courses and should always be used for bridge decks.
	Class I-2							
	Class 4.75	0.75	1.25	19	32	Surface, Surface for Bikepaths Leveling, Patching, Utilities, Waterways, Misc.	No Marshall comparison.	
Special Courses & Others	Modified Friction ² Ramp Friction	Friction (FC)	1.25		32		Primary/Interstate Surface	Currently a Marshall Design, will change to a hybrid design
		PPEST	1		25		Pavement Preservation Overlay	Hybrid design with similar results to Marshall.
		SMA	Varies with NMAS				Base and/or Surface	

HMA = Hot Mix Asphalt, NMAS = Nominal Maximum Aggregate Size, FC = Friction Course, PPEST = Paver Placed Elastomeric Surface Treatment, SMA = Stone Matrix Asphalt

Notes:

1. New designations shall be used.
2. The term “binder” should only be used to mean liquid asphalt. The term “modified” will refer to the polymer/rubber modification of binder. Other additives for binder will be referred to in the specification (i.e. WMA, anti-stripping, etc.). Polymer/rubber modified binders will require more effort for compaction in the field, especially when the temperature differential between mixing and ambient temperatures is greatest.
3. Minimum lift thickness may be calculated as 3 times the NMAS, but 4 times the NMAS is recommended. For example: Superpave 12.5mm, 4 x 12.5mm = 50 mm or 2 inches as a lift thickness (this rule excludes special courses). In general, using more lifts will provide for a smoother pavement and the largest NMAS should be used for each lift.
4. “Class” will refer to dense HMA courses. “Class” is followed by a number representing the NMAS of the mix in millimeters.