

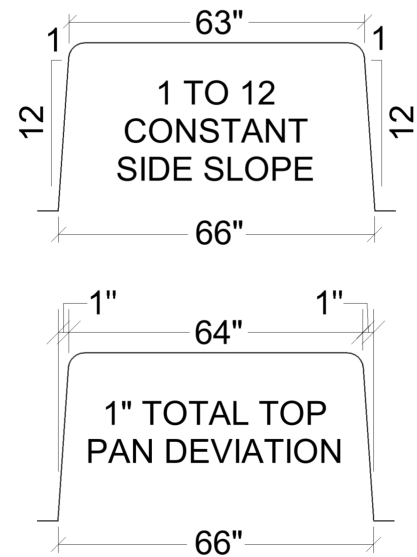
Pan Tips: Calculating Concrete

To an inexperienced estimator, calculating a concrete take-off of a pan void slab can look tedious, but it isn't that difficult.

In reality, you don't need to take off each joist or beam, simply start with the "solid concrete" and remove the voided area of the pan construction. First, we need to look at the cubic feet of void per LF of pan. Pan voids for profiles of 1:12 for different depths are as follows. Pan profiles with 1" draft will have voids that are 1% to 1.5% smaller per lineal foot, which should be inconsequential. Use this table to determine concrete quantities.

CUBIC FT OF VOID PER LF OF PAN

Pan Depth	Pan Width				
	20	30	40	53	66
6	0.81	1.23	Pans Not Available		
8	1.07	1.63			
10	1.33	2.03			
12	1.58	2.42			
14	1.82	2.80			
16	2.07	3.19	4.30	5.74	7.19
20	2.55	3.94	5.32	7.13	8.94
24	3.00	4.67	6.33	8.50	10.67
	Pans with very limited availability				
	Industry Standard void sizes				



CALCULATE CUBIC YARDS OF CONCRETE USING THIS METHODOLOGY:

To determine the cubic yards (CY) of concrete per floor, the estimator starts with the out-to-out area of the footprint and subtracts the large openings, like stair and elevator cores, to determine the net area in square feet. Next, the estimator will multiply that number by the total concrete depth to determine the cubic feet of solid concrete. After this, quantify the lineal feet of void by pan size for the entire footprint and multiply those quantities by the void created by each pan size (from the table above). Subtract the voided volume from the solid concrete to arrive at the net quantity of concrete required for the floor. To this, contractors add some amount of waste, depending on their experience and practices. Let's look at an example of a 20x66 pan slab with 5" topping slabs and no drop beams:

How to Calculate Concrete Quantities for Pan Deck Construction		
1	Determine Net Area	32,500 Square Feet
2	Calculate Solid Concrete	32,500 x 25/12 = 67,708 Cubic Feet
3	Quantify Lineal Feet of Pan Void by Size	4,000 LF of 20x66 Voids
4	Calculate the Voided Concrete	4,000 x 8.94 = (35,760) Cubic Feet
5	Subtract Voided Concrete from Solid Concrete	31,948 Cubic Feet
6	Convert to Cubic Yards	1,183 neat Cubic Yards