

## HR-8000

### High Strength Concrete

#### 1. DESCRIPTION DU PRODUIT

##### 1.1. PRINCIPAL USE

Bomix® HR-8000 is a pre-mixed cement and aggregate (sand and stone) product for general structural applications, requiring only the addition of water.

##### 2. USE

- 2.1. Bomix® HR-8000 is an industrial grade concrete mix specially formulated to achieve a compressive strength of 55 MPa (8000 Psi), at 28 days, which is more than double the compressive strength of concrete regular.
- 2.2. This product has a very high density, which gives it greater resistance to freeze/thaw cycles as well as flaking (de-icing salts) than regular concrete.
- 2.3. Bomix® HR-8000 concrete mix is designed to place concrete with a thickness of 50 mm (2 in) or more, in order to build or repair anything made of concrete, including:
  - Floors subjected to heavy loads;
  - Sidewalks, stoops;
  - All other structures frequently exposed to de-icing salts.

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- 2.4. Bomix® HR-8000 concrete mix can be used for interior and exterior applications.

#### 3. PACKAGING

- 3.1. Bomix® HR-8000 concrete mix is available in 30 kg (66 lb) bags.

#### 4. YIELD

- 4.1. A 30 kg (66 lb) bag of Bomix® HR-8000 concrete gives a yield of approximately 14 liters (0.5 ft<sup>3</sup>).

#### 5. TECHNICAL DATA

##### 5.1. APPLICABLE STANDARDS

ASTM International - ASTM C 387 Standard Specifications for Pre-Bagged, Dry, and Combined Mortar and Concrete Materials.

##### 5.2. PHYSICAL AND CHEMICAL PROPERTIES

Bomix® HR-8000 Concrete Mix exceeds the compressive strength requirements of ASTM C 387 for high initial strength concrete as shown in Table 1.

#### 6. INSTALLATION

##### 6.1. SURFACE PREPARATION

###### 6.1.1. CONCRETE SUBSTRATE (EXISTING CONCRETE)

- 6.1.1.1. The surfaces to be covered must be structurally sound, clean and free of any material that could affect adhesion such as grease, dust, oil, paint or any other harmful substance.



- 6.1.1.2. Ensure that the ambient, surface and product temperatures are between 5 °C (41 °F) and 35 °C (95 °F) during application and for a period of 48 hours following application.

- 6.1.1.3. Smooth surfaces must be scarified mechanically. Wear appropriate personal protective equipment.

- 6.1.1.4. Saturate the surface to be covered with drinking water for 12 hours to 24 hours before applying the product. Remove excess water before application.

- 6.1.1.5. If necessary, construct a form (formwork) to support the concrete.

- 6.1.1.6. Solidify the formwork to prevent any movement.

- 6.1.1.7. Caulk to prevent any loss of moisture.

- 6.1.1.8. Moisten the form before putting it in place.

##### 6.1.2. SLAB ON THE GROUND

- 6.1.2.1. Demarcate the planned area and remove the grass or soil to the desired depth. Use Bomix® crushed stone to make the underlay. Compact it until it is firm. The formwork must be securely in place.

#### 7. MIXING

##### 7.1. RECOMMANDATION

- 7.1.1. It is strongly recommended to use Bomix® All-Crete concrete adhesive as a primer to increase adhesion to the old surface and new concrete.

- 7.1.2. Bomix® All-Crete can also replace water in the mixture to obtain a malleable product. It also has the effect of increasing the adhesion, flexibility and durability of concrete.

##### 7.2. USING A MIXER

- 7.2.1. Wear impervious gloves, such as nitrile.

- 7.2.2. Bomix® HR-8000 Concrete mix can be mixed in a concrete mixer or mortar mixer.

- 7.2.3. Choose the size of the mixer best suited to the size of the work to be done.
- 7.2.4. For each 30 kg (66 lb) bag, maintain at least 1 cu. ft. of mixer capacity.
- 7.2.5. For each 30 kg (66 lb) bag of HR-8000 Bomix® to be mixed, add approximately 2.7 L (0.53 gallons) of potable water to the mixer.
- 7.2.6. Start the mixer and gradually add the dry mixture.
- 7.2.7. If the material becomes too difficult to mix, add water until good workability is achieved.
- 7.2.8. If a slump cone is available, adjust the water content to achieve a slump of 50 mm to 75 mm (2 in. to 3 in.).

### 7.3. HAND MIXING

- 7.3.1. Wear impervious gloves, such as nitrile.
- 7.3.2. Empty the bag of concrete into a suitable mixing container.
- 7.3.3. For each 30 kg (66 lb) bag, add approximately 2.7 L (0.53 gallons) of potable water.
- 7.3.4. Mix the mixture with a shovel, rake or hoe, if necessary, adding water until a stiff and workable consistency is obtained.
- 7.3.5. Make sure all material is moist and even.

*Note 1: Never mix less than one bag and always mix full bags.*

*Note 2 – Maximum water content must not exceed 3.5 L (0.9 gallon) of water per 30 kg (66 lb) bag of concrete.*

## 8. APPLICATION

### 8.1. METHOD FOR INSTALLING A SLAB.

- 8.1.1. Moisten the Bomix® crushed stone underlayment, which has been previously compacted, before placing the concrete. Do not allow water accumulation.
- 8.1.2. Before starting concreting, make sure you have a sufficient quantity of materials to complete the work.
- 8.1.3. Place the concrete in the form; fill the shape completely.
- 8.1.4. After the concrete has been consolidated and roughly leveled without air pockets, level (level) the surface.
- 8.1.5. To level the surface, use a straight board, moving the edge backwards in a left-to-right motion to remove excess material.
- 8.1.6. Lightly smooth the surface using a trowel.
- 8.1.7. Form the edges in contact with the formwork using an edge iron.
- 8.1.8. Make 25 mm (1 in) control joints in the slab every 1.8 m to 2.4 m (6 ft to 8 ft) using a grooving tool.
- 8.1.9. See section 9 for details of the finishing steps.

*Note: Do not use the product if it has been mixed for more than 1h30, do not add water to make it more malleable.*

## 9. FINISHING

- 9.1. Any standard finishing technique is acceptable with the Bomix® HR-8000. Concrete can be finished with a trowel, broom or other types of special finishes.
- 9.2. Wait until the product has reached its initial setting (approximately 2 hours, at 23°C (73°F)) before proceeding to the finishing step.
- 9.3. To obtain a rough effect, finish with a broom or wooden trowel. For a smooth finish, use a steel or preferably magnesium finishing trowel.

*Note: If the finishing is carried out too early, bleed water will appear on the surface, this can create a layer of low resistance which will be observable by a whitish deposit on the surface. This situation is also encountered when the surface is too flatted (over-finishing). For best results, limit the passage of the trowel over the concrete surface.*

## 10. PROTECTION AND CURING

### 10.1. GENERAL

- 10.1.1. Curing is one of the most important stages after concreting.
- 10.1.2. Proper curing increases the strength and improves the durability of concrete. Poor maturation can ruin a previously well-executed project. Adequate water content and temperature are essential to allow proper ripening.
- 10.1.3. The gain in compressive strength is directly related to the curing temperature. The lower the temperature, the lower the resistance gain. Near the freezing point, the hydration process slows down considerably.
- 10.1.4. Ice melt products should not be used on concrete until they have hardened for at least 28 days. Waiting 56 days is more beneficial.

### 10.2. CURING

- 10.2.1. When the weather is too hot, dry or windy, surface water evaporates quickly. This will notably result in a difficult finish as well as the appearance of cracks.
- 10.2.2. Ripening should begin as soon as possible for a minimum period of 3 days. In cold weather (between 5 °C (40 °F) and 21 °C (70 °F)), this period can be up to 7 days.

## 11. CLEANING

- 11.1. Clean the equipment with water while the mixture has not yet hardened. Once the mixture has hardened, only mechanical cleaning will be effective.

## 12. PRECAUTIONS

- 12.1. Protect the concrete from freezing for the first 48 hours. The use of plastic wrap and/or burlap, insulating blankets and tarpaulins to ensure that the temperature is above 5 °C (41 °F) are recommended.
- 12.1. For colored concrete, only apply water curing. The surface must be completely covered with water so as not to have any surface in contact with air. Using plastic wrap and/or burlap can cause uneven discoloration of colored concrete.

### 13. STORAGE

#### 13.1. INDOOR STORAGE

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

#### 13.2. EXTERIOR STORAGE

13.2.1. Cover bags with waterproof wrap. Do not store directly on the ground.

#### 13.3. LIFETIME

13.3.1. Storage time is 12 months in unopened, well-protected bags. Do not use a product that has agglomerations of hardened materials.

### 14. FIRST AID

14.1. THIS PRODUCT CONTAINS PORTLAND CEMENT AND MAY CAUSE IRRITATION TO THE EYES, SKIN AND RESPIRATORY TRACT. Wear rubber gloves, safety glasses and approved dust mask. If swallowed, call a poison control center or doctor immediately. Do not induce vomiting.

14.2. In case of contact with eyes, rinse with water for 15 minutes. In case of contact with skin, rinse well with water. Keep out of reach of children. Before handling, read and understand the safety information on this label and on the Safety Data Sheet (SDS) available online at [www.bomix.ca](http://www.bomix.ca).

### 15. TECHNICAL SERVICES

15.1. Contact Bomix® for further information on application methods or conditions as well as to obtain the most recent version of the technical documents.

Tel: 1-800-561-2664, (514) 328-1253

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Les Produits Daubois Inc.

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### 16. WARRANTY

16.1. You can obtain the terms of the applicable LIMITED WARRANTY at <https://www.bomix.ca/en/product-warranty.php> Or send a written request to Les Produits Daubois Inc., Five Concourse Parkway, Atlanta, GA 30328, USA . ©Quikrete Canada Holdings, Limited. Manufactured by or under the authority of Les Produits Daubois Inc. ©2024 Quikrete International, Inc.

**Table 1 : Typical results<sup>1</sup>**

Characteristic	Standards	Term	Unit	Result
Initial setting time	ASTM C 191	-	(hh :mm)	2:00
Final setting time	ASTM C 191	-	(hh :mm)	5:00
Compressive strength	ASTM C 39	1 day	[ MPa (Psi)]	31.0 (4500)
		7 days	[ MPa (Psi)]	48.0 (7000)
		28 days	[ MPa (Psi)]	55.0 (8000)
Volumic mass	ASTM C 185	-	[kg/m <sup>3</sup> (lb/ft <sup>3</sup> )]	2350 (145)
Yield for 1 30 kg (66 lb) bag	ASTM C 387	-	[m <sup>3</sup> (ft <sup>3</sup> )]	0.014 (0.50)

1- Results obtained in the laboratory, at 23 °C, curing > 90% RH, for a standard sample, kneaded to obtain a slump between 51 to 76 mm (2 to 3 in).