

STRUCTURAL BACKFILL TECHNICAL DATA
Guideline Specifications

Target Values	Design In-Place Unit Weight	112 lbs./ft ³ (Min)
	Water-Cement Ratio (W/C)	0.3–0.5
	Aggregate-Cement Ratio (A/C)	4.5: –6:1
	Percent Air Voids	15–25%
Cement	Percent Type I Portland Cement*	50% (Min)
	Percent Fly Ash	50% (Max)
Aggregate	Nominal Aggregate Size	3/8"–3/4"
Admixture	As Needed	

* For sulfate resistance, use Type II or Type V Portland Cement

Structural Backfill Mix Design Example

Components	Batch Weight / Cubic Yard	Volume (CY)	Specific Gravity
Type 1 Portland Cement	210 lbs.	0.03957	3.15
Fly Ash	210 lbs.	0.04986	2.50
#6, #8, or #57 Aggregate	2,525 lbs.	0.57202	2.62
Water	166 lbs.	0.09853	1.00
Pozzololith 100x, Retarder	0.5 lbs.		
Air Voids		0.24	
Total	3111.5 lbs.	1.00	Unit Weight = 115 lbs./ft.³
			W/C = 0.4
			A/C = 6.0
			Percent Air Voids = 24%

Structural Backfill Visual Aid

Too much water

Too little water

Proper amount of water