

MIXTURE: *NAME/DESCRIPTION OF MIX*

| CEMENTITIOUS MATERIALS | | | | | | |
|--|--------------------|---------------------------|---|----------------------------------|--|---|
| Component | Specific Gravity | Volume | Amount of CM | | | |
| Cement, <i>c</i> | | ft ³ | lb/yd ³ | | Total cm (includes <i>c</i>) _____ lb/yd ³ <i>c/cm</i> ratio, by mass _____ | |
| Cementitious Material 1, <i>cm₁</i> | | ft ³ | lb/yd ³ | | | |
| Cementitious Material 2, <i>cm₂</i> | | ft ³ | lb/yd ³ | | | |
| Cementitious Material 3, <i>cm₃</i> | | ft ³ | lb/yd ³ | | | |
| FIBERS | | | | | | |
| Component | Specific Gravity | Volume | Amount of Fibers | | | |
| Fiber 1, <i>f₁</i> | | ft ³ | lb/yd ³ | | Total Amount of Fibers _____ lb/yd ³ | |
| Fiber 2, <i>f₂</i> | | ft ³ | lb/yd ³ | | | |
| AGGREGATES | | | | | | |
| Aggregates | Abs (%) | SG _{OD} | SG _{SSD} | Base Quantity, <i>W</i> | | Volume, <i>V_{agg, SSD}</i> |
| | | | | <i>W_{OD}</i> | <i>W_{SSD}</i> | |
| Aggregate 1, <i>agg₁</i> | % | | | lb/yd ³ | lb/yd ³ | ft ³ |
| Aggregate 2, <i>agg₂</i> | % | | | lb/yd ³ | lb/yd ³ | ft ³ |
| Aggregate 3, <i>agg₃</i> | % | | | lb/yd ³ | lb/yd ³ | ft ³ |
| LIQUID ADMIXTURES | | | | | | |
| Admixture | lb/ US gal | Dosage (fl. oz / cwt) | % Solids | Amount of Water in Admixture | | |
| Liquid Dye, <i>ld</i> | | | % | lb/yd ³ | | Total Water from Liquid Admixtures, $\sum W_{adm}$ _____ lb/yd ³ |
| Admixture 1, <i>adm_{x1}</i> | | | % | lb/yd ³ | | |
| Admixture 2, <i>adm_{x2}</i> | | | % | lb/yd ³ | | |
| SOLIDS (DYES, POWDERED ADMIXTURES) | | | | | | |
| Component | Specific Gravity | Volume (ft ³) | Amount (lb/yd ³) | | | |
| Solid Component of Liquid Dye, <i>S_{ld}</i> | | ft ³ | lb/yd ³ | | Total Solids, <i>S_{total}</i> _____ lb/yd ³ | |
| Powdered Admixture, <i>S_{p admix}</i> | | ft ³ | lb/yd ³ | | | |
| WATER | | | | | | |
| | | Amount | | | Volume | |
| Water, <i>w</i> , [$=\sum (W_{free} + W_{adm} + W_{batch})$] | | w/c ratio, by mass | | lb/yd ³ | ft ³ | |
| Total Free Water from All Aggregates, $\sum W_{free}$ | | _____ | | lb/yd ³ | | |
| Total Water from All Admixtures, $\sum W_{adm}$ | | w/cm ratio, by mass | | lb/yd ³ | | |
| Batch Water, <i>W_{batch}</i> | | _____ | | lb/yd ³ | | |
| DENSITIES, AIR CONTENT, RATIOS, AND SLUMP | | | | | | |
| Values for 1 cy of concrete | cm | Fibers | Aggregate (SSD) | Solids, <i>S_{total}</i> | Water, <i>w</i> | Total |
| Mass, <i>M</i> | lb | lb | lb | lb | lb | $\sum M$: lb |
| Absolute Volume, <i>V</i> | ft ³ | ft ³ | ft ³ | ft ³ | ft ³ | $\sum V$: ft ³ |
| Theoretical Density, <i>T</i> , ($=\sum M / \sum V$) | lb/ft ³ | | Air Content, Air, [$= (T - D) / T \times 100\%$] | | | % |
| Measured Density, <i>D</i> | lb/ft ³ | | Air Content, Air, [$= (27 - \sum V) / 27 \times 100\%$] | | | % |
| Total Aggregate Ratio ¹ ($=V_{agg, SSD} / 27$) | % | | Slump, Slump flow, Spread (as applicable) | | | in. |

¹. Ratio of total aggregate volume (in percent) compared to the total volume of concrete (min. allowable is 30%)