

1. PRODUCT DESCRIPTION

1.1. MAIN USE

1.1.1. Betomix Plus® type S is a dry preblended mortar mix containing Portland cement GUL, hydrated lime SA and dried masonry sand formulated for superior bond, water retention and water vapour transmission. Betomix Plus® type S is available in different colors and is engineered for the installation of brick applications where high mortar workability and board life is required for good bond. Betomix Plus is principally used for the installation or jointing of masonry elements. For interior and exterior use, it is ideal for the installation of brick (clay, concrete or calcium silicate), concrete blocks or stones (limestone, granite or sandstone). It comes in Types O and N, and each designation meets CSA A179 requirements.

1.2. ADVANTAGES

1.2.1. The use of pre-bagged, calibrated mortar, in which the sand particle size distribution and final mortar composition (particularly the proportions of binders) are controlled, ensures the consistency of the properties listed in this technical data sheet. As stipulated in CSA A179-14 (2024), the sand is calibrated and free of harmful quantities of saline, alkaline, organic, or other materials.

1.2.2. Betomix Plus® type S contributes to LEED® v4 certification under the MR credit Declaration and Optimization of Building Products — Procurement of Raw Materials with Recycled Content. Please refer to our Vertima Eco-Declaration validated environmental data sheets for more details.

1.3. LIMITATIONS

1.3.1. Betomix Plus® type S must be used exclusively for vertical surfaces, not horizontal surfaces (parapets, coping stones, or any protruding surfaces), unless otherwise specified by an architect or engineer.

1.3.2. Betomix Plus® type S must be used exclusively for installing non-load-bearing wall elements above ground level.

1.3.3. Any modification to the mortar composition is prohibited and automatically voids its warranty.

1.3.4. The addition of additives and/or admixtures of any kind, such as setting accelerators, setting retarders, antifreeze agents, anti-graffiti agents, waterproofing agents, polymers (latex) or other substances, is prohibited.

1.3.5. Only the addition of colorant¹ (on site) is permitted but not recommended.

1.3.6. Due to the varying absorption rates from one type of element to another, it is recommended to conduct compatibility tests with the mortar, mainly with regard to the minimum flexural adhesion required by CSA A179-14 (2024).

1.3.7. Betomix Plus® type S is not designed for repointing. In order to do so, the amount of mixing water would need to be significantly reduced, thereby altering the product's physical properties.

1.3.8. Visit the Les Produits Daubois Inc. website (www.daubois.com) for information on installation products.

2. INSTALLATION

2.1. APPLICATION CONDITIONS

2.1.1. Ensure that the ambient temperature, surface temperature, masonry temperature, and Betomix Plus® Type S temperature are between 5 °C (41 °F) and 32 °C (90 °F) during application and for a period of 48 hours thereafter.

2.1.2. Never apply Betomix Plus® Type S to frozen elements.

2.1.3. Some elements need to be wet (moistened) in hot weather.

2.1.4. Check with the masonry element manufacturer for preconditioning before installation. See CSA A82-14 (R 2023) standard.

2.2. SURFACE PREPARATION

2.2.1. Refer to the technical data sheet of the element for special installation requirements.

3. MIXING

3.1. MIXING SMALL QUANTITY (1 BAG)

3.1.1. Pour 4.0 litres (0.9 gallon) of potable water in a clean container (20 L pail).

Note: This amount of water is a starting point for measuring out the mixture.

3.1.2. The texture of the mortar is then adjusted by the mason according to the nature of the work and the environmental conditions.

3.1.3. Slowly add dry ingredients while mixing with a drill equipped with a mixer attachment such as a Jiffier. Use a drill with at least 1/2 in capacity.

3.1.4. Mix for a minimum of 3 minutes and a maximum of 5 minutes. Adjust consistency by adding water without excess.

3.1.5. Let the product rest for 2 to 5 minutes and then remix for 1 additional minute.

Note: Never mix less than one bag.

3.2. MIXING LARGE QUANTITIES

3.2.1. Use a mortar mixer of appropriate size (mixer should be 3/4 full). Start mixer. Introduce water; 4.0 litres (0.9 gallon) per 30 kg (66 lb) bag.

3.2.2. Slowly add dry ingredients and follow mixing instructions as per 3.1.4.

4. APPLICATION

4.1. Spread a uniform coat of mortar. Apply mortar on one end of the element and position it. Using a level, set the element in the bedding mortar with small, sharp taps.

Note: Never mix less than one bag.

4.2. Fill all the joints. Do not realign elements once they have been in contact with mortar.

Note: Mortar should be used within 1 ½ hour following mixing if temperature is higher or equal to 25°C (77°F). If temperature is lower than 25°C (77°F), use within 2 ½ hours. Discard unused mortar.

5. FINISHING

- 5.1. All mortar joints must be finished using a metal or plexiglass tool to provide the required look as well as weather resistance.
- 5.2. Finishing must be done just before the mortar loses its plasticity, when finger pressure barely leaves any traces. It is impossible to set a specific time; it is necessary to rely on the mason's judgment.
- 5.3. It is impossible to set a precise time for finishing the joint, so here, one must rely on the mason's judgment.

6. PROTECTION ET CURING

6.1. PRECAUTIONS

- 6.1.1. Protect from freezing (temperature over 5 °C, 40 °F) and rain for the first 48 hours.
- 6.1.2. In hot weather, protect from sun and wind to avoid rapid water evaporation of mortar.
- 6.1.3. Protect finished work with plastic sheeting to avoid mortar spots.

6.2. COLD WEATHER CONDITION

- 6.2.1. Protect from frost at temperatures below 5 °C (41 °F) and from rain for at least the first 48 hours after installation.
- 6.2.2. It is recommended that newly constructed structures be kept sheltered from the elements for a period of 5 days during periods when there is a high risk of frost.

6.3. HOT WEATHER CONDITION

- 6.3.1. Protect from sun and wind to prevent the mortar from drying too quickly.

7. CLEANING

- 7.1. Clean tools with water while mixture is not yet hardened. Once hard, only mechanical cleaning will be efficient.
- 7.2. Consult the element manufacturer or a cleaning specialist before any cleaning step is initiated. It is important to preserve mortar's integrity. Let the mortar dry for 28 days prior to initiate cleaning. Avoid high pressure washing and sandblasting.
- 7.3. Avoid using high-pressure cleaning or abrasive techniques, such as sandblasting, glass beads, or other methods. Always perform a sample test and wait 3 days before proceeding.

8. PACKAGING

- 8.1. This product is available in 30 kg (66 lb) paper bags and in bulk bags. A pallet of 30kg bags contains 63 bags.

9. STORAGE

9.1. INTERIOR STORAGE

Store in a cool, dry place. Avoid placing bags directly on the floor.

9.2. EXTERIOR STORAGE

Cover bags with a waterproof sheeting. Do not store directly on the ground.

9.3. SHELF LIFE

Shelf life is one year in original, unopened bags.

10. FIRST AID

CAUSES SEVERE BURNS AND SERIOUS EYE DAMAGE. You cannot rely on pain to detect burns caused by cement. Portland cement can cause dermatitis or sensitization. Repeated or prolonged inhalation of dust can cause lung damage or cancer.

WEAR IMPERMEABLE GLOVES, such as nitrile, eye protection, protective clothing, and rubber boots. Do not breathe dust or swallow it. Wear a NIOSH-approved respirator (mask) such as N95 in poorly ventilated areas, during prolonged or repeated use, or when maximum exposure limits are likely to be exceeded. Do not eat, drink, or smoke when using this product. Before handling, read and understand the safety information on this label and on the Safety Data Sheet available online at www.daubois.com. In case of emergency: 1-800-535-5053.

FIRST AID: Wash contaminated body and clothing thoroughly and immediately. In case of contact with eyes: rinse cautiously with water for several minutes; remove contact lenses, if present and easy to do; continue rinsing. In case of inhalation: move the person to fresh air and keep them comfortable so they can breathe. If swallowed: rinse mouth; do not induce vomiting. If skin burns, irritation, or rash occurs seek medical attention immediately. Consult a doctor immediately if symptoms are severe or persistent. Contains silica sand and Portland cement or masonry or mortar and may contain hydrated lime or additional cementitious materials such as fly ash/silica fume. Dispose of containers and contents in accordance with all regulations.

11. TECHNICAL SERVICE

Daubois offers the possibility to colour the mortar in factory to match it perfectly with a masonry element. In this case, a representative sample of at least 6 cm² (1 in²) area of the element to match is required. Once the colour matches completed, Daubois will supply a coloured sample of 8 cm by 1 cm (3 in by 3/8 in) to its customer for approval. Expect 5 business days delay for the coloration of one sample.

Contact Daubois for more information about application methods or conditions or to obtain the latest version of our technical documents.

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12. WARRANTY

Obtain the applicable LIMITED WARRANTY on

<https://www.daubois.com/fr/produit-garantie.php>

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13. WARNING

Color variations may be observed in the final result even if the mortar used has been pre-colored at the factory and complies with the requested specifications. These variations are mainly caused by various application situations such as:

- Delay before finishing (smoothing of joints).
 - Variable moisture content of the elements.
 - Lack of protection during application and work stoppages/interruptions.
 - Inappropriate or excessive washing.
- The final choice of color for the entire project should be based on the result obtained after creating the sample (standard) using full bags.

TECHNICAL DATA

Characteristic	Deadline	Résultats ¹
Compressive strength ² , ASTM C-109	7 days 28 days	min. ⁴ 7.5 MPa (1087 psi) min. ⁴ 12.5 MPa (1813 psi)
Average value ³	28 days	14.0 MPa (2030 psi)
Vapor transmission, ASTM E-96	—	14 perms
Water absorption, ASTM C-1403	24 hours	110 g/100 cm ²
Direct tensile adhesion, concrete block, CSA 23.2-6B	28 days	0.50 MPa (73 psi)
Drying shrinkage, ASTM C-596	91 days	0.2%
Resistance to freeze/thaw cycles, ASTM C-666M ⁵	—	>100 cycles
Flexural strength, ASTM C-348	7 days 28 days	2.5 MPa (363 psi) 2.9 MPa (421 psi)
Water retention, ASTM C-1506 ²	—	min. 70% of initial spread
Air content, ASTM C-185	—	maximum 18% ² 8 to 12 % ³
Bulk density	—	1900 kg/m ³ (120 lb/pi ³)
Yield of a 30 kg (66 lb) bag	—	0.016 m ³ (0,6 pi ³)
Approximate number of bricks laid per 30 kg bag	—	45 to 50 bricks at 6.5 bricks/ft ²

¹ Laboratory prepared sample of Betomix Plus will meet CSA A179-14 (2024) property specifications for a type S mortar when mixed to a flow of 100 to 115%.

² Average values obtained during quality control analysis. Results may vary from this value but will always meet CSA A179-14 (2024) standard as described in ¹

³ Results obtained in laboratory-controlled conditions with a standard sample mixed to a flow of 100 to 115%. These results may vary slightly from one sample to the other and are used as a performance indicator of the mortar. These results cannot be used for the acceptance or rejection of a mortar bag.

⁴ Test executed according to Procedure A of ASTM C-666M standard.

Note: As mentioned in Table 6 of CSA A179-04 standard, the compressive strength of a mortar prepared at the job site should correspond to about two-third the resistance obtained by the same mortar prepared in laboratory.