



CONCRETE MIX DESIGN

DarCole Products, Inc.
 1940 US 41 South
 Sebree, KY 42455
 USA (270) 826-6499

Customer:	Fc Mix
Description:	4500PSI with Air

Mix Code:	UTFCM4.5KEXT81220
Date:	8/12/2020

Air Range:	Minimum	3.0%
	Maximum	7.0%
Slump Range:	Minimum	3"
	Maximum	5"
Aggregate Ratio:	Coarse	57%
	Fine	43%

Compressive Strength:	4500 PSI
Mortar Content %:	58.0%
Paste Content %:	33.0%
Mix Suitability Factor:	25.45
Unit Weight:	140.4
Water/Cement ratio:	0.44

Material Description	Specification	Quantity (lbs)	Density	Volume
Cementious				
Cement	Holcim 1P Blend	611	3.000	3.26
Coarse Aggregates				
Coarse Aggregate 1	Kilgore 21-05014 #67 Washed Rock	1650	2.554	10.35
Fine Aggregates				
Fine Aggregate 1	Kilgore 22-09514 Washed Concrete Sand	1262	2.618	7.73
	Water: 32.2 gallons	268.84	1.000	4.31
	Air Content 5.0%			1.35
Total:		3792		27.00

Admixture(s)	Material Description	Specification	OZ/CWT	Density	OZ/YD
DSA 110	DarCole Synthetic Air 110	AASHTO M-154	1	1.000	6.11
DNL 785	DarCole Products DarNlok 785	AASHTO M-194 Type A	10	1.030	61.10

Reported by:	Ryan Risley-DarCole Products Inc.	Approval by:	
Date:	8/12/2020	Date:	

Disclaimer: The information in this chart is to the best of our knowledge, reliable. Users should make their own tests to determine the suitability of these for their own particular purposes. DarCole Products, Inc. makes no warranty of any kind, express or implied, including those of merchantable and fitness for purpose.

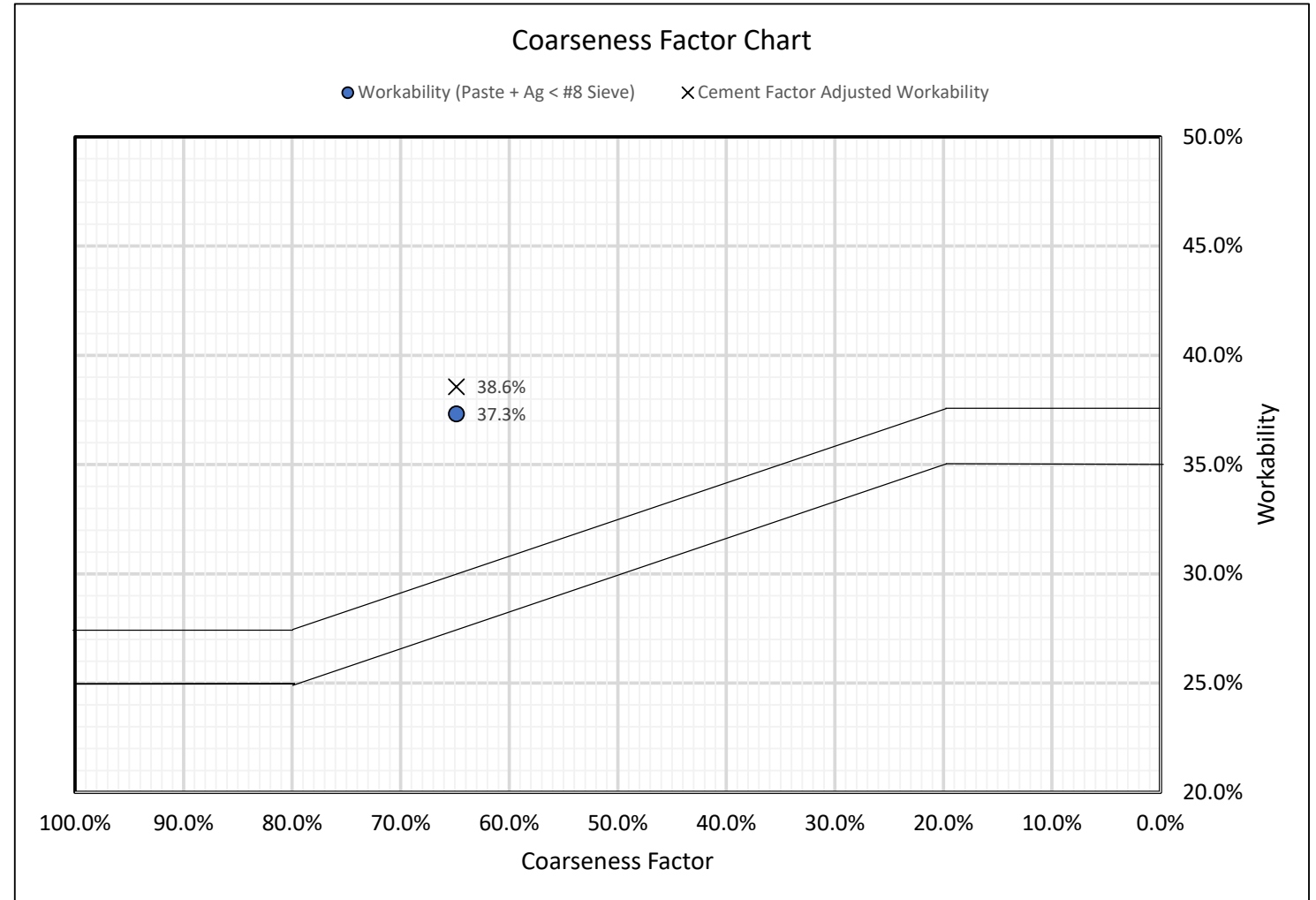


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Mix Analysis											
			Paste & Mortar								
			Vol	%Total	% Agg	%Mortar	%Paste				
58.0%	% Mortar										
40.7%	% Ag Retained on 3/8 Sieve										
22.0%	% Ag Passing 3/8 but Retained on #8 Sieve	+3/8	7.35	27.2%	40.7%						
64.9%	Coarseness Factor	3/8-#8	3.98	14.7%	22.0%						
37.3%	Workability (Paste + Ag < #8 Sieve)	+#8	11.33	42.0%	62.7%						
38.6%	Cement Factor Adjusted Workability	-#8	6.75	25.0%	37.3%	43.1%					
20.97	Modified Specific Surface	Mortar	15.67	58.0%							
25.45	Mix Suitability Factor	Paste	8.92	33.0%			56.9%				
Mix Suitability Factor Guidelines		Slump Range	Powder	3.26	12.1%		20.8%	36.6%			
16-20	Unstable, too Harsh	0	Air	1.35	5.0%		8.6%	15.1%			
20-22	Harsh Mixes-Heavy Vibration	0-2	Water	4.31	16.0%		27.5%	48.3%			
22-25	Hard Wearing-Slabs, Precast	2-3.5	TOTAL	27.00	100.0%	100.0%	100.0%	100.0%			
25-27	Structural Concrete	3-4	Calculated for Total								
26-28	Good Pumpable Concrete=Good Surface	4-5									
27-31	Pumpable, Lightweight, Flowing	>8									





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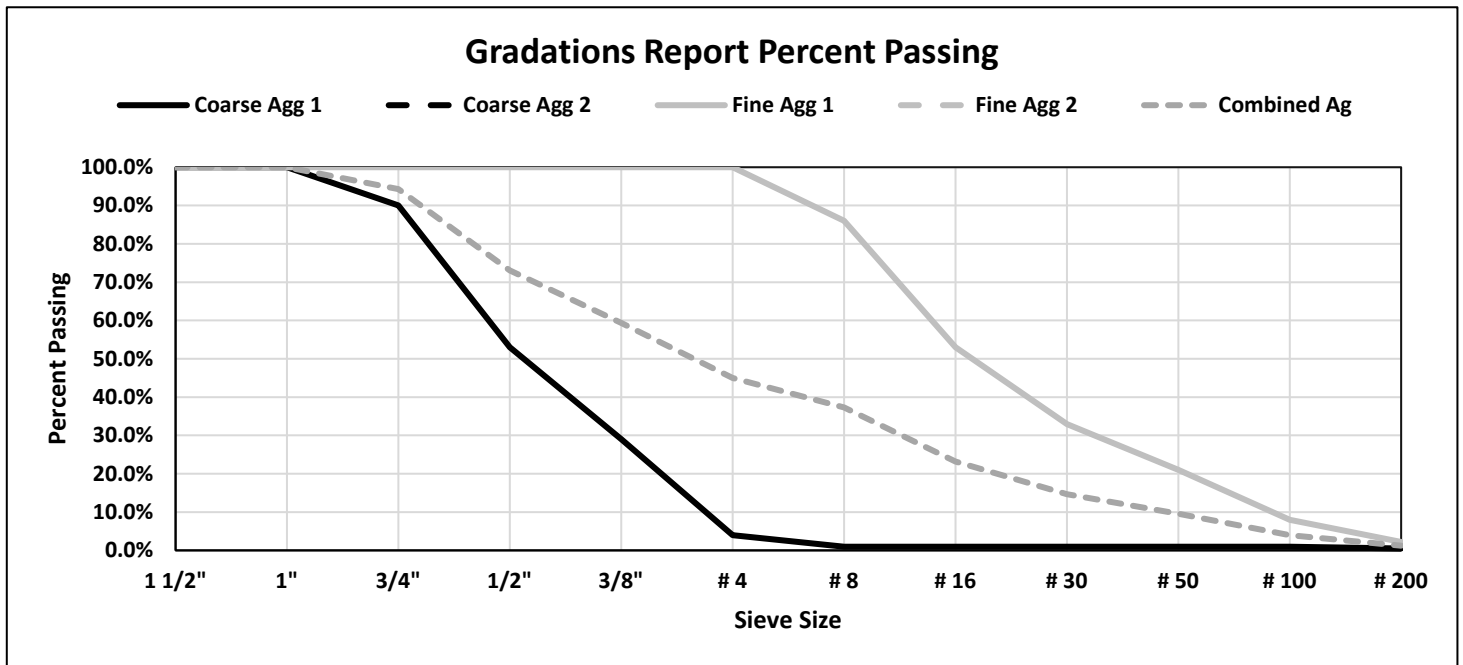
Aggregate Sieve Analysis

Sieve	Coarse Agg 1		Coarse Agg 2		Fine Agg 1		Fine Agg 2		Combined Ag		Paste+Agg	
1 1/2"	100.0%	0.0%			100.0%	0.0%			100.0%	0.0%	100.0%	0.0%
1"	100.0%	0.0%			100.0%	0.0%			100.0%	0.0%	100.0%	0.0%
3/4"	90.0%	10.0%			100.0%	0.0%			94.3%	5.7%	96.2%	3.8%
1/2"	53.0%	47.0%			100.0%	0.0%			73.1%	26.9%	82.0%	18.0%
3/8"	29.0%	71.0%			100.0%	0.0%			59.3%	40.7%	72.8%	27.2%
# 4	4.0%	96.0%			100.0%	0.0%			45.0%	55.0%	63.2%	36.8%
# 8	1.0%	99.0%			86.0%	14.0%			37.3%	62.7%	58.0%	42.0%
# 16	1.0%	99.0%			53.0%	47.0%			23.2%	76.8%	48.6%	51.4%
# 30	1.0%	99.0%			33.0%	67.0%			14.7%	85.3%	42.9%	57.1%
# 50	1.0%	99.0%			21.0%	79.0%			9.5%	90.5%	39.4%	60.6%
# 100	1.0%	99.0%			8.0%	92.0%			4.0%	96.0%	35.7%	64.3%
# 200	0.5%	99.5%			2.2%	97.8%			1.2%	98.8%	22.8%	77.2%
# 325	0.0%	100.0%			0.0%	100.0%			0.0%	100.0%		
% Agg	57.3%				42.7%							

Percent Passing
Percent Retained

	Fine Agg 1	Fine Agg 2
F.M.	2.99	
F.M. Guidelines		
	Fine Sand	2.2-2.6
	Medium Sand	2.6-2.9
	Coarse Sand	2.9-3.2

Coarse Aggregate 1 Kilgore 21-05014 #67 Washed Rock
 Coarse Aggregate 2
 Fine Aggregate 1 Kilgore 22-09514 Washed Concrete Sand
 Fine Aggregate 2





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Individual Percent Retained						
Sieve	Coarse Agg 1	Coarse Agg 2	Fine Agg 1	Fine Agg 2	Combined Ag	Paste + Ag
1 1/2"	0.0%		0.0%		0.0%	0.0%
1"	0.0%		0.0%		0.0%	0.0%
3/4"	10.0%		0.0%		5.7%	3.8%
1/2"	37.0%		0.0%		21.2%	14.2%
3/8"	24.0%		0.0%		13.7%	9.2%
# 4	25.0%		0.0%		14.3%	9.6%
# 8	3.0%		14.0%		7.7%	5.2%
# 16	0.0%		33.0%		14.1%	9.4%
# 30	0.0%		20.0%		8.5%	5.7%
# 50	0.0%		12.0%		5.1%	3.4%
# 100	0.0%		13.0%		5.6%	3.7%
# 200	0.5%		5.8%		2.8%	12.9%
% Agg	57.3%		42.7%			

Coarse Aggregate 1 Kilgore 21-05014 #67 Washed Rock

Coarse Aggregate 2

Fine Aggregate 1 Kilgore 22-09514 Washed Concrete Sand

Fine Aggregate 2

