BUILDEX
Haydite *Expanded Shale*
Lightweight Aggregate

Aggregate Physical Properties

Buildex Expanded Shale Lightweight Aggregate
New Market Missouri Plant

Our New Market plant is located one mile south of the town of New Market, Missouri on State Highway 371. This plant is located near a large deposit of Weston shale that is used in production.

Table 1
Typical Physical Properties of Production Sizes
Buildex New Market MO Plant

Production Size	Specific Gravity (a)	Density, lb/cu ft (b)	Percent Absorption (c)
5/8" x 3/8"	1.10	38	18
3/8" x 1/4"	1.15	42	15
1/4" x 1/8"	1.20	44	12
1/8" x 0	1.80	58	8

(a) ASTM C 127 / C 128, bulk specific gravity.
(b) ASTM C 29, loose unit weight (density).
(c) ASTM C 127 / C 128, 24 hour absorption.

Table 2
Typical Gradation of Production Sizes
Buildex New Market MO Plant

Cumulative Percent Retained

Sieve	5/8" x 3/8"	3/8" x 1/4"	1/4" x 1/8"	1/8" x 0
3/4"	0			
1/2"	22	0		
3/8"	82	3	0	
No. 4	98	95	22	0
No. 8	99	99	96	12
No. 16			99	43
No. 30				67
No. 50				80
No. 100				86

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These production sizes can be sold “as is,” but more often are blended before loading to meet appropriate industry specifications.

For producing pumpable structural lightweight concrete, the coarse blends like 1/2" x No. 4 and 3/8” x No. 8 are vacuum saturated at our plant prior to shipment. The fines (3/8" x 0 and 1/4" x 0) are pre-wetted while stockpiled at the concrete producers' plant.

Table 3
Typical Physical Properties of ASTM Blends
Buildex New Market MO Plant

ASTM Blend	Specific Gravity (a)	Density, lb/cu ft (b)	Percent Absorption (c)	Saturated Density, lb/cu ft
3/4" x No. 4	1.15	43	30	54 (d) (e)
1/2" x No. 4	1.15	43	25	54 (d)
3/8" x No. 8	1.3	44	20	54 (d) (e)
3/8" x 0	1.45	54	10	65 (f)
1/4" x 0	1.45	54	10	65 (f)

(a) ASTM C 127 / C 128, bulk specific gravity.
(b) ASTM C 29, loose unit weight (density) @ normal 6% shipping moisture content.
(c) ASTM C127 / C 128, 24 hour water absorption at ambient pressure. Please note that the 24 hour absorption figure is not appropriate for use in determining moisture content of Buildex used in pumped concrete.
(d) Unit Weight (density) when vacuum saturated at Buildex plant for concrete pump placement.
(e) 3/4" x No. 4 and 3/8" x No. 8 are available vacuum saturated by advance special order only.
(f) The 3/8" x 0 and 1/4" x 0 fines are not available vacuum saturated; values for stockpile ambient saturated density are shown for these materials.

Buildex aggregate is produced to meet or exceed applicable industry standards, including ASTM C330 "Standard Specification for Lightweight Aggregates for Structural Concrete" and ASTM C 331 "Standard Specification for Lightweight Aggregates for Concrete Masonry Units."

Table 4 - Typical Blended Aggregate Gradation
Lightweight Aggregates for Structural Concrete
ASTM C 330 - 3/4" x No. 4
Buildex New Market MO Plant

Sieve	Percent Retained		Percent Passing	
	Typical Gradation	3/4" x No. 4 Specification*	Typical Gradation	3/4" x No. 4 Specification*
1"	0	0	100	100
3/4"	0	0-10	100	90-100
1/2"	17	---	83	---
3/8"	60	50-90	40	10-50
No. 4	97	85-100	3	0-15
No. 8	99	---	1	---

*ASTM C330 "Standard Specification for Lightweight Aggregates for Structural Concrete".

Table 5 - Typical Blended Aggregate Gradation
Lightweight Aggregates for Structural Concrete
ASTM C 330 - 1/2" x No. 4
Buildex New Market MO Plant

Sieve	Percent Retained		Percent Passing	
	Typical Gradation	1/2" x No. 4 Specification*	Typical Gradation	1/2" x No. 4 Specification*
3/4"	0	0	100	100
1/2"	9	0-10	91	90-100
3/8"	35	20-60	65	40-80
No. 4	96	80-100	4	0-20
No. 8	99	90-100	1	0-10

*ASTM C330 "Standard Specification for Lightweight Aggregates for Structural Concrete"

Table 6 - Typical Blended Aggregate Gradation
Lightweight Aggregates for Structural Concrete
ASTM C 330 - 3/8" x No. 8
Buildex New Market MO Plant

Sieve	Percent Retained		Percent Passing	
	Typical Gradation	3/8" x No. 8 Specification*	Typical Gradation	3/8" x No. 8 Specification*
1/2"	0	0	100	100
3/8"	3	0-20	97	80-100
No. 4	85	60-95	15	5-40
No. 8	99	80-100	1	0-20
No. 16	99	90-100	1	0-10

*ASTM C330 "Standard Specification for Lightweight Aggregates for Structural Concrete"

Table 7 - Typical Blended Aggregate Gradation
Lightweight Aggregates for Structural Concrete
ASTM C 330 - 3/8" x 0
Buildex New Market MO Plant

Sieve	Percent Retained		Percent Passing	
	Typical Gradation	3/8" x 0 Specification*	Typical Gradation	3/8" x 0 Specification*
1/2"	0	0	100	100
3/8"	0	0-10	100	90-100
No. 4	12	10-35	88	65-90
No. 8	45	35-65	55	35-65
No. 16	65	---	35	---
No. 30	80	---	20	---
No. 50	88	75-90	12	10-25
No. 100	92	85-95	8	5-15

*ASTM C330 "Standard Specification for Lightweight Aggregates for Structural Concrete".

Table 8 - Typical Blended Aggregate Gradation
Lightweight Aggregates for Structural Concrete
ASTM C 330 - 1/4" x 0
Buildex New Market MO Plant

Sieve	Percent Retained		Percent Passing	
	Typical Gradation	1/4" x 0 Specification*	Typical Gradation	1/4" x 0 Specification*
3/8"	0	0	100	100
No. 4	5	0-15	95	85-100
No. 8	30	---	70	---
No. 16	55	20-60	45	40-80
No. 30	74	---	26	---
No. 50	84	65-90	16	10-35
No. 100	89	75-95	11	5-25

*ASTM C330 "Standard Specification for Lightweight Aggregates for Structural Concrete"

Table 9 - Typical Blended Aggregate Gradation
Lightweight Aggregates for Concrete Masonry
ASTM C 331 - 1/4" x 0
Buildex New Market MO Plant

Sieve	Typical Cumulative Grading	Typical Individual Grading	Suggested Individual Grading*
3/8"	0	0	0-2
No. 4	5	5	0-10
No. 8	30	25	15-35
No. 16	55	25	15-35
No. 30	74	19	5-20
No. 50	84	10	5-15
No. 100	89	5	5-15
Pan	100	11	8-20

*ASTM C331 "Standard Specification for Lightweight Aggregates for Concrete Masonry Units".