

Semco Stone ASTM Stone Testing Results













>> BALTIC BUFF

COLOR/CHARACTERISTICS: A natural sandstone buff with brown swirls

SPECIFICATIONS:

ASTM C 97

OVEN DRY DENSITY: 154.4 lb/ft³ CLASS I SANDSTONE SSD DENSITY: 142.7 lb/ft³ CLASS I SANDSTONE

SPECIFIC GRAVITY: 2.16
ABSORPTION: 5.93% CLASS I SANDSTONE

ASTM C 99

MODULUS OF RUPTURE: Perpendicular & Dry 950 psi

Parallel & Dry 500 psi Perpendicular & Wet 710 psi Parallel & Wet 410 psi

ASTM C 170

COMPRESSIVE STRENGTH: Perpendicular & Dry 12,900 psi Parallel & Dry 7,500 psi

Perpendicular & Wet 11,100 psi
Parallel & Wet 7,000 psi

ASTM C 153

ABRASION RESISTANCE OF DIMENSION STONE SUBJECTED TO FOOTTRAFFIC USING A ROTARY PLATFORM:

Initial Mass (Average): 217.15

Mass after 1,000 revolutions (Average): 199.53

CLASS | SANDSTONE
Index Abrasion Resistance (Average): 4.51

CLASS | SANDSTONE

ASTM C 666

FREEZE/THAW TESTING: These results are availabe upon request. It is a long report so did not include on this particular page due to lack of space.

^{*}This information is based on test results by CTL Group





>> BALTIC BUFF FREEZE / THAW TESTING RESULTS

ASTM C215, DYNAMIC MODULUS OF ELASTICITY DURING ASTM C666 FREEZE/THAW TESTING:

Number of Cycles	0	33	63	99	135	171	207	303

SAMPLE DIMENSIONS

Length, m	0.282	0.282	0.282	0.282	0.282	0.282	0.282	0.282
Width, m	0.078	0.078	0.078	0.078	0.078	0.078	0.078	0.078
Depth, m	0.077	0.077	0.077	0.077	0.077	0.077	0.077	0.077
Cross-Sectional Area, m²	0.006	0.006	0.006	0.006	0.006	0.006	0.006	0.006
Poisson's Ration (assumed)	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Radius of Gyration, K	0.022	0.022	0.022	0.022	0.022	0.022	0.022	0.022
K/L	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Correction Factor per Table 1 of ASTM C215	1.49	1.49	1.49	1.49	1.49	1.49	1.49	1.49
Constant per Eq. 1 of ASTM C215	888.1	888.1	888.1	888.1	888.1	888.1	888.1	888.1
Mass of Test Sample, kg	3.83	3.84	3.84	3.84	3.85	3.85	3.85	3.86

NON-DESTRUCTIVE EVALUATION PER ASTM C215

Average Transverse Resonant Frequency, Hz	1313	1223	1236	1236	1236	1236	1243	1230
Dynamic Modulus of Elasticity	5.9	5.1	5.2	5.2	5.2	5.2	5.3	5.2

NOTES:

- 1. As requested, Poisson' Ration was assumed to be 0.2 based on internet research.
- 2. This report represents specifically the samples submitted.
- 3. This report may not be reproduced except in its entirety.





>> BLACK HILLS RUSTIC

COLOR/CHARACTERISTICS: Brown and rust with red tones

FEATURES:

Full Veneer: 100% Seam-face/Bed-face

ThinCut™ Veneer: 50% seam-face, 50% bed-face

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 155.34 lb/ft³ ABSORPTION: 3.0%

ASTM C 170

COMPRESSIVE STRENGTH: 23,814 psi CLASS III QUARTZITE

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 3,065 psi

ASTM C 97

BULK SPECIFIC GRAVITY 2.561 CLASS II QUARTZITIC SANDSTONE



^{*}This information is based on test results by Pacific Materials Laboratory



>>> BLUE RIVER

COLOR/CHARACTERISTICS: Gray with some variegation

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 880 FLEXURAL STRENGTH:	Perpendicular: 2	.,304 Par	allel: 2,303
ASTM C 170 COMPRESSIVE STRENGTH:	Perpendicular Parallel	Area 4.512 Area 4.553	PS 17,778 PS 19,034
ASTM C 97 SPECIFIC GRAVITY: 2.68	ABSORPTION:	0.34%	

^{*}This information is based on test results by PSI, Inc. in St. Louis, MO.





>>> BRENTWOOD

COLOR/CHARACTERISTICS: Range of chocolate to light brown, buff and gray. Some pieces have a beautiful texture resembling wood rings on a tree

FEATURES: Natural bed heights that range between 4" - 9" in height, with the split-face and natural edge exposed

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 151.55 lb/ft³

SPECIFIC GRAVITY: 2.429

ABSORPTION: 1.81%

CLASS II QUARTZITIC SANDSTONE

CLASS III QUARTZITE

ASTM C 99

MODULUS OF RUPTURE: 1,554 psi

CLASS III QUARTZITE

10.71 Mpa

ASTM C 170

COMPRESSIVE STRENGTH: 11,403 psi CLASS III QUARTZITE

78.61 Mpa

ASTM C 241

ABRASION RESISTANCE: 52.58

CLASS III QUARTZITE

ASTM C 880

FLEXURAL STRENGTH:

Perpendicular: 3,065 psi

Parallel: 21.13 Mpa

X-RAY DIFFRACTION MINERALOGICAL ANALYSIS

FREE SILICA CONTENT: 93%

CLASS II QUARTZITIC SANDSTONE

STATIC COEFFICIENT OF FRICTION DRY: 1.21 WET: .94





>> CANADIAN LEDGE

COLOR/CHARACTERISTICS: Class III Quartzitic Sandstone with a range of colors from light buff to dark brown and rust shades

FEATURES:

3" - 5" Heights, Random Lengths 50% snapped to 50% natural edge

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 155.43 lb/ft³ SPECIFIC GRAVITY: 2.561 ABSORPTION: 1.6%

ASTM C 170

COMPRESSIVE STRENGTH: 23,814 psi

ASTM C 880

AVERAGE FLEXURAL STRENGTH: 3,065 psi

STATIC COEFFICIENT OF FRICTION: DRY: 1.21 WET: .94





>> CASTLEWOOD

COLOR/CHARACTERISTICS: Buff colored limestone

FEATURES:

Uniform heights of 4"-6" or 13"-15"Average depth is 24"-30"Average length: 4 ft. -5 ft.

SPECIFICATIONS:

ASTM C 97

SPECIFIC GRAVITY: Dry: 2.542 Wet: 2.684

ABSORPTION: 2.1%

FREEZE/THAW SOUNDESS RATIO: 98% Retained

*This information is based on test results by Kansas Department of Transportation





>> CEDAR RIDGE

COLOR/CHARACTERISTICS: Light gray with light buff to white mottling

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97 SPECIFIC GRAVITY: 2.62	ABSORPTION:	2.22%	
ASTM C 170 COMPRESSIVE STRENGTH:	Perpendicular Parallel	Area 4.512 Area 4.424	PS 8,390 PS 11,556
ASTM C 880 FLEXURAL STRENGTH:	Perpendicular: 1	I,160 Para	allel: 1,183

^{*}This information is based on test results by PSI, Inc. in St. Louis, MO.





>> CHESTNUT HILL

COLOR/CHARACTERISTICS: Brown and rust with red tones

FEATURES:

Full Veneer: 100% Seam-face/Bed-face

ThinCut™ Veneer: 50% Seam-face, 50% Bed-face

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 155.34 lb/ft³ ABSORPTION: 3.0%

ASTM C 170

COMPRESSIVE STRENGTH: 23,814 psi CLASS III QUARTZITE

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 3,065 psi

ASTM C 97

BULK SPECIFIC GRAVITY 2.561 CLASS II QUARTZITIC SANDSTONE



^{*}This information is based on test results by Pacific Materials Laboratory



>> DEER HAVEN

COLOR/CHARACTERISTICS: Light tan to brown with some gray tones

FEATURES:

100% Bed-face material with random heights from 3" to 6" Random lengths

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

BULK SPECIFIC GRAVITY 2.387 CLASS II QUARTZITIC SANDSTONE BULK SPECIFIC GRAVITY, SSD 2.459
APPARENT SPECIFIC GRAVITY 2.5718

ABSORPTION: 3.0%

ASTM C 170

COMPRESSIVE STRENGTH: 7,500 psi CLASS III QUARTZITE

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 3,065 psi



^{*}This information is based on test results by Pacific Materials Laboratory



>> EASTON

COLOR/CHARACTERISTICS: Range of light buff to gold

FEATURES:

100% Seam-face Random lengths

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

SPECIFIC GRAVITY: 2.67 ABSORPTION: 1.88% DENSITY: 166.3 lb/ft³

ASTM C 99

MODULUS OF RUPTURE:

Paralled & Dry

1,191 psi

ASTM C 170

COMPRESSIVE STRENGTH:

Perpendicular & Dry Parallel & Dry 11,633 psi 6,366 psi

ASTM C 880

FLEXURAL STRENGTH:

Paralled & Dry

1,030 psi



^{*} ASTM C97 and ASTM C170 is based on test results by PSI, Inc. in St. Louis, MO. ASTM C99 and ASTM C880 is based on test results by Geotechnology, Inc. in St. Louis, MO.



>> FOND DU LAC

COLOR/CHARACTERISTICS: Range of light buff to light gray.

FEATURES: Range of heights from 2" to 6" with random lengths up to 40" 100 % split-face material

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 167.3 (pcf) SPECIFIC GRAVITY: 2.683 ABSORPTION: 0.6%

ASTM C 99

MODULUS OF RUPTURE: 3,390 PARALLEL MODULUS OF RUPTURE: 3,430 PERPENDICULAR

ASTM C 170

COMPRESSIVE STRENGTH: 19,080 (psi) PARALLEL COMPRESSIVE STRENGTH: 24,310 (psi) PERPENDICULAR

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 2,470 (psi) Parallel: 2,470 (psi)





>> GUNSMOKE GRAY

COLOR/CHARACTERISTICS: Gray with darker variegation

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

WEIGHT: 145 per cu. ft., so depending what thickness you are looking at using, will determine what it correlates to on a square foot basis.

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

SPECIFIC GRAVITY: 2.121 ABSORPTION: 6.13%

ASTM C 99*

MODULUS OF RUPTURE: 801 psi

ASTM C 170*

COMPRESSIVE STRENGTH: 8,138 psi

Testing was performed in general accordance with the following ASTM Standards. This information is based in October 2003 test results by Construction Consulting & Testing, Inc.

*C 99 and C 170 were performed under the dry condition, perpendicular to the bedding planes.





>> MOJAVE LEDGE

COLOR/CHARACTERISTICS: Wide range of color & texture, including white, tans, browns, golds and rusts

FEATURES:

Up to 50% may be angled slightly and/or dramatically. Random heights 1.5" to 3". Random lengths 8" to 20" $\,$

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

BULK SPECIFIC GRAVITY: 2.387 CLASS II QUARTZITIC SANDSTONE

DENSITY: 155.34 lbs./ft³

ABSORPTION: 3.0%

ASTM C 170

COMPRESSIVE STRENGTH: 7,500 psi CLASS III QUARTZITE



^{*}This information is based on test results by Pacific Materials Laboratory



>> MOUNTAIN RIDGE

COLOR/CHARACTERISTICS: Gray, blue & buff tones

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut $^{\text{TM}}$

SPECIFICATIONS:

ASTM C 170

COMPRESSIVE STRENGTH: Perpendicular PSI (gross) 12,547

Parallel PSI (gross) 12,310

ASTM C 97

SPECIFIC GRAVITY: 2.61 ABSORPTION: 4.0%

*This information is based on test results by PSI, Inc. in St. Louis, MO.





>> PINE RIDGE

COLOR/CHARACTERISTICS: Brown and rust with red tones

FEATURES:

Full Veneer: 100% Seam-face/Bed-face

ThinCut[™] Veneer: 50% Seam-face, 50% Bed-face

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 161.77 lb/ft³ SPECIFIC GRAVITY: 2.592 ABSORPTION: 0.59%





>>> RUSTIC BLUE

COLOR/CHARACTERISTICS: Light blue/gray with some buff variegation

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 880 FLEXURAL STRENGTH:	Perpendicular: 1	,160 Par	allel: 1,183
ASTM C 170 COMPRESSIVE STRENGTH:	Perpendicular Parallel	Area 4.512 Area 4.424	PS 8,390 PS 11,556
ASTM C 97 SPECIFIC GRAVITY: 2.62	ABSORPTION:	2.22%	

 $^{{}^{*}\}text{This}$ information is based on test results by Geotechnology, Inc. in St. Louis, MO.





>>> RUSTIC CEDAR

COLOR/CHARACTERISTICS: Buff with some blue and gray veining

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 154.6 lb/ft³ ABSORPTION: 3.54%

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COMPRESSIVE STRENGTH

DRY CONDITION

ASTM C 880

FLEXURAL STRENGTH

Parallel: 17,002 psi Perpendicular: 21,591 psi

DRY CONDITION

Parallel: 1,743 psi Perpendicular: 922 psi

WET CONDITION

Parallel: 11,919 psi Perpendicular: 19,787 psi

WET CONDITION

Parallel: 1,248 psi Perpendicular: 834 psi

Testing was performed in general accordance with the following ASTM Standards. This information is based on test results by The Council of North America, Inc.





>> STONEYBROOK

COLOR/CHARACTERISTICS:

100% SPLIT FACE LIMESTONE: Gray with a touch of blue & mauve 100% BED FACE LIMESTONE: Range of lavenders, browns, gray & mauve

FEATURES: 100 % Split-face - Range of heights from 2" to 6" with random lengths up to 40"
100% Bed-face - 6", 8", 12" and 18" heights with random lengths up to 40"
(ThinCut™ cannot exceed 10.5" heights)

Available in Full Veneer & ThinCut $^{\!\top\!\mathrm{M}}$

SPECIFICATIONS:

ASTM C 97

DENSITY: 176.5 (pcf) SPECIFIC GRAVITY: 2.83 ABSORPTION: 0.2%

ASTM C 99

MODULUS OF RUPTURE: 2,630 PARALLEL MODULUS OF RUPTURE: 2,980 PERPENDICULAR

ASTM C 170

COMPRESSIVE STRENGTH: 24,500 (psi) PARALLEL COMPRESSIVE STRENGTH: 21,030 (psi) PERPENDICULAR

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 1,660 (psi) Parallel: 1,890 (psi)





>> TIMBER CREEK

COLOR/CHARACTERISTICS: Buff with some light and dark gray veining

FEATURES:

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut $^{\text{TM}}$

SPECIFICATIONS:

ASTM C 97

DENSITY: 166.5 lb/ft³ ABSORPTION: 2.668%

ASTM C 170

DRY CONDITION

COMPRESSIVE STRENGTH

Perpendicular: 22,600 psi

Testing was performed in general accordance with the following ASTM Standards. This information is based on test results by Geotechnology, Inc. in St. Louis, MO.





>> WEATHERED FIELDSTONE

COLOR/CHARACTERISTICS: Weathered Fieldstone is a naturally occurring sandstone material, weathered naturally by the effects of its environment. Harvested from the hills of Southern Missouri and Northern Arkansas, it is then shipped to our fabrication facility in Perryville Missouri, where it is fabricated into building stone veneer, full bed depth and ThinCutTM veneer.

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in ThinCut $^{\text{TM}}$

SPECIFICATIONS:

ASTM C 97

SPECIFIC GRAVITY: 2.121 ABSORPTION: 6.13%

ASTM C 99*

MODULUS OF RUPTURE: 801 psi

ASTM C 170*

COMPRESSIVE STRENGTH: 8,138 psi

Testing was performed in general accordance with the following ASTM Standards. This information is based on test results by Construction Consulting & Testing, Inc.

*C 99 and C 170 were performed under the dry condition, perpendicular to the bedding planes.





>> WESTON CREAM

COLOR/CHARACTERISTICS: Light buff cream colored

FEATURES:

Random Height: 100% Split-face

Dimensional: Sawn heights, split-face and ends

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 135.61 lb/ft³ SPECIFIC GRAVITY: 2.173 ABSORPTION: 6.51%

ASTM C 99

MODULUS OF RUPTURE: 883 psi 6.09 Mpa

ASTM C 170

COMPRESSIVE STRENGTH: 5,686 psi 39.20 Mpa

ASTM C 241

ABRASION RESISTANCE: 5.06

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 1,053 psi Parallel: 7.26 Mpa





>> WESTON SHELL

COLOR/CHARACTERISTICS: Shades of buff to tan. Sea shells have been preserved for millions of years in this unique limestone

FEATURES:

100% Split-face with random heights from 4" to 12" (ThinCut TM cannot exceed 10.5") Random lengths from 10" to 30"

Available in Full Veneer & Thin Cut^{TM}

SPECIFICATIONS:

ASTM C 97

DENSITY: 132 lbs./cft. SPECIFIC GRAVITY: 2.118 ABSORPTION: 5.4 %

ASTM C 170

COMPRESSIVE STRENGTH: 2,964 psi





>> WILLOWBROOK BLUE

COLOR/CHARACTERISTICS: Willowbrook Blue is blue/gray in color with some brown and rust variegation

FEATURES:

50% Bed-face, 50% Split-face Heights: 3" – 7" Lengths: Random

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 159.83 lb/ft³ CLASS II QUARTZITIC SANDSTONE SPECIFIC GRAVITY: 2.561

ABSORPTION: 0.97%

CLASS III QUARTZITE

ASTM C 99

MODULUS OF RUPTURE: 2,639 psi CLASS III QUARTZITE 18.19 Mpa

ASTM C 170

COMPRESSIVE STRENGTH: 23,814 psi CLASS III QUARTZITE 164.17 Mpa

ASTM C 241

ABRASION RESISTANCE: 52.58 CLASS III QUARTZITE

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 3,065 psi Parallel: 21.13 Mpa

X-RAY DIFFRACTION MINERALOGICAL ANALYSIS

FREE SILICA CONTENT: 93% CLASS II QUARTZITIC SANDSTONE

STATIC COEFFICIENT OF FRICTION DRY: 1.21 WET: .94





>> WILLOWBROOK BROWN

COLOR/CHARACTERISTICS: Willowbrook Brown has shades of brown & tan, speckled with dark brown

FEATURES:

50% Bed-face, 50% Split-face Heights: 3" – 7" Lengths: Random

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

DENSITY: 159.83 lb/ft³ CLASS II QUARTZITIC SANDSTONE SPECIFIC GRAVITY: 2.561

ABSORPTION: 0.97% CLASS III QUARTZITE

ASTM C 99

MODULUS OF RUPTURE: 2,639 psi CLASS III QUARTZITE 18.19 Mpa

ASTM C 170

COMPRESSIVE STRENGTH: 23,814 psi CLASS III QUARTZITE 164.17 Mpa

ASTM C 241

ABRASION RESISTANCE: 52.58 CLASS III QUARTZITE

ASTM C 880

FLEXURAL STRENGTH: Perpendicular: 3,065 psi Parallel: 21.13 Mpa

X-RAY DIFFRACTION MINERALOGICAL ANALYSIS

FREE SILICA CONTENT: 93% CLASS II QUARTZITIC SANDSTONE

STATIC COEFFICIENT OF FRICTION DRY: 1.21 WET: .94





>> YUKON LEDGE

COLOR/CHARACTERISTICS: Deep rust to dark brown seam-face

FEATURES:

Random heights 1" to 4". Random lengths 5" to 20"

Available in Full Veneer & ThinCut™

SPECIFICATIONS:

ASTM C 97

BULK SPECIFIC GRAVITY: 2.387

DENSITY: 155.34 lbs./ft³

ABSORPTION: 3.0%

CLASS II QUARTZITIC SANDSTONE

ASTM C 170

COMPRESSIVE STRENGTH: 7,500 psi

CLASS III QUARTZITE

*This information is based on test results by Pacific Materials Laboratory

