

## **Concrete Mix Design Numbering System**

The NCDOT numbering system incorporates the Producers' Mix Design ID and adds a prefix and suffix to create the State Mix Design number. The system is as follows:

1. The first 1, 2, or 3 numbers is the concrete plant number. For example, RM94 is CEMEX's Elm St. Plant in Greensboro. All mixes from that plant will begin with 94.
2. Next comes a three-place DOT code for (1) the class of concrete, (2) the vibration and air-entrainment status of the mix, and (3) the type of Pozzolan used, if any. For example, 2VF means Class AA, vibrated and air-entrained, with Class F fly ash. See Tables XI-1, Table XI-2 and Table XI-3 for codes.

Table XI-1: Table of Codes for Class of Concrete

<b>Code</b>	<b>Class of Concrete</b>
1	Class A
2	Class AA
3	Class AAA
B	Class B
C	Shotcrete
D	Drilled Shaft
E	Regular Precast
G	Grout
H	High Early Strength Patch Mix
L	Latex Modified Concrete
M	Class B Curb & Gutter Machine
N	Non-Excavatable Flowable Fill
P	Regular Prestress
R	Class AA Slip-form Barrier Rail
S	Class S
T	Pavement
X	Excavatable Flowable Fill
Y	Prestress Self-Consolidating
Z	Precast Self-Consolidating

Table XI-2: Table of Air Entrainment and Vibration Status

<b>Code</b>	<b>Vibration and AEA Status</b>
V	Vibrated and Air Entrained
N	Non-vibrated and Air Entrained
X	Vibrated and Non-air Entrained
Y	Non-vibrated and Non-air Entrained

Table XI-3: Table of Pozzolan

Code	Type of Pozzolan
O	No Pozzolan
F	Class F Fly Ash
C	Class C Fly Ash
G	Ground Granulated Blast Furnace Slag
U	Silica Fume

- The Producer's Mix Design ID number comes next. This number can be any combination of numbers and/or letters up to nine places. Each number must be unique within a given plant. This means when a producer changes a material source, quantity, or property he must assign a different number to the mix and resubmit it for approval and entry into the NCDOT database. Only admixture quantities are exempt from this requirement. It is understood that admixture quantities may vary in concrete production due to concrete temperature, environmental conditions, presence of other admixtures, etc.
- Last is the suffix, which is always the letter "E" meaning English units of measurement (as opposed to metric units). No mixes are issued in metric, regardless of which units are used to design the job. Initial, it was planned to have a dual system with metric mixes ending in the letter "M", but metric conversion by hand proved too cumbersome and time-consuming for staff, and so a dispensation was given to issue all mixes in English.

Example of Numbering System

