



# CONCRETE MIX DESIGN

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

Customer:	Fc Mix
Description:	5000 PSI Pump

Mix Code:	UTFCM5KPUMP102020
Date:	10/20/2020

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

Compressive Strength:	5000 PSI
Mortar Content %:	66.6%
Paste Content %:	33.4%
Mix Suitability Factor:	33.26
Unit Weight:	142.1
Water/Cement ratio:	0.42

Material Description	Specification	Quantity (lbs)	Density	Volume	
<b>Cementious</b>					
Cement	Holcim 1P Blend	ASTM C-150	658	3.000	3.51
<b>Coarse Aggregates</b>					
Coarse Aggregate 1	Kilgore 21-07014 #3/8 Washed Rock	ASTM C-33	1575	2.564	9.84
<b>Fine Aggregates</b>					
Fine Aggregate 1	Kilgore 22-09514 Washed Concrete Sand	ASTM C-33	1328	2.618	8.13
	Water: 33.1 gallons		276.36	1.000	4.43
	Air Content 4.0%				1.08
Total:			3837		27.00

Admixture(s)	Material Description	Specification	OZ/CWT	Density	OZ/YD
DNL 785	DarCole Products DarNlok 785	AASHTO M-194 Type A	10	1.030	65.80

Reported by:	Ryan Risley-DarCole Products Inc.	Approval by:	
Date:	10/20/2020	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.

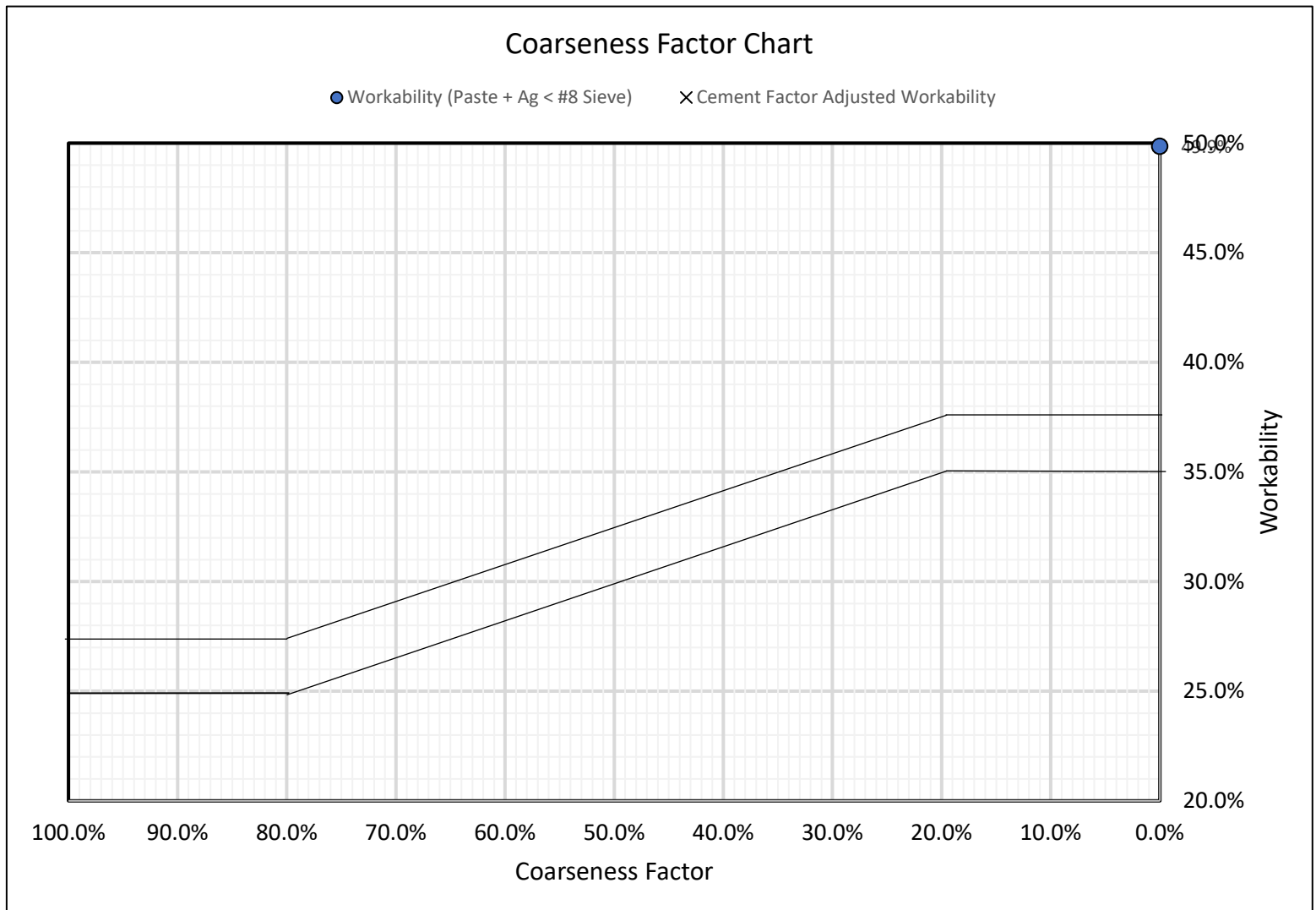


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Mix Analysis								
66.6% % Mortar		Paste & Mortar						
0.0% % Ag Retained on 3/8 Sieve			Vol	%Total	% Agg	%Mortar	%Paste	
50.1%	% Ag Passing 3/8 but Retained on #8 Sieve	+3/8	0.00	0.0%	0.0%			
0.0%	Coarseness Factor	3/8-#8	9.01	33.4%	50.1%			
49.9%	Workability (Paste + Ag < #8 Sieve)	+#8	9.01	33.4%	50.1%			
52.4%	Cement Factor Adjusted Workability	-#8	8.96	33.2%	49.9%	49.8%		
27.84	Modified Specific Surface	Mortar	17.98	66.6%				
33.26	Mix Suitability Factor	Paste	9.02	33.4%		50.2%		
Mix Suitability Factor Guidelines		Slump Range	Powder	3.51	13.0%		19.5%	39.0%
16-20	Unstable, too Harsh	0	Air	1.08	4.0%		6.0%	12.0%
20-22	Harsh Mixes-Heavy Vibration	0-2	Water	4.43	16.4%		24.6%	49.1%
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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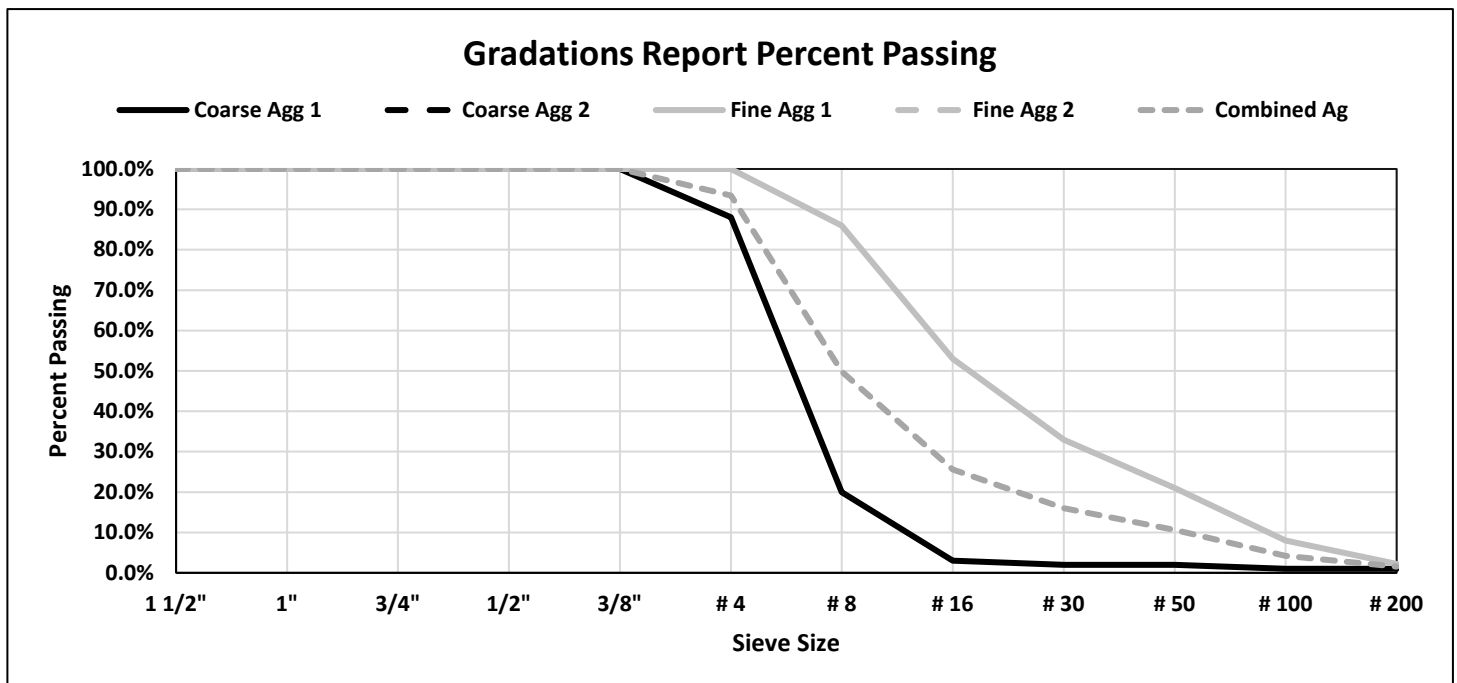
Customer:	Fc Mix	Mix Code:	UTFCM5KPUMP102020
Description:	5000 PSI Pump	Date:	10/20/2020

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%	95.6%	4.4%
# 8	20.0%	80.0%			86.0%	14.0%			49.9%	50.1%	66.6%	33.4%
# 16	3.0%	97.0%			53.0%	47.0%			25.6%	74.4%	50.5%	49.5%
# 30	2.0%	98.0%			33.0%	67.0%			16.0%	84.0%	44.1%	55.9%
# 50	2.0%	98.0%			21.0%	79.0%			10.6%	89.4%	40.5%	59.5%
# 100	1.0%	99.0%			8.0%	92.0%			4.2%	95.8%	36.2%	63.8%
# 200	1.0%	99.0%			2.2%	97.8%			1.5%	98.5%	23.3%	76.7%
# 325	0.0%	100.0%			0.0%	100.0%			0.0%	100.0%		
% Agg	54.8%				45.2%							

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%	4.4%
# 8	68.0%		14.0%		43.6%	29.0%
# 16	17.0%		33.0%		24.2%	16.1%
# 30	1.0%		20.0%		9.6%	6.4%
# 50	0.0%		12.0%		5.4%	3.6%
# 100	1.0%		13.0%		6.4%	4.3%
# 200	0.0%		5.8%		2.6%	12.9%
% Agg	54.8%		45.2%			

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

