

Concrete Intersections and Mixes in New York State

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ACPA
Asset Management
Intersections
Mixes

*Town Costs
Larger?
Competition
Investment Strategy
Time to Failure
Healthy*









Paving Equipment









































































Mix Design

- *Control Water*
- *Know Combined Gradation*
- *Limit Paste Fraction*
- *Air*
- *Healthy SCM Dose*
- *Macrofibers*











This spreadsheet is locked to avoid inadvertent mistakes

The input cells are in green

This spreadsheet can be used to optimize gradations using the 8-18, FHWA 0.45, Shilstone, and the Tarantula Curve methods

As the cells in green are changed, other parameters are automatically updated

This spreadsheet could also be used to calculate the % paste content during the mixture design phase

If you have any questions on the spreadsheet or if you need the password to unlock the spreadsheet, please contact

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Sieve Size, inches	JMF (Combined % Passing)
2"	99.9
1 1/2"	99.9
1"	97.6
3/4"	90.2
1/2"	65.7
3/8"	53.9
4	36.3
8	31.5
16	23.5
30	14.3
50	7.2
100	3.0
200	0.9

Northland NYSTA Class C					
Sieve Size, in	Fine 1 Agg	Fine 2 Agg	Inter Agg	Coarse Agg	Combined % Passing
2"	100		100	100	100
1.5"	100		100	100	100
1"	100		100	94	98
3/4"	100		100	75	90
1/2"	100		95	16	66
3/8"	100		65	6	54
No. 4	100		3	2	36
No.8	89		1	1	31
No.16	67		0	0	24
No.30	41		0	0	14
No.50	21		0	0	7
No.100	9		0	0	3
No.200	3		0	0	1
Weights					
%'s	35%		26%	39%	100%

VOLUME OF PASTE CALCULATION

Absolute volume for 1 cubic yard					Laboratory Batches (for 1 cubic foot)	
	Batch Weights wt.cu/yd	Specific Gravity	Absolute Volume cu.yd	Percent of Total Volume	Batch Weights (lb)	Absolute Volume(cf)
Cement	484.0	3.15	2.46	9.11	17.93	0.09
Pozzolan	121.0	2.92	0.66	2.46	4.48	0.02
Fine Agg.	1016.0	2.61	6.24	23.09	37.6	0.23
Coarse Agg.	0.0	2.61	0.00	0.00	0.00	0.00
Coarse Agg.	1895.0	2.61	11.64	43.07	70.19	0.43
Water	266.0	1.00	4.26	15.78	9.85	0.16
w/c ratio						
% Air	6.5	0.00	1.755	6.50		0.07
Total volume of known ingredients			27.02	100.00	Unit Weight 140.1	1.00

0.44

PERCENT MORTAR AND PASTE

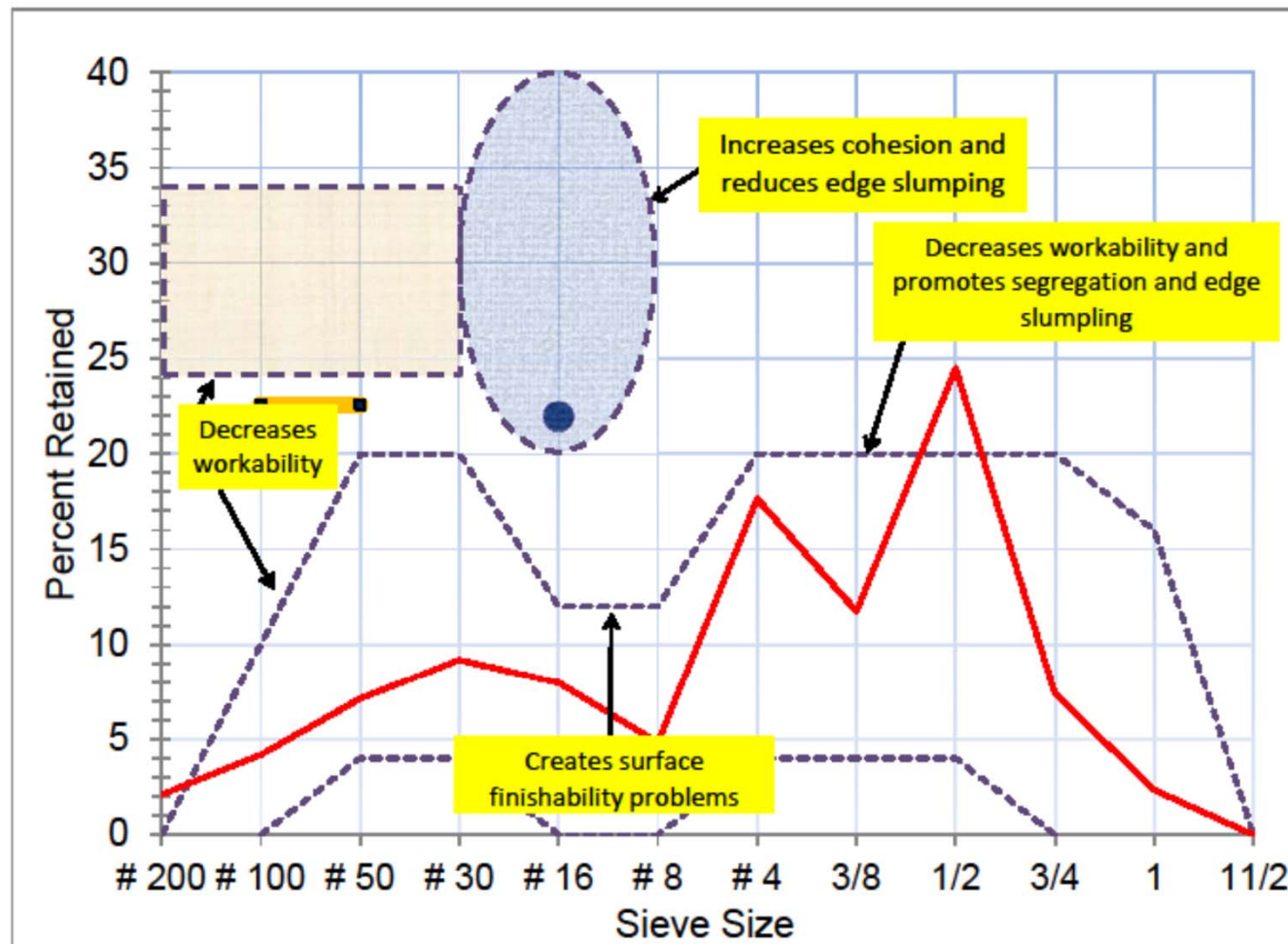
1 cu.yd.

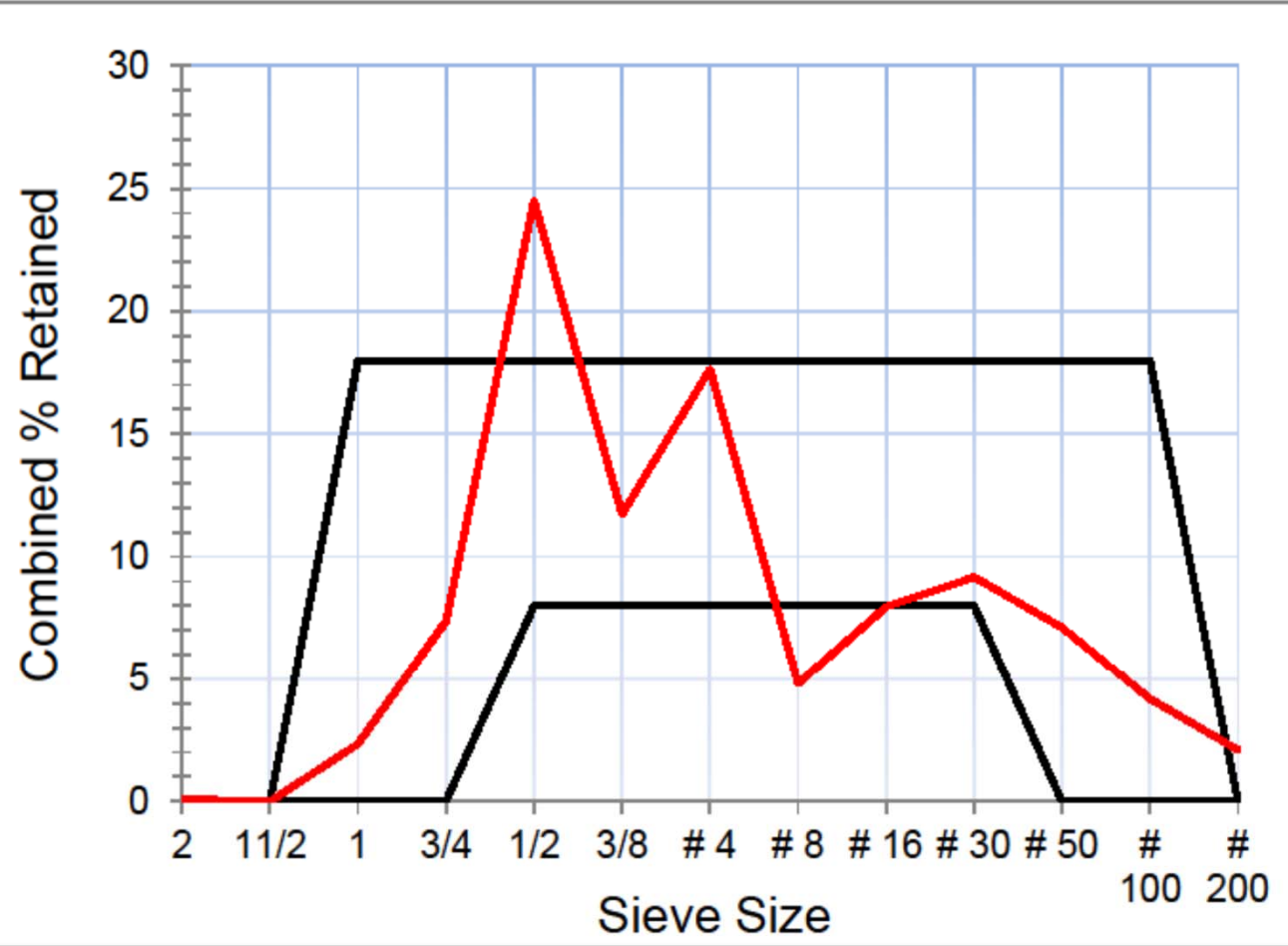
% Mortar = 50.4

% Paste = 27.3

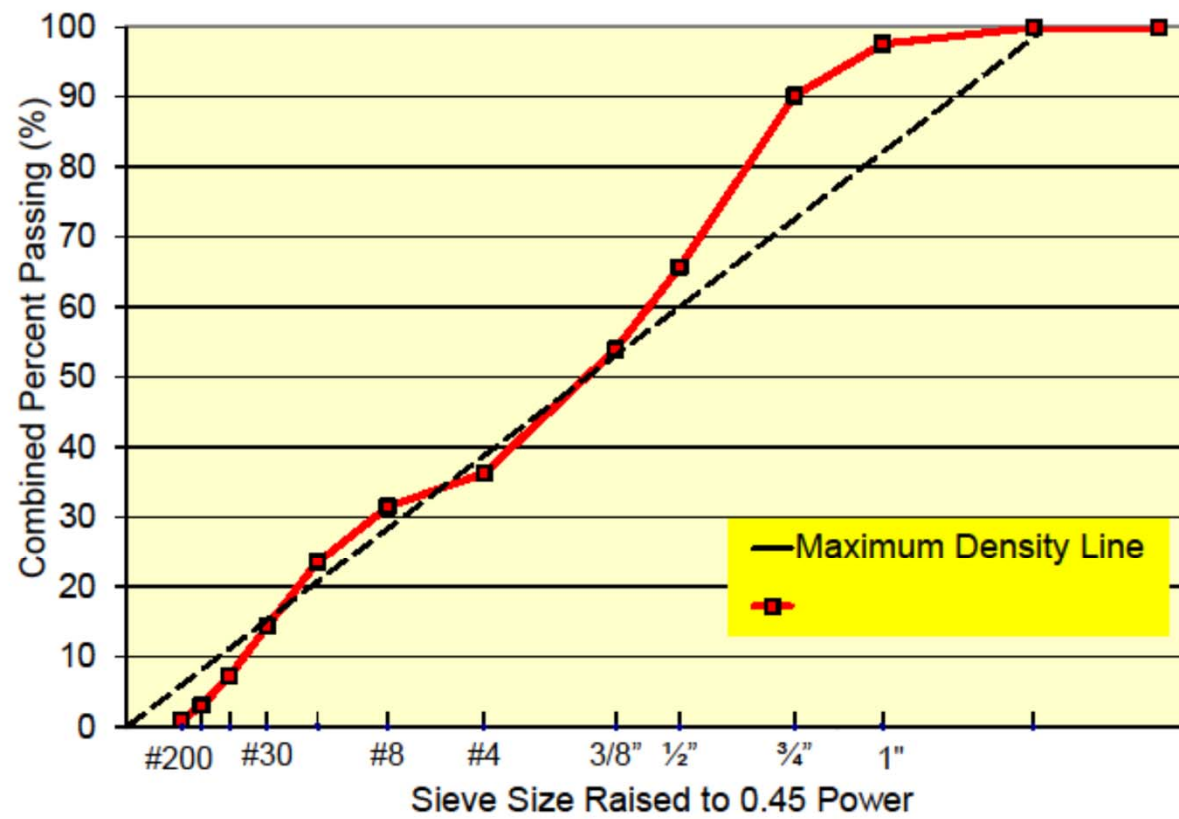
Is this < 25%??

(for lowering the cracking tendency of concrete)



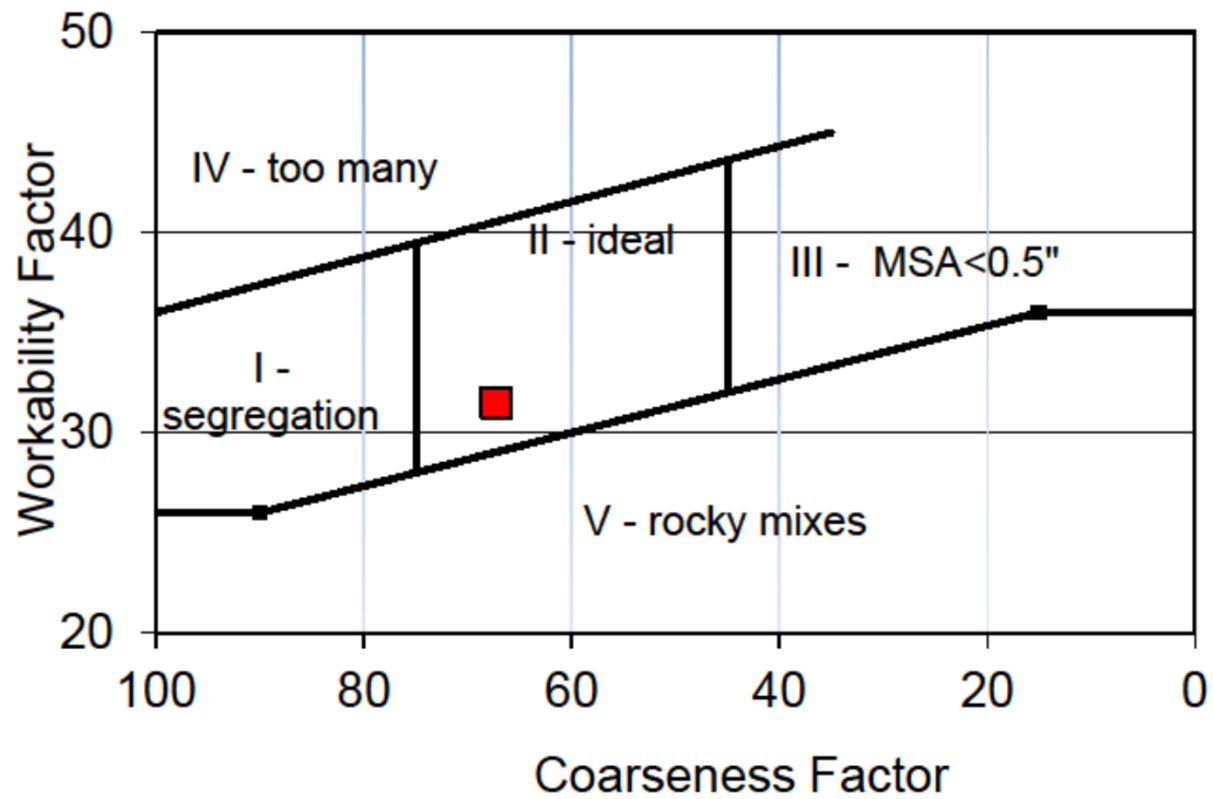


0.45 Power Chart



C.F
Cumm % Ret 3/8
Cumm % Ret #8

W.F
Combined %
Pass #8



Essential Concrete Pavement Websites

acpa.org

apps.acpa.org

wikipave.org

cptechcenter.org

resources.acpa.org

concretepavements.org

fhwa.dot.gov/pavement

pavementdesigner.org

nrmca.org

paveahead.com

pna-inc.com/tcp

Questions? Discussion? Comment?

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