



# CONCRETE MIX DESIGN

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

Customer:	Fc Mix
Description:	3000PSI with Air 3/8 Chips

Mix Code:	UTFCM3KEXT81220
Date:	8/12/2020

Air Range:	Minimum	3.0%
	Maximum	7.0%
Slump Range:	Minimum	3"
	Maximum	5"
Aggregate Ratio:	Coarse	55%
	Fine	45%

Compressive Strength:	3000 PSI
Mortar Content %:	64.7%
Paste Content %:	29.7%
Mix Suitability Factor:	30.04
Unit Weight:	141.3
Water/Cement ratio:	0.50

Material Description	Specification	Quantity (lbs)	Density	Volume
<b>Cementious</b>				
Cement	Holcim 1P Blend	500	3.000	2.67
<b>Coarse Aggregates</b>				
Coarse Aggregate 1	Kilgore 21-07014 #3/8 Washed Rock	1670	2.564	10.44
<b>Fine Aggregates</b>				
Fine Aggregate 1	Kilgore 22-09514 Washed Concrete Sand	1395	2.618	8.54
	Water: 30.0 gallons	250	1.000	4.01
	Air Content 5.0%			1.35
Total:		3815		27.00

Admixture(s)	Material Description	Specification	OZ/CWT	Density	OZ/YD
DSA 110	DarCole Synthetic Air 110	AASHTO M-154	1	1.000	5.00
DNL 785	DarCole Products DarNlok 785	AASHTO M-194 Type A	10	1.030	50.00

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.

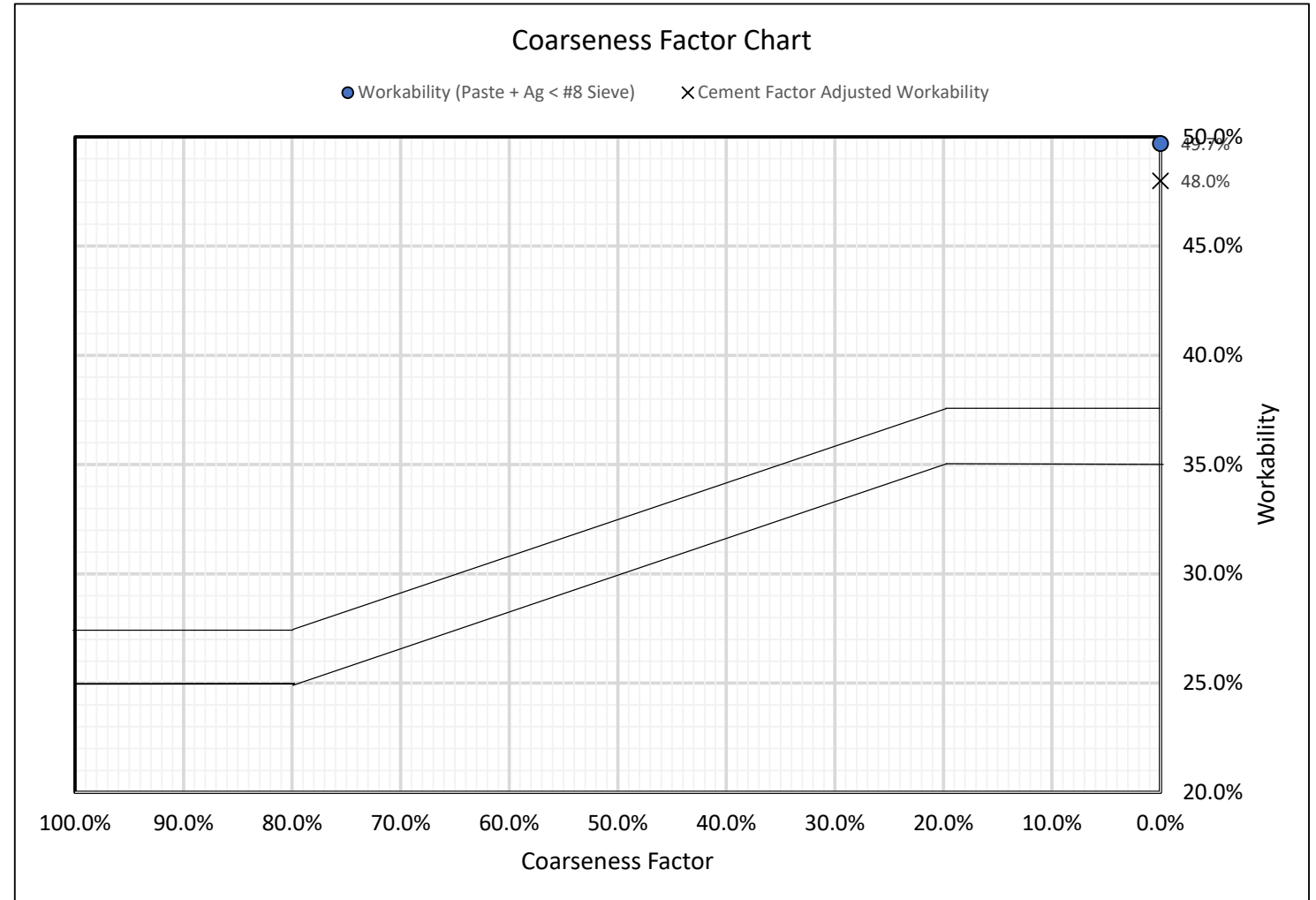


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Mix Analysis										
64.7% % Mortar			Paste & Mortar							
0.0% % Ag Retained on 3/8 Sieve			Vol	%Total	% Agg	%Mortar	%Paste			
50.3%	% Ag Passing 3/8 but Retained on #8 Sieve	+3/8	0.00	0.0%	0.0%					
0.0%	Coarseness Factor	3/8-#8	9.55	35.3%	50.3%					
49.7%	Workability (Paste + Ag < #8 Sieve)	+#8	9.55	35.3%	50.3%					
48.0%	Cement Factor Adjusted Workability	-#8	9.43	34.9%	49.7%	54.0%				
27.78	Modified Specific Surface	Mortar	17.46	64.7%						
30.04	Mix Suitability Factor	Paste	8.03	29.7%		46.0%				
Mix Suitability Factor Guidelines		Slump Range	Powder	2.67	9.9%		15.3%	33.3%		
16-20	Unstable, too Harsh	0	Air	1.35	5.0%		7.7%	16.8%		
20-22	Harsh Mixes-Heavy Vibration	0-2	Water	4.01	14.8%		22.9%	49.9%		
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	<b>Calculated for Total</b>							
26-28	Good Pumpable Concrete=Good Surface	4-5								
27-31	Pumpable, Lightweight, Flowing	>8								





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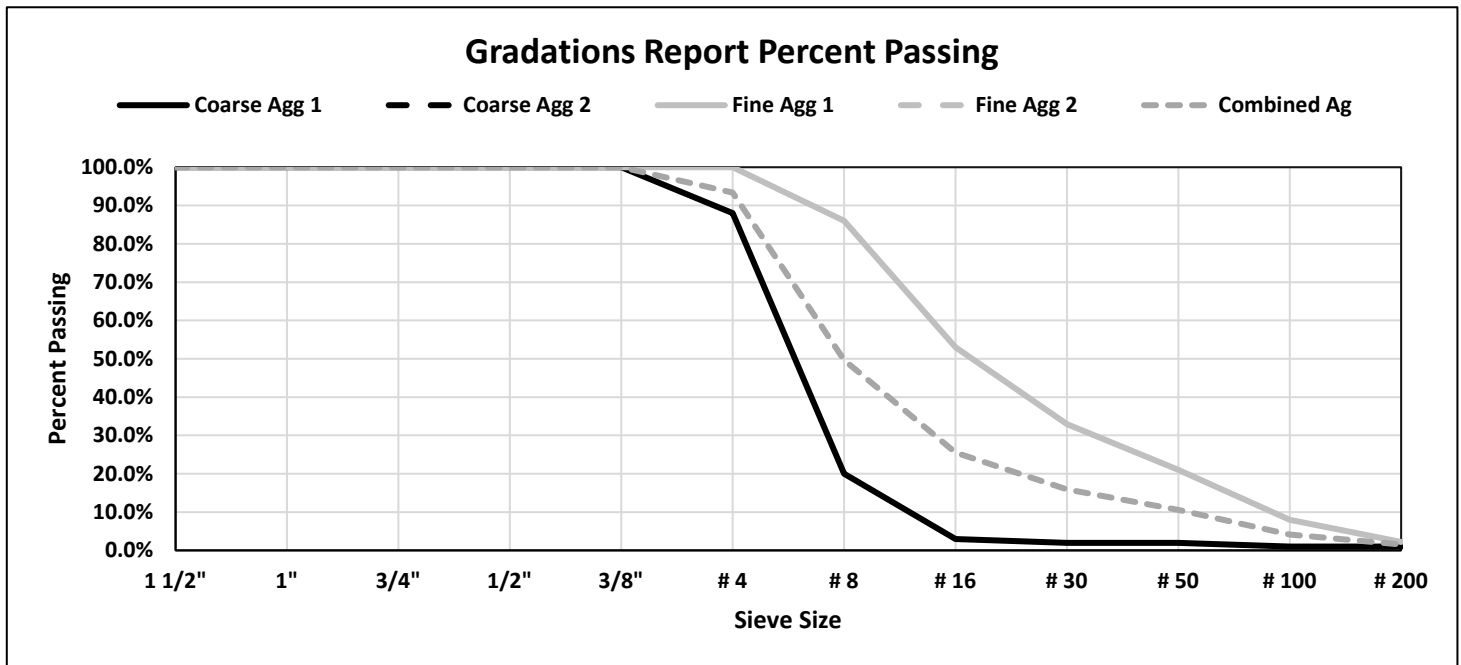
Customer:	Fc Mix	Mix Code:	UTFCM3KEXT81220
Description:	3000PSI with Air 3/8 Chips	Date:	8/12/2020

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"	100.0%	0.0%			100.0%	0.0%			100.0%	0.0%	100.0%	0.0%
1/2"	100.0%	0.0%			100.0%	0.0%			100.0%	0.0%	100.0%	0.0%
3/8"	100.0%	0.0%			100.0%	0.0%			100.0%	0.0%	100.0%	0.0%
# 4	88.0%	12.0%			100.0%	0.0%			93.4%	6.6%	95.4%	4.6%
# 8	20.0%	80.0%			86.0%	14.0%			49.7%	50.3%	64.7%	35.3%
# 16	3.0%	97.0%			53.0%	47.0%			25.5%	74.5%	47.6%	52.4%
# 30	2.0%	98.0%			33.0%	67.0%			15.9%	84.1%	40.9%	59.1%
# 50	2.0%	98.0%			21.0%	79.0%			10.5%	89.5%	37.1%	62.9%
# 100	1.0%	99.0%			8.0%	92.0%			4.1%	95.9%	32.6%	67.4%
# 200	1.0%	99.0%			2.2%	97.8%			1.5%	98.5%	20.8%	79.2%
# 325	0.0%	100.0%			0.0%	100.0%			0.0%	100.0%		
% Agg	55.0%				45.0%							

Percent Passing
Percent Retained

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

Coarse Aggregate 1      Kilgore 21-07014 #3/8 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"	0.0%		0.0%		0.0%	0.0%
1/2"	0.0%		0.0%		0.0%	0.0%
3/8"	0.0%		0.0%		0.0%	0.0%
# 4	12.0%		0.0%		6.6%	4.6%
# 8	68.0%		14.0%		43.7%	30.7%
# 16	17.0%		33.0%		24.2%	17.0%
# 30	1.0%		20.0%		9.5%	6.7%
# 50	0.0%		12.0%		5.4%	3.8%
# 100	1.0%		13.0%		6.4%	4.5%
# 200	0.0%		5.8%		2.6%	11.8%
% Agg	55.0%		45.0%			

Coarse Aggregate 1 Kilgore 21-07014 #3/8 Washed Rock

Coarse Aggregate 2

Fine Aggregate 1 Kilgore 22-09514 Washed Concrete Sand

Fine Aggregate 2

