

2026 ASPHALT BINDER & MIXTURE REFERENCE GUIDE

FOR LOCAL AGENCIES

The Asphalt Paving Association of Iowa developed Asphalt Binder and Mixture Guides for the Iowa DOT, Counties, and Local Agencies in 2023. The 2026 guide has been prepared to provide updates since 2023. See SUDAS Design Manual Section 5D-1: Asphalt Pavement Mixture Selection for additional information.

SUDAS TABLE 5D-1.01: ASPHALT BINDERS FOR LOCAL AGENCIES

DESIGN TRAFFIC (1X10 ⁶ ESALS)	DESIGN SPEED (MPH)		PG BINDER GRADE
< 0.3 M	AND	ANY	58-28S
0.3-1.0M	AND	> 45M	58-28S
0.3-1.0M	AND	15-45	58-28S ¹
1.0-10M	AND	15-45	58-28H
OVERLAYS (LT/ST/HT)			58-28S or H 64-22S ²

PG 64-22 may be used south of I-80 if methods to retard reflective cracking are not used.

¹ Use of PG 58-28H should be considered if heavy truck or bus traffic is present.

MIXTURE DESIGN CRITERIA DERIVED FROM SUDAS & DOT IM 510A

DESIGN TRAFFIC (1X10 ⁶ ESALS)	MIXTURE DESIGNATION		GYRATORY DENSITY		FILM THICKNESS	AGGREGATE ¹			
			N _{DES}	DESIGN (TARGET)% G _{MM}		QUALITY TYPE	PERCENT CRUSHED (MIN)	FAA	SAND EQUIVALENT
≤ 0.3 ² M	LT ²	Surface	50	96.0	8.0-15.0	A	60	-- ²	40
		Intermediate		96.0		A ²	60 ²	-- ²	
		Base		97.0		A ²	45	--	
0.3 ² - 1.0 M	ST	Surface	50	96.0	8.0-15.0	A ²	75 ²	40	40
		Intermediate		96.0		A ²	60 ²	40	
		Base		97.0		A ²	60 ²	--	
1.0 - 10.0 M	HT	Surface	75	96.0	8.0-15.0	A	75	43	45
		Intermediate		96.0		A	75 ²	43	
		Base		96.5		A ²	60	43 ²	
		HMA Interlayer ³	50	≥ 98.0	≥ 8.0	A	45	40	50
		HMA Thin Lift ³	50	≥ 98.0	≥ 8.0	A	50	40	50

¹ Flat & Elongated 10% maximum at a 5:1 ratio.

² Requirements differing from Iowa DOT Materials I.M. 510.

³ See Iowa DOT Materials I.M. 510A, Table 3 and Table 4 for additional requirements.

STEP-BY-STEP BID ITEM CONSTRUCTION

STEP 1: Select Nominal Maximum Aggregate Size

- ¾" – Thin lifts, trails, athletic facilities
- ½" – General surface and intermediate mix
- ¾" – General base mix

STEP 2: Determine Traffic Level

- Standard Traffic (ST) ≤ 1M ESALS
- High Traffic (HT) 1M-10M ESALS
- Very High Traffic (VT) > 10M ESALS

STEP 3: Choose Lift Designation

- Base
- Intermediate
- Surface
- Shoulder

(Minimum lift thickness = 3 X NMA size)

STEP 4: Choose the Appropriate Binder

- Determine location and type of work.
- Use binder selection guide above to select recommended binder.

BID ITEM EXAMPLE

- HMA Standard Traffic (ST) surface, ½"
- Asphalt binder, PG 58-28S

EXAMPLE BINDER GRADE COMPARISON*

PREVIOUS PG	CURRENT PG	BINDER BUMP FOR RAP**
PG 58-28	PG 58-28S	PG 52-34S
PG 64-28	PG 58-28H	PG 52-34H
PG 70-28	PG 58-28V	PG 52-34V
PG 76-28	PG 58-28E	PG 52-34E

* Approximate equivalents

** Binder bump required when > 20% of binder is from RAP

ADDITIONAL INFO

FULL DEPTH PAVEMENTS

- Use "S" binder at depths > 3" or 4" from the surface

TYPICALLY AVAILABLE BINDERS

- PG58-28S
- PG 58-28H
- PG 64-22S

NON-TYPICAL BINDERS

- Small quantities of specialized binders (<25 tons of binder) may not be available or have a high cost.

HMA INTERLAYER (SUDAS 7021)

- **Mix** = HMA interlayer base course, ¾"
- **Binder** = PG 58-34E

HIGH-PERFORMANCE THIN LIFT (SUDAS 7021)

- **Mix** = HMA thin lift surface course, ¾"
- **Binder** = PG 64-34E+

BASE WIDENING (SUDAS 7020 3.02)

- **Mix** = HMA ST base, ½" or ¾"
- **Binder** = PG 58-28S

SHOULDERS PAVED SEPARATELY (DOT 2122.02)

- **Base Mix** = HMA ST base, ½", or ¾"
- **Base Binder** = PG 58-28S, 3% air voids
- **Intermediate & Surface:** As specified

PATCHING (SUDAS 7040)

- **Mix** = Any ½" or ¾" mix
- **Binder** = PG 58-28S or PG64-22S
- Intermediate & Surface mix may be substituted.

DETOUR PAVING (IDOT 2304)

- ST or HT Mixture, PG58-28S or PG 64-22S Binder

LEVELING AND GRADE CORRECTION (SUDAS 7021)

- Use the same mix specified for the base or intermediate course.