

MIX DESIGNATION NUMBERS for BITUMINOUS MIXTURES (2360)

Mixture designations for asphalt mixtures contain the following information:

- (1) The first two letters indicate the mixture design type:
SP = Gyrotory Mixture Design
LV = Marshall Mixture Design – Low Volume, 50 blow
MV = Marshall Mixture Design – Medium Volume, 50 blow
SM = Gyrotory Mixture Design for Stone Matrix Asphalt (SMA)

- (2) The third and fourth letters indicate the course:
WE = Wearing and Shoulder Wearing Course
NW = Non-Wearing Course

- (3) The fifth letter or number indicates the maximum aggregate size*:
A or 4 = 12.5mm [**1/2 inch**], SP 9.5
B or 3 = 19.0mm [**3/4 inch**], SP 12.5
C or 2 = 25.0mm [**1 inch**], SP 19.0
5 = 9.5mm [**3/8 inch**], (Marshall design only)
E = See provision for SMA design
 * Letter is used in gyrotory designation; number is used in Marshall designation

- (4) **For Gyrotory Design:**
 The sixth digit indicates the Traffic Level (ESAL's x 10⁶)
 The requirements for gyrotory mixtures in this specification are based on the 20-year design traffic level of the Project expressed in Equivalent Single Axle Loads (ESAL's).
 The five traffic levels are shown below in Table 2360.1-A.

Table 2360.1-A
Traffic Levels

Traffic Level	20 Year Design ESAL's (1 x 10 ⁶ ESAL's)
2 ¹	< 1
3 ²	1 to < 3
4	3 to < 10
5	10 to ≤ 30
6	SMA

1 -- (AADT # 2300)

2 -- (2300 < AADT < 6000)

For Marshall Design:

The sixth and seventh digit indicate the Marshall design blows:

50 blow design for both LV and MV mixtures

- (5) The last two digits indicate the air void requirement:
40 = 4.0% for SP and SM Wear mixtures
35 = 3.5% for MV Wear and Non-Wear
30 = 3.0% for LV Wear and Non-Wear and SP Non-Wear and Shoulder

- (6) The letter at the end of the mixture designation identifies the asphalt binder grade:

Standard Grades

B = PG 58-28

C = PG 58-34

E = PG 64-28

F = PG 64-34

L = PG 64-22

Specialty Grades

A = PG 52-34

D = PG 58-40

G = PG 64-40

H = PG 70-28

I = PG 70-34

Mixture Examples

Mixture Designation Example: **SPWEB440E**

<u>Type</u>	<u>Lift</u>	<u>Max Agg. Size</u>	<u>Traffic Level (ESAL's X 10⁶)</u>	<u>Air Voids</u>	<u>Binder Grade</u>	
SP	WE	A	2	(<1.0)	30 (3.0)	A = PG 52 -34
SM	NW	B	3	(1 - 3)	40 (4.0)	B = PG 58 - 28
		C	4	(3 - 10)		C = PG 58 - 34
			5	(10 - 30)		D = PG 58 - 40
			6	(SMA)		E = PG 64 - 28
						F = PG 64 - 34
						G = PG 64 - 40
						H = PG 70 - 28
						I = PG 70 - 34
						L = PG 64 - 22

The format for **2360** Pay Items will be as follows:

2360.501 Type SP __.____ Course Mixture (__,_).....metric ton (English ton)

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

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

Note: Characters in parenthesis: first, second the traffic level and second the PG grade.

Be careful when specifying aggregate size. It is nominal maximum aggregate size. Not maximum aggregate size.

Mixture Designation Example: **MVWE35035B**

<u>Traffic Level</u>	<u>Lift</u>	<u>Max Agg. Size</u>	<u>No. Blows</u>	<u>Air Voids</u>	<u>Binder Grade</u>
LV	WE	2 (1")	50	30 (3.0)	A = PG 52 -34
MV	NW	3 (3/4")		35 (3.5)	B = PG 58 - 28
		4 (1/2")			C = PG 58 - 34
		5 (3/8")			D = PG 58 - 40
					E = PG 64 - 28
					F = PG 64 - 34
					G = PG 64 - 40
					H = PG 70 - 28
					I = PG 70 - 34
					L = PG 64 - 22

The format for **2350** Pay Items will be as follows:

2350.501 Type __ _ Wearing Course Mixture ____ metric ton (English ton)

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

2350.501 Type **MV 3** Wearing Course Mixture **B** metric ton (English ton)

Note: PG grade is included in the pay item.