

**STATE OF OHIO
DEPARTMENT OF TRANSPORTATION
SUPPLEMENTAL SPECIFICATION 904
STANDARDIZATION OF 499.031
CONCRETE PROPORTIONING OPTIONS**

May 5, 1998

904.01 Description

904.02 Option 1 Mix Design Concrete Table

904.03 Option 2 Mix Design Concrete Table

904.04 Option 3 Mix Design Concrete Table

904.05 Approval

904.01 Description. This specification supercedes the *Construction & Material Specification* 499.031 requirement of submitting option mix designs and certified test data for approval. Tables have been developed to standardize the 499.031 option mix designs and therefore submittal of the certified test data is no longer required when using these tables. All other requirements of 499.031 apply.

The dry weights specified in these tables were calculated using the same specific gravities used in 499.03. The specific gravity used for ground granulated blast furnace (GGBF) slag is 2.90. Adjustments shall be made to the mix design due to specific gravities differing by more than 0.02. Other adjustments may be made as allowed in 499.03 and approved by the Engineer.

904.02 Option 1 Mix Design Concrete Table: Quantities Per Cubic Meter (Cubic Yard).

	Fine Agg. kg (lb)	Coarse Agg. kg (lb)	Total kg (lb)	Cement kg (lb)	Fly Ash kg (lb)	W/C Ratio
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Class C Option 1(Using No. 57 or No. 67 size):

GR	676 (1140)	1009 (1700)	1685 (2840)	303 (510)	53 (90)	0.50
LS	748 (1260)	946 (1595)	1694 (2855)	303 (510)	53 (90)	0.50
SLG	783 (1320)	789 (1330)	1572 (2650)	303 (510)	53 (90)	0.50

Class F Option 1(Using No. 57 or No. 67 size):

GR	748 (1260)	1068 (1800)	1815 (3060)	237 (400)	42 (70)	0.55
LS	801 (1350)	1026 (1730)	1827 (3080)	237 (400)	42 (70)	0.55
SLG	819 (1380)	875 (1475)	1694 (2855)	237 (400)	42 (70)	0.55

Class S Option 1 (Using No. 57 or No. 67 size):

GR	629 (1060)	973 (1640)	1602 (2700)	361 (608)	63 (107)	0.44
LS	730 (1230)	884 (1490)	1614 (2720)	361 (608)	63 (107)	0.44
SLG	724 (1220)	771 (1300)	1495 (2520)	361 (608)	63 (107)	0.44

904.03 Option 2 Mix Design Concrete Table: Quantities Per Cubic Meter (Cubic Yard).

	Fine Agg. kg (lb)	Coarse Agg. kg (lb)	Total kg (lb)	Cement kg (lb)	W/CM Ratio
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Class C Option 2 (Using No. 57 or No. 67 size):

GR	706 (1190)	1059 (1785)	1765 (2975)	326 (550)	0.50
LS	783 (1320)	994 (1675)	1777 (2995)	326 (550)	0.50
SLG	822 (1385)	828 (1395)	1649 (2780)	326 (550)	0.50

Class F Option 2 (Using No. 57 or No. 67 size):

GR	780 (1315)	1115 (1880)	1896 (3195)	249 (420)	0.55
LS	837 (1410)	1074 (1810)	1910 (3220)	249 (420)	0.55
SLG	857 (1445)	914 (1540)	1771 (2985)	249 (420)	0.55

Class S Option 2 (Using No. 57 or No. 67 size):

GR	664 (1120)	1015 (1710)	1679 (2830)	395 (665)	0.44
LS	765 (1290)	926 (1560)	1691 (2850)	395 (665)	0.44
SLG	753 (1270)	813 (1370)	1566 (2640)	395 (665)	0.44

904.04 Option 3 Mix Design Concrete Table: Quantities Per Cubic Meter (Cubic Yard).

	Fine Agg. kg (lb)	Coarse Agg. kg (lb)	Total kg (lb)	Cement kg (lb)	GGBF Slag kg (lb)	W/CM Ratio
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Class C Option 3 (Using No. 57 or No. 67 size):

GR	703 (1185)	1053 (1775)	1756 (2960)	228 (385)	98 (165)	0.50
LS	777 (1310)	991 (1670)	1768 (2980)	228 (385)	98 (165)	0.50
SLG	822 (1385)	822 (1385)	1644 (2770)	228 (385)	98 (165)	0.50

Class F Option 3 (Using No. 57 or No. 67 size):

GR	783 (1320)	1109 (1870)	1892 (3190)	174 (294)	75 (126)	0.55
LS	831 (1400)	1074 (1810)	1905 (3210)	174 (294)	75 (126)	0.55
SLG	854 (1440)	911 (1535)	1765 (2975)	174 (294)	75 (126)	0.55

Class S Option 3 (Using No. 57 or No. 67 size):

GR	656 (1105)	1017 (1715)	1673 (2820)	276 (465)	119 (200)	0.44
LS	759 (1280)	923 (1555)	1682 (2835)	276 (465)	119 (200)	0.44
SLG	753 (1270)	807 (1360)	1560 (2630)	276 (465)	119 (200)	0.44

GR = Gravel; LS = Limestone; SLG = Slag; W/C = Maximum water-cement ratio; GGBF = Ground granulated blast furnace slag; CM = Cementitious material..

904.05 Approval. All usage and date limitations in 499.031 shall apply. A request to use any option design must be submitted to the Engineer for approval.