Sioux City Brick
Since 1913

Mortar Recommendations

GENERAL DISCUSSION

(1) No single type of mortar is best for all purposes or brick types. A good general rule is: Never use a mortar that is stronger (higher in compressive strength and cement content) than is required by the structural requirement of the project.

(2) Generally we break our products into two or three groups based on their relative **I**nitial **R**ate of **A**bsorption – **I.R.A.** (Suction)

(3) Our recommendations are based on using higher cement content mortar (Type S) for our lower IRA Brick and lower cement content mortars (Type N) for our higher IRA Brick. This assumes that greater water retention properties* are needed as the suction rate of the brick increases.

Sergeant Bluff Colors

All the brick from this plant are made with a fireclay raw material with 8-10% of a non-plastic grog added for pore structure development and surface roughness. This raw material has been mined at the same site since the 1860's. Our mortar recommendations from this plant are as follows:

Group I Portland Cement and Lime

Type S mortar with low water retention*

Bronco Classic, Gunsmoke, Ponderosa, Russet, Badlands, Black Hills, Coppertone, Ebonite, Fine Art, Grand Canyon, Mountain Shadow, Toasted Fine Art, Toasted Grand Teton, Black Walnut, and Vintage Brown.

Type S: 3 parts Portland, 1 part Quicklime, 9 parts Sand by volume.

Group II Portland Cement and Lime

Type S or N mortar

Clear Buff, all Gas Burn Matts, Beige Gray, Charcoal Gray, Butternut, Chestnut, Mission Pink, Coral Pink, Dakota Pink, Dunes Gray, Sterling Gray, Regency Blend, Monterey Smooth Ironspot, Sedona Smooth Ironspot, Sienna, Doeskin, and Mesa Pink.

Type S: 2 parts Portland, 1 part Quicklime, 9 parts Sand.
Type N: 4 parts Portland, 3 parts Quicklime, 16 parts Sand.

Group III Portland Cement and Lime or Masonry Cement**

Type S or N Mortar with higher water retention

Desert Blend, Elk Creek, Glacier Gray, Morning Mist, Marblestone Gray, Silverstone Gray, White Plains, Winter Park, Chateau Gray, Castile Gray, Deer Valley, Kodiak, Santa Fe, and Mojave.

Type S: 1 part Type S Masonry Cement, 3 parts Sand**
Type N: 1 part Portland, 1 part Quicklime, 6 parts Sand
Type N: 1 part Type N Masonry Cement, 3 parts Sand**

Adel Plant Colors

All Brick from this plant are made with a red burning shale which has been mined at the same site for over 100 years. We add a small percentage of local River Sand for added pore structure development. Our mortar recommendations from this plant are as follows:

Group I Portland Cement and Lime

Type S mortar with low water retention*

Brown, Hearthside, Mocha, Cordovan, Bordeaux Burgundy, Amherst, Lexington, Brownstone, Countryside, Swiss Chalet, Brookfield, Royal Burgundy, Cabernet Burgundy, Smoked Tudor, Chelsea Ironspot, Welsford Ironspot, Bordeaux Burgundy, Cinnamon Ironspot, Mesaba, Canterbury, Cranberry, Cambridge, Granite Red, Redstone, Parkridge, & all Savannah, Williamsburg and Charleston Sand-Struck colors except Birchwood, Sonoma Valley, Napa Valley, Plum, Williamsburg Old Plantation, Williamsburg Willow Creek, Williamsburg Misty Creek, Williamsburg Westport, Williamsburg Sandhills Red, Williamsburg Smoky Mountain,Williamsburg Stone Ridge, and Williamsburg Wexford.

Type S: 3 parts Portland, 1 part Quicklime, 9 parts Sand

Group II Portland Cement and Lime or Masonry Cement**

Type S or N Mortar

*Red Velour, Red Rock, (Savannah, Charleston and Williamsburg) Birchwood**, Williamsburg Inca Gold**, Red Desert, Aztec White**, Casablanca**, Winter Rose**, Pink Aztec**, Antique White**, Regular or Williamsburg Inca Gold, and Dover White**.*

Type S: 2 parts Portland, 1 part Quicklime, 9 parts Sand
Type S: 1 part Type S Masonry Cement, 3 parts Sand**
Type N: 1 part Type N Masonry Cement, 3 parts Sand**

Pre-construction testing of brick and mortar prisms is desirable to obtain a mix which is consistent with compressive strength, bond strength, and water retention properties desired. It has always been our desire to strike a balance between high durability and good laying properties. Please contact us for reprints of an Independent Lab Study on Bond Strength and Water Penetration of Low IRA Brick and Mortar by Greg Borchelt, who is the Director of Engineering and Research with the Brick Industry Association.

*Low Water Retention is the ability of mortar to resist the loss of water to an absorptive masonry unit. (more quicklime increases water retention)

**Type N Masonry Cements are permitted only for non-load bearing structures. Their strengths are water retention, workability and economy. When combined with Portland Cement's bond strength and compressive strength properties a good combination of properties is possible.