

# Design Criteria 2360

Rev. 03/06/2018

Mixture Designation Code	
Mixture Course	Code Format
Non Wear (4" below pavement surface)**	SPNW <u>(1)</u> * <u>(2)</u> * 30 <u>(3)</u> *
Wear (Top 4" of pavement)**	SPWE <u>(1)</u> * <u>(2)</u> * 40 <u>(3)</u> *
Shoulder Wear & Non-Trunk Highway Low Volume Wear	SPWE <u>(1)</u> * <u>(2)</u> * 30 <u>(3)</u> *
Stone Matrix Asphalt (SMA) – Spec 2365	SMWEE640H

\* Select (1) Aggregate Size; (2) Traffic Level; and (3) Asphalt Binder Grade as shown below. See Mixture Designation Example. WE=wear; NW=non-wear

\*\*May replace 4" with 3" for non-trunk highway with traffic levels < 3 million ESAL's.

**(1) Aggregate size.** Recommended minimum lift thickness is also shown:

**Size A** (-1/2") **SP 9.5** – 1 1/2" minimum

**Size B** (-3/4") **SP 12.5** – 2" minimum

**Size C** (-1") **SP 19.0** – 3" minimum

**Size D** (-3/8") **SP 4.75** – 3/4" minimum

- a. The **A** gradation provides a "finer" pavement surface. Select this aggregate size if you are concerned about coarseness of the driving surface or segregation of material during placement. It is only necessary to specify **A** for the final wear lift, aggregate size **B** can be used for all underlying lifts. Except for SMA and unless otherwise designated in the Special Provisions, the Contractor has the option to supply recycled mixture. With the approval of the Engineer, the Contractor may supply a gradation with a smaller maximum aggregate size than that specified, i.e. size A in lieu of size B.

**(2) Traffic Level:** Select Levels 2-6 based on ESAL's as shown in example below.

- a. For slow traffic consider selecting a higher mix type (Traffic Level) and/or higher high temperature binder grade. For shoulders where traffic is allowed consider selecting a higher mixture type (Traffic Level).
- b. Use the same Traffic Level for Wear and Non-Wear mixture.

**(3) Asphalt Binder Grade:**

- a. For mainline paving select the asphalt binder grade from the most current PG Guidelines. See Design Section on Bituminous Office Webpage.
- b. For shoulders where traffic is allowed, generally, use the same binder grade as the mainline.
- c. For shoulders where traffic is prohibited select either PG 52S - 34 or PG 58S - 28 by matching the mainline low PG number.  
**I.E. Mainline PG 58H - 28=> Shoulder PG 58S - 28**
- d. For new construction including cold in place recycle (CIR), reclaiming, and reconstruction, specify, PG 58\_-34 in the wear (top 4") of the pavement structure.

- Notes: 1) Typical Sections should delineate individual lifts/courses and thicknesses.  
2) Include mixture designation codes and ride equation in contract special provisions.  
3) Use SMA on final wearing surface only (1.5"-2" lift). Specify minimum PG 58V-28 (H) for SMA mixtures.

Mixture Designation Example: **SPWEB440E**

<u>Type</u>	<u>Lift</u>	<u>Max Agg. Size</u>	<u>Traffic Level (ESAL's X 10<sup>6</sup>)</u>	<u>Air Voids</u>	<u>Standard Binder Grades</u>	
<b>SP</b>	<b>WE</b>	A (SP 9.5)	2 (<1.0 & Shld)	30 (3.0)	A = PG 52S -34	H = PG 58V - 28
SM	NW	<b>B (SP 12.5)</b>	3 (1 - 3)	<b>40</b> (4.0)	B = PG 58S - 28	L = PG 64S - 22
		C (SP 19.0)	<b>4</b> (3 - 10)		C = PG 58H - 34	M = PG 49S - 34
		D (SP 4.75)	5 (10 - 30)		<b>E = PG 58H - 28</b>	
		E (SMA)	6 (SMA)		F = PG 58V - 34	

The format for 2360 Pay Items are as follows:

2360.501 Type SP         Course Mixture (    ,     ).....English ton

An example of the pay item for the above mixture designation is:

2360.501 Type **SP12.5 Wearing** Course Mixture (**4, E**).....English ton

Note: Number in parenthesis denotes the traffic level and the letter denotes the PG grade.

