



## **NHL 3.5 Gray**

Virginia Lime Works NHL 3.5 Gray is a Natural Hydraulic Lime for Historic Preservation, New Construction and Ecologically Friendly Building. Of the four Natural Hydraulic Limes available through Virginia Lime Works NHL 3.5 Gray offers moderate compressive strengths, high vapor permeability, high sulfate resistance, a balance between hydraulic set and carbonation, and a soft gray color.

### **Where to Use**

Perfect for general purpose work, NHL 3.5 Gray can be used in laying, bedding, or repointing brick and stone masonry, external renders/stuccos and internal plasters, grouts, and limewater consolidation.

## **TECHNICAL INFORMATION**

### **Components**

NHL 3.5 Gray is made by burning a unique French limestone that is infiltrated with silica and alumina and conforms to the European Standard EN:459. This product contains no cement, latex, or acrylic admixtures. NHL 3.5 Gray is supplied in 50 lb black/white paper sacks and in pallets of 49 bags.

### **Compressive Strengths (Approximate Pounds per Square Inch)**

NHL 3.5G	7 Days	14 Days	28 Days	56 Days	91 Days	182 Days	365 Days	730 Days
1:1	87.02	253.82	406.11	565.65	659.92	812.21	964.50	1109.54
1:1 ½	72.52	244.81	369.85	514.88	609.16	746.94	877.48	1016.71
1:2	49.31	156.64	263.97	371.30	445.26	552.60	659.92	767.25
1:2 ½	34.81	94.27	168.24	242.21	292.98	366.96	440.91	515.88
1:3	29.01	76.87	145.04	214.66	262.52	330.69	400.30	468.47
1:4	21.76	50.76	79.77	145.04	174.05	224.81	282.82	330.69
1:6	14.50	29.01	50.76	72.52	94.27	145.04	188.55	221.91

Expansion (mm)	0.3	Fineness to 90µ	5.9
Blaine Value (cm <sup>2</sup> /g)	10033	Fineness to 200µ	1.0
Bulk Density (kg/dm <sup>3</sup> )	0.754	Free Water (%)	0.33
Setting Times (min)	156	Real Density (g/cm <sup>3</sup> )	2.60
SO <sub>3</sub> (%)	2.18	Penetration (mm)	14.7
		Free Lime (%)	20.9

### **Preparation**

On the day prior to working control absorption by thoroughly dampening substrate by fine mist spray (depending on conditions this may entail dampening for additional time). Ensure there is no standing water or over-saturation before application. If the substrate is retaining moisture it may be attributed to

various conditions which would need to be corrected before work begins. Issues such as detailing, positive drainage, etc. should be dealt with before any work commences.

**Mixing Directions**

Mix 1 portion of NHL 3.5G with determined portions of sharp, clean, and well-graded sand and water. Blend thoroughly and add water slowly to achieve a workable mix. Take care when adding water whereas too much water will expand your mix and cause potential problems such as shrinkage cracks and frost damage.

*For Mechanical Mixing in a standard paddle mixer: Add lime and water together to make a paste, add sand slowly and then additional water to desired consistency.*

**Application**

Please see individual guidelines available from Virginia Lime Works for your specific application

**After-Care**

Protect work from drying winds, frost, direct sun, and rain for at least 7 days although some conditions may deem it necessary to cure for longer periods of time. Allow the mortar to cure slowly during this time by protecting with burlap, plastic, and fine mist spray if necessary. If working in freezing conditions, care must be taken that the mortar does not freeze during its curing (which may entail protection for extended periods of time).

**Coverages and Consumption (per bag)**

Mix Design	Yield (cubic feet)	Bricklaying 4" bed- 3/8" thick	Stonework 4" bed- 3/8" thick	Repointing Brick 1/2" joint - 3/4" thick	Repointing Stone 1/2" joint - 3/4" thick
1 part NHL: 2 parts sand	Approx. 2.4 ft <sup>3</sup>	122 brick	148 linear ft	270 ft <sup>2</sup>	792 linear ft
1 part NHL: 2.5 parts sand	Approx. 3.0 ft <sup>3</sup>	157 brick	185 linear ft	335 ft <sup>2</sup>	990 linear ft
Mix Design	Plaster/Stucco 1/4" thick	Plaster/Stucco 3/8" thick	Plaster/Stucco 1/2" thick	Plaster/Stucco 3/4" thick	Plaster/Stucco 1" thick
1 part NHL: 2 parts sand	70 ft <sup>2</sup>	56 ft <sup>2</sup>	42 ft <sup>2</sup>	28 ft <sup>2</sup>	14 ft <sup>2</sup>
1 part NHL: 2.5 parts sand	90 ft <sup>2</sup>	72 ft <sup>2</sup>	54 ft <sup>2</sup>	36 ft <sup>2</sup>	18 ft <sup>2</sup>

**Clean Up**

Ensure that all work is properly protected prior to cleaning. Maintain clean surfaces on the face, sills, ledges, and projections of masonry on a daily basis. Tools can be cleaned using conventional methods and properly protect any unused product from moisture and freezing. Opened bags of NHL3.5G can be stored in sealed pails for up to 6 months from date of purchase.

Protect eyes, nose, and skin. Work in well ventilated areas.

Store unopened containers away from direct sunlight and moisture, between 40°F-85°F. NHL3.5G can be stored for approximately 9 months from date of receipt.

Not for internal consumption. Keep out of the reach of children and animals.

**Alternate products**

NHL3.5W, Mix&GO Pre-Mixed Natural Hydraulic Lime Products

**Additional References**

NHL3.5G Material Safety Data Sheet, Guide to Natural Hydraulic Limes.