

HOBIN:
ITEM NO LONGER REQUIRED, AS PER CIR#25 AND SI-011.

SHOP DRAWING REVIEW

REVIEWED
REVIEWED AS NOTED
REVISE AND RESUBMIT



"This review is for the sole purpose of ascertaining conformance with the general design concept for architectural features only, and does not in any way constitute review of the design of engineering elements which form part of the Contract Documents prepared by others. This review shall not mean that the Architect approves the detail design inherent in the shop drawings. This responsibility shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes, or to techniques of construction and installation and for co-ordination for the work of all trades."

M'GONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Telephone (613) 623-3613 Fax (613) 623-8705

By: Michelle Cataldo Date: Feb. 6, 2019
HOBIN ARCHITECTURE INCORPORATED

SHOP DRAWING & SAMPLE SUBMITTAL

Project Title: Turnbull School
Project Number: _____
Date: January 10th, 2019

SUBCONTRACTOR : McGonigal Construction Ltd.
(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle -alytle@mcgonigalconstruction.ca
Telephone Number: (613) 623-3613

SUPPLIER : Givesco Inc.
(name & address) 795 rue de Vernon
Gatineau, Quebec
Contract Name: Peter Champagne
Telephone Number: 819-770-5582

MANUFACTURER : Permacon
(name & address) 6860 Bank Street
Metcalfe, Ontario
Contact Name: _____
Telephone Number: 613-821-0898

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Standard Concrete Block

TECHNICAL DATA FOR CONCRETE BLOCKS



TYPES (CM)	5		7.5		10		10		15		15		20		20		25		30		
	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	
Unit dimensions (mm)	40 x 190 x 390	40 x 190 x 390	65 x 190 x 390	65 x 190 x 390	90 x 190 x 390	90 x 190 x 390	90 x 140 x 390	90 x 140 x 390	140 x 190 x 390	140 x 190 x 390	140 x 190 x 390	140 x 190 x 390	190 x 190 x 390	190 x 190 x 390	190 x 190 x 390	190 x 240 x 390	190 x 240 x 390	190 x 240 x 390	190 x 290 x 390	190 x 290 x 390	
% of solid	100	100	100	100	100	100	57	80	100	100	100	100	56	62	62	53	53	53	53	53	
Min. faceshell thickness (mm)							26	40				32	46	46	35	35	35	35	35	38	
Min. web thickness (mm)							26	66				26	28	28	28	28	28	28	28	32	
Gross cross-sectional area (cm ²)	156	156	254	254	351	351	546	546	546	546	546	546	741	741	741	741	741	741	936	1 131	
Net cross-sectional area (cm ²)	156	156	254	254	351	351	311	437	546	546	546	415	459	459	459	459	459	459	496	605	
Gross volume (cm ³)	2 964	2 964	4 817	4 817	6 669	6 669	10 374	10 374	10 374	10 374	10 374	10 374	14 079	14 079	14 079	14 079	14 079	14 079	17 784	21 489	
Net volume (cm ³)	2 964	2 964	4 817	4 817	6 669	6 669	5 913	8 289	10 374	10 374	10 374	7 884	8 729	8 729	8 729	8 729	8 729	8 729	9 426	11 389	
Cells volume (cm ³)							4 461	2 075	4 461	2 075	2 075	6 195	6 195	6 195	6 195	6 195	6 195	6 195	8 358	10 100	
Equivalent thickness (mm)	40	40	65	65	67	67	80	112	112	112	112	140	140	140	140	140	140	140	143	154	
Type	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	Heavy	Light	
Unit weight (kg)	6.5	5.1	10.5	8.3	10.8	8.5	14.6	11.5	12.9	18.2	14.3	22.7	17.9	17.3	13.6	19.1	15.1	23.1	14.3	24.3	
Wall weight (kg/m ²)	88	69	142	112	146	115	197	155	175	245	193	307	242	233	184	258	203	312	192	328	
Fire resistance (hr)																					
* As per NBC	0.5	0.5	0.9	1.0	0.9	1.4	1.9	2.2	1.5	2.0	2.8	2.9	4.0+	1.8	2.6	2.2	3.1	3.0	4.0+	4.0+	
U.L.C. Certification														2				4			
Thermal resistance value RSI (m ² ·C/W)														0.21	0.30						
* Empty cells														0.19	0.26				0.24	0.33	
* Grouted cells														0.40	0.62				0.61	0.98	
Sound transmission class (db)	41	39	45	43	45	43	47	45	50	48	52	50	48	50	48	51	49	53	50	53	

All concrete blocks have compressive strength of 15 MPa. Blocks with higher resistance are available on special order.
 Water absorption = Heavy: approx. 150 kg/m³ - Light : approx. 180 kg/m³
 Noise reduction coefficient (NRC) = normal texture - heavy blocks : 0.27 - light blocks : 0.45 (no paint)
 Concrete density = Heavy approx. 2190 kg/m³ - Light : approx. 1725 kg/m³

Material Safety Data Sheet

Identify: Concrete unit products including concrete pavers, precast concrete slabs, standard concrete block and Architectural concrete block, concrete stones and bricks.

SECTION I

Manufacturer's Name: Permacon Group
Address: 8145 Bombardier St. Anjou Quebec H1J 1A5
Date Prepared: 05-05-13 **Emergency Telephone Number:** 514-351-2125

SECTION II – HAZARDOUS INGREDIENTS/IDENTIFY INFORMATION

Concrete products are mixtures of fine and coarse aggregates, cement and water. Finished products should produce no significant hazards from normal breakage. Operations that generate airborne dusts from concrete paving products may produce hazards from chemical substances present in the original ingredients.

Hazardous Components: Silica, Crystalline Quartz and Cristobalite (respirable), Calcium Oxide and Nuisance Dusts (such as Portland Cement, Metal oxides, Limestone and other Calcium compounds)

Specific Chemical Identity: Silica Dioxide SiO₂ (CAS 14808-60-7), Calcium Oxide (CAS 1305-78-8), Portland Cement (CAS 65997-15-1), Aluminum Oxide (CAS 1344-28-1), Iron Oxide (CAS 1309-37-1), Calcium Carbonate (CAS 1317-65-3), Calcium Hydroxide (CAS 1305-62-0), Calcium Silicate (CAS 1344-95-2)

Common Ingredients: Silica, Flint, Crystalline Free Silica, Quartz, Ground Silica, Silica Flour, Fly Ash, Cement, Rock, Gravel, Sand, Ground Granulated Blast Furnace Slag, Iron ore.

Admixtures and pigments are used in certain types of and colors of concrete unit paving products. However, the percent weight of the additives is not expected to exceed 1% of a typical concrete paving product. The additives are not expected to have any effect on the hazards presented by the use of these products. To obtain Material Safety Data Sheets for the additives for a specific formula, request them from the supplier.

Note- Chromium may be present as a trace contaminant in Portland cement at concentrations below applicable Hazard Communication Standard (HCS) reporting thresholds for MSDSs. Chromium compounds have been linked with cases of dermal sensitization and allergic contact dermatitis. See Sections VI and VII for additional information on health hazards and controls for concrete paving products.

Exposure Standards

	OSHA PEL-TWA	ACGIH TLV®-TWA (2006 version)	NIOSH REL-TWA
Crystalline Silica- Quartz and Cristobalite (Respirable dust)‡	10 mg/m^3 % Silica + 2 for cristobalite, use ½ PEL calculated for Quartz	0.025 mg/m^3 (Quartz and Cristobalite)	0.05 mg/m^3 (Quartz and Cristobalite)
Nuisance Dusts (Portland Cement, Limestone/Calcium Carbonate, Calcium Silicate, Calcium Hydroxide§, Aluminum Oxide† and Iron Oxide ¥)	15 mg/m^3 (Total dust) 5 mg/m^3 (Respirable dust)	10 mg/m^3 (Total dust)	10 mg/m^3 (Total dust) 5 mg/m^3 (Respirable dust)
Calcium Oxide	5 mg/m^3 (Total dust)	2 mg/m^3 (Inhalable dust)	2 mg/m^3 (Total dust)

OSHA PEL-TWA = Occupational Safety and Health Administration Permissible Exposure Limit set for a typical 8-hour time-weighted average exposure.

ACGIH TLV-TWA = American Conference of Governmental Industrial Hygienists Threshold Limit Value for an 8-hour time-weighted average exposure.

NIOSH REL-TWA = National Institute for Occupational Safety and Health Recommended Exposure Limit set for a period up to a 10-hour workday and 40-hour work week. See NIOSH Criteria for a Recommended Standard Occupational Exposure to Crystalline Silica (1974).

§ The ACGIH TLV and NIOSH REL for Calcium Hydroxide is 5 mg/m^3 .

‡Respirable dust refers to that portion of dust passing through an appropriate size selective sampling device.

†In 1988 after a limited review of available scientific literature, NIOSH concluded that documentation cited by OSHA was inadequate to support a proposed PEL of 10 mg/m^3 for aluminum oxide. Presently, there is not a NIOSH REL listed for aluminum oxide in the NIOSH Pocket Guide to Chemical Hazards, Pub. No.97-140, 2004 version.

¥ The current NIOSH REL for Iron oxide is 5 mg/m^3 for Total Dust.

SECTION III – PHYSICAL/CHEMICAL CHARACTERISTICS

Boiling Point:	N/A
Vapor Pressure:	N/A
Vapor Density:	N/A
Suitability in Water:	Not Soluble
Appearance and Odor:	Odorless Solid
Specific Gravity (H₂O = 1):	N/A
Melting Point:	N/A
Evaporation Rate:	N/A

SECTION IV – FIRE AND EXPLOSION HAZARD DATA

Flash Point (Method Used):	N/A		
Flammable Limits:	N/A	LEL: N/A	UEL: N/A
Extinguishing Media:	N/A		
Special Fire Fighting Procedures:	None		
Unusual Fire and Explosion Hazards:	None		

SECTION V – REACTIVITY DATA

Stability:	Unstable:	Stable: X	Conditions to Avoid: None
Incompatibility (Materials to Avoid):		May react with strong acids due to the alkaline nature of materials used to produce concrete paving products.	
Hazardous Decomposition or Byproducts: None			
Hazardous Polymerization: May Occur:		Will Not Occur: X	Conditions to Avoid: X

The curing process for concrete products consumes oxygen and produces carbon dioxide (CO₂). Under normal conditions of storage and use for finished concrete paving products, this should not produce a hazardous environment. Storage and use of uncured concrete paving products in an enclosed or poorly ventilated area could lead to an oxygen deficient atmosphere. Adequate ventilation should be provided to minimize risks for oxygen deficiency. Atmospheric testing should be conducted if oxygen deficiency is suspected.

SECTION VI – HEALTH HAZARD DATA

Route(s) of Entry:		
Inhalation? Yes	Skin Absorption? No	Ingestion? Yes
Health Hazards (Acute and Chronic):		

Dry sawing or sanding of grinding of concrete unit paving products may result in the release of airborne dusts containing respirable crystalline quartz. Prolonged exposure to respirable crystalline quartz may cause delayed (chronic) lung injury (silicosis). Acute or rapidly developing silicosis may occur in a short period of time in heavy exposure. Silicosis is a form of disabling pulmonary fibrosis, which can be progressive and may lead to death. Individuals with silicosis have an increased risk for developing tuberculosis.

Dusts from concrete paving products are alkaline (pH>7) and can be corrosive to exposed skin and mucous membranes (eyes, nose and throat). Most dermal issues from concrete products are from contact with wet concrete. Handling of finished, dry concrete paving products should

produce no dermal effects except for mechanical abrasion. Some sensitive individuals may experience dermal irritation when dry concrete dusts contact moist skin.

One of the ingredients used to make finished concrete paving products, Portland Cement, has traces of Chromium compounds which has been associated with allergic contact dermatitis. Hexavalent chromium is considered a sensitizer so some individuals may experience dermal sensitization with adverse reactions even at low levels of exposure. Kidney damage has been linked to high dermal exposures.

Individuals who experience dermal irritation, reddening or ulceration of the skin or mucous membranes should seek prompt medical attention.

Carcinogenicity:

Finished concrete paving products are not carcinogenic according to NTP, IARC or OSHA classifications. Crystalline silica is a carcinogenic material expected to be present in dusts from concrete paving products above the OSHA HCS reporting thresholds. Traces of hexavalent chromium may be present as residual contamination in Portland Cement at thresholds believed to be below 0.1% in concrete paving product mixtures. The carcinogenic properties for hexavalent chromium are from inhalation of exposed dusts.

NTP: Yes

The National Toxicology Program (NTP) published its Eleventh Annual Report on Carcinogens which concludes that "Silica, Crystalline (respirable size)" and "Chromium, Hexavalent" are known to be human carcinogens. The NTP conclusion is based on sufficient evidence for the carcinogenicity in humans.

IARC Monograph? Yes

IARC Monographs on the Evaluation of the Carcinogen Risk of Chemicals to Humans (volume 68, 1997) concludes that there is sufficient evidence for the carcinogenicity of crystalline silica to humans. IARC Class 1. IARC Monograph (volume 49, 1990) concludes there is sufficient evidence for the carcinogenicity of hexavalent chromium compounds in humans. IARC Class 1.

OSHA? Crystalline silica is not presently treated as a carcinogen in 1910.1000 Table Z-3, Mineral Dusts. Hexavalent chromium compounds are not presently treated as carcinogenic.

Signs and Symptoms of Exposure: Undue breathlessness, wheezing, cough and sputum production are indications of exposure to inhaled dusts containing silica. Irritation, redness, dermatitis, rashes or ulcerations of the skin are indications of dermal exposure to alkaline dusts or dusts containing chromium compounds.

Medical Conditions Generally Aggravated by Exposure:

Pre-Existing lung diseases such emphysema or asthma: Pulmonary function may be reduced by inhalation of respirable crystalline silica. Also lung scarring produced by such inhalation may lead to a progressive massive fibrosis of the lung which may aggravate other pulmonary conditions and diseases and which increases susceptibility to pulmonary tuberculosis. Progressive massive fibrosis may be accompanied by right heart enlargement, heart failure, and pulmonary failure. Smoking aggravates the effects of exposure.

Emergency and First Aid Procedures:

For sand in eyes during dry sawing, sanding and grinding operations, immediately flush generously with water for 15 minutes. If irritation persists, seek medical attention. For gross inhalation, remove person immediately to fresh air, give artificial respiration as needed, and seek medical attention as needed.

SECTION VII – PRECAUTIONS FOR SAFE HANDLING AND USE

Steps to be taken in Case Material is Released or Spilled:

Use feasible wet methods to minimize airborne dusts for handling and finishing tasks that could generate airborne dusts. When dry sawing, sanding or grinding, use dustless system for handling, storage, and clean-up so that airborne dust does not exceed the PEL. Use adequate ventilation and dust equipment. Practice good housekeeping. Do not permit dust to collect on walls, floors, pavement, sills, ledges, machinery, or equipment. Maintain and test ventilation and dust collection equipment. Wash or vacuum clothing which becomes dusty. See also control measures in Section VIII.

Waste Disposal Method:

Normal breakage may be picked up and discarded as common waste. Residue from dry sawing, sanding and grinding operations should be disposed of in accordance with Federal, Provincial, State, or Local regulations.

Precautions to be Taken in Handling and Storage: None

Other Precautions:

See OSHA Hazard Communication Rule 29 CFR Section 1910.1200, 1915.1200, 1917.1(a)(2)(vi), 1918.1(b)(4), 1926.59, and 1928.21(a), and state and local worker community “right to know” laws and regulations. We recommend that smoking be prohibited in all areas where respirators must be used. **WARN YOUR EMPLOYEES (AND YOUR CUSTOMER – USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARDS AND OSHA PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT THE OSHA PRECAUTIONS.**

See also American Society for Testing and Materials (ASTM) Standard Practice E1132-99a, “Standard Practice for Health Requirements Relating to Occupational Exposure to Quartz Dust.”

Also, see NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002, available at www.cdc.gov/niosh.topics/silica.

SECTION VIII – CONTROL MEASURES

Respiratory Protection

*Only NIOSH-approved respiratory protection equipment should be used. All respiratory protection devices should be selected for your work environment based upon an adequate exposure evaluation using accepted industrial hygiene evaluation techniques. Since it is the respirable fraction of dust that is of medical significance for crystalline silica, High Efficiency Filtration Arresting (HEPA) filtration should be considered as part of a thorough assessment of exposures and controls. Any use of respiratory protection devices for exposure control should be done following legal requirements found in 29CFR 1910.134, the OSHA standard for Respiratory Protection. An industrial hygiene professional should be consulted for assistance with respirator selection or respirator program assistance.

See ANSI Z88.2 latest edition, “Practices for Respiratory Protection” and NIOSH “Respirator Selection Logic 2004”, DHHS (NIOSH) Pub. 2005-100 for additional information on respiratory protection.

Ventilation:

Local Exhaust: When dry sawing, sanding or grinding concrete unit paving products, use sufficient local exhaust to reduce the level of respirable dust to the PEL. See ACGIH “Industrial Ventilation, A Manual of Recommended Practice,” latest edition.

Mechanical

See “Other Precautions” under Section VII.

Special

See “Other Precautions” under Section VII.

Other

See “Other Precautions” under Section VII.

Protective Gloves

Use impervious gloves to prevent mechanical abrasion and skin contact with wet or dry concrete dusts.

Eye Protection

When sawing, sanding or grinding concrete unit paving products, wear protective shield or tight fitting goggles (safety glasses).

Other Protective Clothing or Equipment

When sawing, sanding or grinding concrete unit paving products, wear ear protection (ear plugs) and impervious materials for protection of exposed skin.

Work/Hygienic Practices

Avoid creating and breathing dust. See "Other Precautions" under Section VII.

The information and recommendations contained herein are based upon based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful health effect, which may be caused by exposure to airborne dust particles created by dry sawing or grinding of concrete unit paving products. Customers/users of concrete unit paving products must comply with all applicable health and safety laws, regulations, and orders.

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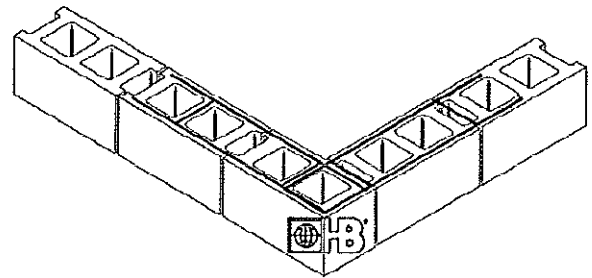
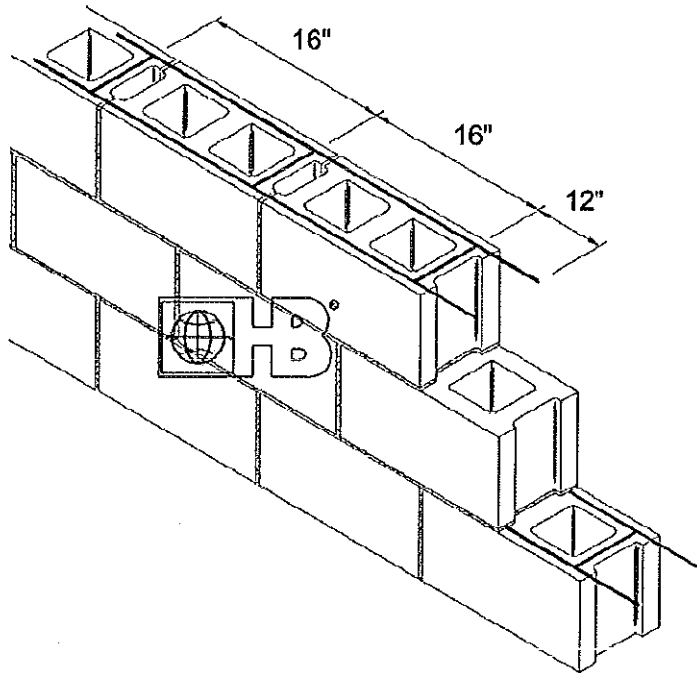
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(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle -alytle@mcgonigalconstruction.ca
Telephone Number: (613) 623-3613

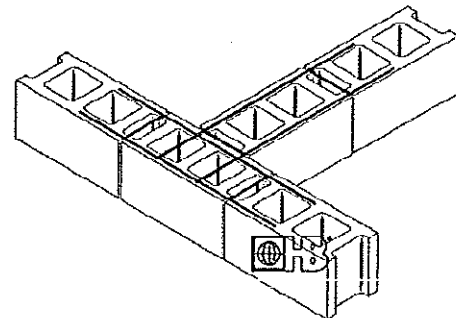
SUPPLIER: Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER: Blok Lok
(name & address) 12 Ashbridge Circle
Woodbridge, Ontario
Contact Name: _____
Telephone Number: 905-226-2277

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: BL 10 (Ladder Wire)



Prefabricated Corner



Prefabricated Tee

DRAWINGS FOR ILLUSTRATIVE PURPOSES ONLY

Material Conformance - Joint Reinforcement

Blok-Lok joint reinforcement products conform to
ASTM A951/A951M (Standard Specification for Steel Wire for Masonry Joint Reinforcement)
ACI / ASCE 530 (Building Code Requirements for Masonry Structures)
CSA standard A370-14.

Wire: (Carbon Steel): Prefabricated construction from cold-drawn steel wire conforming to ASTM A 82:
Tensile Strength - 80,000 p.s.i.
Yield Point - 70,000 p.s.i. minimum

Wire Diameter:

9 gauge (.148" or W1.7)
3/16" (.187" or W2.8)

Side Rods and Cross Rods available in any combination of the above.
Cross Rods welded 16" O.C.

First Cross Rods welded 12" in from each end to allow lap splices per code requirements.

Note: Bed joint alignment for connecting wythes recommended.

Blok-Lok manufactures steel wire products from a minimum of 95% recycled material.

Finishes:

- Mill Galvanized Coating: ASTM A 641 (0.1 oz/ft²)
- Hot-Dip Galvanized after fabrication: ASTM A 153 (1.5 oz/ft²)
- Stainless Steel: ASTM A 580 - AISI Type 304 (Type 316 available on special order).

Note: Blok-Lok recommends Stainless Steel for maximum protection against corrosion.

Wire Size:

- Standard:
9 Gauge Side Rods x 9 Gauge Cross Rods
- Heavy Duty:
3/16" Side Rods x 9 Gauge Cross Rods
- Extra Heavy Duty:
3/16" Side Rods x 3/16" Cross Rods

Block Size:

- | | | | |
|------------------------------|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> 4" | <input type="checkbox"/> 6" | <input type="checkbox"/> 8" | <input type="checkbox"/> 10" |
| <input type="checkbox"/> 12" | <input type="checkbox"/> 14" | <input type="checkbox"/> 16" | |

Note: For Corner or Tee, state width of block walls.

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(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle -alytle@mcgonigalconstruction.ca
Telephone Number: (613) 623-3613

SUPPLIER : Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER : CRH
(name & address) 2391 Lakeshore Road
Mississauga, Ontario
Contact Name: John Hellyer
Telephone Number: 905-822-1653

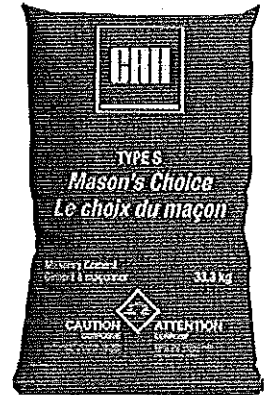
Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Type "S" Masonry



CRH Canada Group Inc.
 2391 Lakeshore Road West
 Mississauga, Ontario
 L5J 1K1 Canada

T. 905-822-1653
 F. 905-822-7445

www.crhcanada.com



GENERAL SPECIFICATION
Mason's Choice®
TYPE 'S' Masonry Cement

PRODUCT:

Grey, Type S Masonry Cement

Masonry Cement, Grey Type S as defined by CSA A3002

COMPOSITION:

Masonry cement Type S is a blended material containing Portland cement clinker and plasticizing materials. Type S cement can be used when higher-strength mortars are required to suit the project requirements.

PHYSICAL PROPERTIES: CSA A3002 Masonry Cement

	<u>Typical</u>
Fineness	
Retained on 45µm Sieve	7 %
Blaine	425
Soundness	
Expansion	0.1 %
Water Retention Value	82%
Setting Time	
Initial »	300 min
Final »	490 min.
Compressive Strength	
Age Tested 7 day	13 MPa
28 day	20 MPa
Air Content	17 %
Specific Gravity	2.99



SAFETY DATA SHEET

Section 1: Identification

1.1 Product Identifier:

Masonry Cement

Other means of identification:

- Masons Choice Type N
- Masonry Cement Type N
- Masons Choice Type S
- Masonry Cement Type S
- Masons Choice Type M
- Masonry Cement Type M

1.2 Recommended use and restrictions on use:

Identified uses:

Used to bind bricks and blocks in masonry construction, parging, plastering and stucco applications.

Restrictions on use:

Keep out of reach of children.

1.3 Supplier Identifier:

CRH Canada Group Inc.
2300 Steeles Ave. W., 4th Floor
Concord, ON, L4K 5X6
Canada

Information Telephone Number: 905-761-7100

CRH US
15225 Day Road
Dundee MI 48131
USA

Information Telephone Number: 734-529-4651

1.4 Emergency telephone number:

In Canada: 1-613-996-6666 CANUTEC (Call Collect or *666 Cellular) 24-hours
in USA: 800-451-8346 3E COMPANY 24-hours

Section 2: Hazards Identification

2.1 Classification:

Skin Corrosion Cat. 1; H314

Eye Damage Cat. 1; H318

Skin Sensitization Cat. 1; H317

Specific Target Organ Toxicity, Single Exposure, Cat. 3; H335

Carcinogenicity (inhalation) Cat. 1; H350

Specific Target Organ Toxicity, Repeated Exposure (inhalation), Cat. 1; H372

2.2 Label elements:



Danger.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause respiratory irritation.

May cause cancer if inhaled.

Causes damage to lungs through prolonged or repeated exposure if inhaled.

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts.

Wash hands and exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves, protective clothing, and eye protection or face protection.



SAFETY DATA SHEET

Section 2: Hazards Identification

2.2 Label elements: (continued)

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
 If skin irritation or rash occurs: Get medical attention.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
 IF exposed or concerned: Get medical attention.

Storage

Store locked up.

Disposal

Recycle and or dispose of contents and containers in accordance with local, regional, national and international regulations.

2.3 Other hazards:

Dusts from this product, when combined with water or sweat, produce a corrosive alkaline solution. The potential exists for static build-up and static discharge when moving cement powders through a plastic, nonconductive or non-grounded pneumatic conveyance system. Static discharge may result in damage to equipment and injury to workers.

Section 3: Composition/Information on Ingredients

Chemical Name	Common name / Other identifiers	CAS No.	Wt. %	GHS Classification
Portland Cement	Cement	65997-15-1	40 - 75	Skin Irrit. 2; H315 Eye Dam. 1; H318
Limestone	Limestone	1317-65-3	20 - 60	Not classified
Calcium hydroxide	Hydrated lime	1305-62-0	0 - 20	Skin Corr. 1; H314 Eye Dam. 1; H318 STOT SE 3; H335
Magnesium oxide	Magnesium oxide	1309-48-4	0 - 10	Not classified
Calcium sulphate	Gypsum	13397-24-5	0 - 5	Not classified
Calcium oxide	Lime, Quicklime	1305-78-8	0 - 4	Skin Corr. 1; H314 Eye Dam. 1; H318
Crystalline silica, Quartz	Silicon dioxide	14808-60-7	0.1 - 2	Carc. 1; H350 STOT RE1; H372
Chromate compounds	Not available	Not available	Cr VI=6.8 µg/g Trace Equivalent of 6.8 ppm	Not available
Nickel compounds	Not available	Not available	trace	Not available



SAFETY DATA SHEET

Section 4: First Aid Measures

4.1 Description of first aid measures:

Precautions: First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take precautions to ensure your own safety before attempting rescue, (e.g. wear appropriate protective equipment).

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of dry cement requires immediate medical attention. Call a poison center or doctor. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Eye Contact: Immediately rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or Doctor. Take care not to rinse contaminated water into the unaffected eye or onto face.

Skin Contact: Take off immediately all contaminated clothing. Rinse skin with water or shower. Get medical attention immediately. Heavy exposure to dry cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated promptly by a doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention immediately or transport victim to an emergency treatment center.

4.2 Most important symptoms and effects, both acute and delayed:

Inhalation: High concentrations of airborne dusts are severely irritating to the upper respiratory tract with symptoms such as coughing, sneezing and shortness of breath. Long-term inhalation exposure to dusts containing respirable size crystalline silica can cause silicosis and lung cancer.

Eye Contact: Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Solid particles react with moisture in the eye to form clumps of moist compound which may be difficult to remove.

Skin Contact: Dusts from this product, when combined with water or sweat, produce a severely irritating alkaline solution and burning of the skin. Wet Portland cement can cause caustic burns, sometimes referred to as cement burns. Cement burns may result in blisters, dead or hardened skin, or black or green skin. In severe cases, these burns may extend to the bone and cause disfiguring scars or disability.

Workers cannot rely on pain or discomfort to alert them to cement burns because cement burns may not cause immediate pain or discomfort. By the time the worker becomes aware of a cement burn, much damage has already been done. Cement burns can get worse even after skin contact with cement has ended. Any person experiencing a cement burn is advised to see a health care professional immediately.

May cause an allergic skin reaction from trace amounts of sensitizing metals in cement. Symptoms of an allergy range from mild rashes to severe skin ulcers.

Ingestion: Severely irritating to the mouth, throat and gastro-intestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

4.3 Immediate medical attention and special treatment needed:

Corrosive material; get immediate medical attention if inhaled, if swallowed or if in eyes.

Section 5: Firefighting Measures

5.1 Extinguishing media:

Use extinguishing media appropriate to the surrounding fire conditions. Use flooding quantities of water as a spray.

Unsuitable extinguishing media: Use caution when using water. Do not get water inside closed containers; contact with water will generate heat. Water jet may cause spattering of the corrosive solution. Use caution when using CO₂; it may scatter the dry powder.



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5.2 Specific hazards arising from the product:

Product is not flammable or combustible.
Bulk powder of this product may heat spontaneously when damp with water.
Corrosive; reacts with water releasing heat and forming an alkaline solution.

5.3 Special protective equipment and precautions for firefighters:

As for any fire, evacuate the area and fight the fire from a safe distance. Firefighters must wear full protective equipment including self-contained breathing apparatus with chemical protection clothing when firefighters are exposed to decomposition products from this material.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment, including an appropriate respirator as indicated in Section 8. Isolate spill area, preventing entry by unauthorized persons. Do not touch spilled material. Do not breathe dusts.

6.2 Environmental precautions:

Avoid releases to the environment and prevent material from entering sewers, natural waterways or storm water management systems.

6.3 Methods and material for containment and cleaning up:

Move containers from spill area. Avoid dust generation and prevent wind dispersal. Do not dry sweep or blow with compressed air. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labelled waste container. Small spills may be picked up with a damp mop.

6.4 Additional Information:

See Section 8 for information on selection of personal protective equipment.
See Section 13 for information on disposal of spilled product and contaminated absorbents.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Before handling, it is important that engineering controls are operating, protective equipment requirements and personal hygiene measures are being followed. People working with this chemical should be properly trained regarding its hazards and its safe use.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts.

Wash hands and exposed skin thoroughly after handling. Wash with plenty of water and pH neutral soap; do not use waterless hand cleaners such as alcohol-based gels. Clean nail beds and creases between fingers. Dry hands thoroughly with a clean towel before putting on gloves.

Avoid wearing watches and rings at work; wet cement can collect next to the skin and cause burns.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Prevent eye contact: Wear protective gloves, protective clothing and eye protection or face protection.

Follow good practices for safe glove removal.

Static Hazard: Properly ground all pneumatic conveyance systems. Static discharge may result in damage to equipment and injury to workers.

Do not enter a confined space that stores or contains Portland cement unless appropriate procedures and protections are in place. Cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

7.2 Conditions for safe storage:

Store in a dry, well-ventilated area, away from incompatible materials. Keep containers closed.

Protect from moisture/humidity.

Store in a place accessible by authorized persons only.

Store away from food and animal feed.

Keep out of reach of children.



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Section 8: Exposure Controls / Personal Protection

8.1 Control parameters:

Occupational Exposure Limits: Consult local authorities for acceptable exposure limits.

Ingredient	ACGIH® TLV®	U.S. OSHA PEL	Ontario (Canada) TWA
Portland cement (respirable)*	1 mg/m ³	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH® TVL®
Calcium oxide	2 mg/m ³	5 mg/m ³	Refer to ACGIH® TVL®
Calcium hydroxide	5 mg/m ³	5 mg/m ³	Refer to ACGIH® TVL®
Magnesium oxide	10 mg/m ³	15 mg/m ³ (total dust)	Refer to ACGIH® TVL®
Limestone	Not available	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Not available
Calcium sulphate	10 mg/m ³	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH® TVL®
Crystalline silica (Quartz)	0.025 mg/m ³ (respirable)	quartz (total dust): 30 mg/m ³ / (%SiO ₂ + 2) quartz (respirable): 10 mg/m ³ / (%SiO ₂ + 2)	0.1 mg/m ³ (respirable) Designated Substance

* value for particulate matter containing no asbestos and less than 1% crystalline silica.

Other Exposure Limits:

NIOSH REL for Portland Cement = 10 mg/m³ IDLH (Immediately Dangerous to Life or Health) = 5 000 mg/m³
NIOSH REL for Calcium oxide = 2 mg/m³ IDLH = 25 mg/m³

8.2 Exposure controls:

Engineering Controls: Handle product in closed system or area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Ensure regular cleaning of equipment, work area and clothing.

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection. Have equipment available for use in emergencies such as spills or fire.

8.3 Individual Protection Measures:

Eye/Face Protection: Wear approved safety glasses with side-shields or chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to airborne dusts. Contact lenses should not be worn.

Skin Protection: Wear waterproof, snug-fitting alkali-resistant gloves, boots, knee and elbow pads to prevent skin exposure. Wear protective clothing with long-sleeves and long pants. Protective clothing can be taped inside gloves and boots. Evaluate resistance under conditions of use and maintain protective clothing carefully. Contact safety supplier for specifications.

Respiratory Protection: Approved respiratory protective equipment (RPE) is required. An approved respirator, N95 rating or higher, must be available in case of accidental releases. Consult with respirator manufacturer to determine respirator selection, use and limitations.

A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other Protection: Have adequate washing facilities and eyewash fountain readily available in the work area for immediate emergency use.

Every attempt should be made to avoid skin and eye contact with cement. Do not get powder inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Wash clothing and shoes thoroughly before reuse.

Do not eat, drink or smoke where this material is handled, stored and processed. Wash hands thoroughly before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Environmental Exposure Controls: Emissions from ventilation or work process equipment should be monitored to ensure they comply with the requirements of environmental protection legislation.



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OSHA guidance for Portland Cement:

Good Practices for Glove Selection and Use

- Provide the proper gloves for employees who may come into contact with wet Portland cement. Consult the glove supplier or the cement manufacturer's MSDS for help in choosing the proper gloves. Butyl or nitrile gloves (rather than cotton or leather gloves) are frequently recommended for caustic materials such as Portland cement.
- Use only well-fitting gloves. Loose-fitting gloves let cement in. Often the use of gloves and clothing makes exposure worse when cement gets inside or soaks through the garment. Use glove liners for added comfort.
- Wash your hands before putting on gloves. Wash your hands *every time* that you remove your gloves.
- Dry your hands with a clean cloth or paper towel before putting on gloves.
- Protect your arms and hands by wearing a long sleeve shirt with the sleeves duct-taped to your gloves to prevent wet cement from getting inside the gloves. Cement trapped against the skin inside a glove or boot can cause a cement burn.
- Follow proper procedures for removing gloves, whether reusing or disposing them.
- Clean reusable gloves after use. Before removing gloves, clean the outside by rinsing or wiping off any wet cement. Follow the manufacturer's instructions for glove cleaning. Place clean and dry gloves in a plastic storage bag and store them in a cool, dry place away from tools.
- Throw out grossly contaminated or worn-out gloves.
- Keep the inside of gloves clean and dry.
- Do not use barrier creams or "invisible gloves." These products are not effective in protecting the skin from Portland cement hazards.

Good Practices for Use of Boots and Other Protective Clothing and Equipment

- Wear waterproof boots when necessary to prevent wet cement from coming into contact with your skin. It is as important to protect your legs, ankles, and feet from skin contact with wet cement as it is to protect your hands.
- Boots need to be high enough to prevent wet cement from getting inside. Tuck pants inside and wrap duct tape around the top of the boots to prevent wet cement from entering.
- Select boots that are sturdy, strong enough to resist punctures and tears, and slip resistant.
- Change protective boots if they become ineffective or contaminated on the inside with wet cement while in use.
- Change out of any work clothes that become contaminated with wet cement and keep contaminated work clothes separate from your street clothes.
- When kneeling on wet cement use waterproof kneepads or dry kneeboards to prevent the knees from coming into contact with the cement.
- Wear proper eye protection when working with Portland cement.



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Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance:	Solid; grey or white powder
Odour:	Odourless
Odour threshold:	Not applicable
pH:	>12
Melting point/freezing point:	Not applicable
Initial boiling point and boiling range:	Not applicable
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability:	Not flammable or combustible
Upper/lower flammability or explosive limits:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	3.1 – 3.2 (water = 1)
Solubility (ies):	Slightly soluble in water (0.1 – 1%)
Partition coefficient (n-octanol/water):	Not applicable
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not applicable

Section 10: Stability and Reactivity

10.1 Reactivity:

Reacts slowly with water forming hydrated compounds, releasing heat and a strongly alkaline solution.

10.2 Chemical Stability:

Stable at normal ambient and anticipated storage and handling conditions.

10.3 Possibility of Hazardous Reactions:

Aqueous solutions are highly alkaline and may corrode aluminum.

10.4 Conditions to Avoid:

Avoid unintentional contact with water / moisture and with strong acids and other incompatible materials.

10.5 Incompatible Materials:

Strong acids - Incompatible with strong acids; may react vigorously.

Water - reaction generates heat.

Aluminum – Aluminum powder and other alkali earth elements will react in the presence of water liberating extremely flammable hydrogen gas. Calcium oxide is corrosive to aluminum metal.

Fluoride compounds – cement dissolves in HF producing corrosive silicon tetrafluoride gas.

Reacts with Ammonium salts.

10.6 Hazardous Decomposition Products:

In contact with water and moisture, generates corrosive calcium hydroxide.



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Section 11: Toxicological Information

11.1 Likely routes of exposure:

Eye and Skin contact, Inhalation of dust.

11.2 Acute toxicity data:

Data not available for the mixture.

Skin corrosion / irritation:

Based on information for Portland Cement and Calcium oxide : Human experience has shown Portland cement can cause caustic burns when in prolonged contact with the skin.
Irritating or corrosive to mouth, throat and gastro-intestinal tract.

Serious eye damage / irritation:

Based on information for Portland Cement and Calcium oxide: Causes serious eye damage and possible blindness.
Damage may be permanent if treatment is not immediate.

STOT (Specific Target Organ Toxicity) Single Exposure:

Breathing dusts causes respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.

Aspiration hazard:

This material is corrosive; if aspiration into the lungs occurs during vomiting, severe lung damage may result.

11.3 Chronic toxicity:

STOT (Specific Target Organ Toxicity) Repeated Exposure:

Prolonged and repeated breathing of dust may cause lung disease. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.

Contains crystalline silica. Long-term exposure to fine airborne crystalline silica dust may cause silicosis a form of pulmonary fibrosis that can cause shortness of breath, cough and reduced lung function. Particles with diameters less than 1 micrometer are considered most hazardous.

Respiratory and / or skin sensitization:

Product may contain trace concentrations of Chromate and Nickel compounds that can cause an allergic skin reaction, allergic contact dermatitis, or ACD. Once sensitized, brief skin contact with very small amounts of Cr VI may result in inflammation, rash, itching or severe skin ulcers. ACD is long-lasting and employees can remain sensitized to Chromium VI for many years.

Not known to be a respiratory sensitizer.

Germ cell mutagenicity:

Not available

Reproductive effects:

Not available

Developmental effects:

Not available

Effects on or via lactation:

Data are not available.

Carcinogenicity:

Portland cement is not classifiable as a human carcinogen.

Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity.

Interactions with other chemicals:

Not available



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Section 12: Ecological Information

12.1 Toxicity:

Harmful to aquatic life. Contact with water forms an alkaline solution. Avoid release to the environment.

Data for Calcium oxide:

96 hour LC₅₀ freshwater fish *Cyprinus carpio* = 1 070 mg/L (static).

Chronic 46 day NOEC freshwater fish *Oreochromis niloticus* juvenile(fledgling, hatchling, weanling)= 100 mg/L

12.2 Persistence and degradability:

Not readily biodegradable

12.3 Bioaccumulative potential:

Not available

12.4 Mobility in soil:

Not available

Section 13: Disposal Considerations

13.1 Disposal methods:

Dispose as an inert, non-metallic mineral in accordance with applicable federal, state/provincial and local regulations. Avoid generating dust during disposal. Avoid contact with skin and eyes. See Section 8 for personal protection measures. Prevent material from entering sewers, drains, ditches or waterways.

Section 14: Transport Information

14.1 UN Number

Cement is not covered by international transport regulations (IMDG, UN Model Regulations).

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not available

14.6 Special precautions for user

Not available

14.7 U.S. Hazardous Materials Regulation (DOT 49CFR):

Not regulated except for transport by aircraft.

14.8 Canada Transportation of Dangerous Goods (TDG) Regulations:

Not regulated except for transport by aircraft.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

USA

TSCA Status:

Substances are listed on the TSCA inventory or are exempt.

Canada

NSNR Status:

Substances are listed on the on the DSL or are exempt.



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International Inventories:

- Australia:** Substances are listed on the Inventory of Chemical Substances (AICS).
- China:** Substances are listed on the Inventory. Portland cement IECSC 25714.
- European Union:** Portland Cement EC # 266-043-4. All other substances are listed on EINECS.
- Japan:** Not available.
- Korea:** Substances are listed on the inventory. Portland cement KE-29067
- Mexico:** Substances are listed on the inventory (INSQ) or are exempt.
- New Zealand:** Substances are listed on the Inventory.
- Philippines:** Substances are listed on the Inventory of Chemicals and Chemical Substances (PICCS).

Section 16: Other Information

Revision date:

February 25, 2016

References and sources for data:

CCOHS, Cheminfo
RTECS, Registry of Toxic Effects of Chemical Substances
NIOSH, Pocket Guide to Chemical Hazards.
Portland Cement Association

Methods for classification of mixtures:

USA: Haz Com Standard 29 CFR 1910.1200 (2012)
Canada: Controlled Products Regulations.
UNECE, Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Legend to abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists
GHS- Globally Harmonized System for Classification and Labeling.
OEL– Occupational exposure limit
OSHA - Occupational Safety and Health Administration
TWA – Time weighted average
TLV - Threshold Limit Value
WHMIS – Canada Workplace Hazardous Materials Information System.

Additional Information:

While the information provided in this document is believed to provide a useful summary of the hazards of Masonry cement and Portland cement, the information in this document cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. The data furnished in this document do not address hazards that may be posed by other materials when mixed with Masonry cement. Users should review other relevant safety data sheets before working with this product. The information presented in the Safety Data Sheet is based on current knowledge and publications and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not be interpreted as guaranteeing any specific property of the product.

SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY CRH CANADA GROUP INC. / CRH US., EXCEPT THAT THE PRODUCT SHALL CONFORM TO CONTRACTED SPECIFICATIONS.

HOBIN:
ITEM NO LONGER REQUIRED, AS PER CIR#25 AND SI-011.

SHOP DRAWING REVIEW

REVIEWED
REVIEWED AS NOTED
REVISE AND RESUBMIT



"This review is for the sole purpose of ascertaining conformance with the general design concept for architectural features only, and does not in any way constitute review of the design of engineering elements which form part of the Contract Documents prepared by others. This review shall not mean that the Architect approves the detail design inherent in the shop drawings. This responsibility shall remain with the Contractor submitting same, and such review shall not relieve the Contractor of his responsibility for errors or omissions in the shop drawings or of his responsibility for meeting all requirements of the Contract Documents. The Contractor is responsible for dimensions to be confirmed and correlated at the job site, for information that pertains solely to fabrication processes, or to techniques of construction and installation and for co-ordination for the work of all trades."

M'GONIGAL CONSTRUCTION LTD.

245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Telephone (613) 623-3613 Fax (613) 623-8705

By: Michelle Cataldo Date: Feb. 6, 2019
HOBIN ARCHITECTURE INCORPORATED

SHOP DRAWING & SAMPLE SUBMITTAL

Project Title: Turnbull School
Project Number: _____
Date: January 10th, 2019

SUBCONTRACTOR: McGonigal Construction Ltd.
(name & address) 245 Fifth Avenue, Arnprior, Ontario K7S 3M3
Contact Name: Art Lytle -alytle@mcgonigalconstruction.ca
Telephone Number: (613) 623-3613

SUPPLIER: Merkley Supply
(name & address) 100 Bayview Road
Ottawa, Ontario
Contract Name: Paul Mutter
Telephone Number: 613-728-2693

MANUFACTURER: CRH
(name & address) 2391 Lakeshore Road
Mississauga, Ontario
Contact Name: John Hellyer
Telephone Number: 905-822-1653

Specification Name: Masonry
Specification Section: 4200
Paragraph Number: _____
Product Submission: Type "N" Masonry



CRH Canada Group Inc.
2391 Lakeshore Road West
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F. 905-822-7445

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GENERAL SPECIFICATION

Mason's Choice® TYPE 'N' Masonry Cement



PRODUCT:

Grey, Type N Masonry Cement

Masonry Cement, Grey Type N as defined by CSA A3002

COMPOSITION:

Masonry cement Type N is a blended material containing Portland cement clinker and plasticizing materials. Type N cement can be used when high-strength mortar is not required to suit the project requirements.

PHYSICAL PROPERTIES - CSA A3002:

	<u>Typical</u>
Fineness	
Retained on 45µm Sieve	7 %
Blaine	575
Soundness	
Expansion	0.1 %
Water Retention Value	82%
Setting Time	
Initial »	360 min
Final »	580 min.
Compressive Strength	
Age Tested 7 day	6 MPa
28 day	10 MPa
Air Content	19 %
Specific Gravity	2.90



SAFETY DATA SHEET

Section 1: Identification

1.1 Product Identifier:

Masonry Cement

Other means of identification:

- Masons Choice Type N
- Masonry Cement Type N
- Masons Choice Type S
- Masonry Cement Type S
- Masons Choice Type M
- Masonry Cement Type M

1.2 Recommended use and restrictions on use:

Identified uses:

Used to bind bricks and blocks in masonry construction, parging, plastering and stucco applications.

Restrictions on use:

Keep out of reach of children.

1.3 Supplier identifier:

CRH Canada Group Inc.
2300 Steeles Ave. W., 4th Floor
Concord, ON, L4K 5X6
Canada

Information Telephone Number: 905-761-7100

CRH US
15225 Day Road
Dundee MI 48131
USA

Information Telephone Number: 734-529-4651

1.4 Emergency telephone number:

In Canada: 1-613-996-6666 CANUTEC (Call Collect or *666 Cellular) 24-hours

In USA: 800-451-8346 3E COMPANY 24-hours

Section 2: Hazards Identification

2.1 Classification:

Skin Corrosion Cat. 1; H314

Eye Damage Cat. 1; H318

Skin Sensitization Cat. 1; H317

Specific Target Organ Toxicity, Single Exposure, Cat. 3; H335

Carcinogenicity (inhalation) Cat. 1; H350

Specific Target Organ Toxicity, Repeated Exposure (inhalation), Cat. 1; H372

2.2 Label elements:



Danger.

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause respiratory irritation.

May cause cancer if inhaled.

Causes damage to lungs through prolonged or repeated exposure if inhaled.

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts.

Wash hands and exposed skin thoroughly after handling.

Do not eat, drink or smoke when using this product.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Wear protective gloves, protective clothing, and eye protection or face protection.



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Section 2: Hazards Identification

2.2 Label elements: (continued)

Response

IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Wash contaminated clothing before reuse.
 If skin irritation or rash occurs: Get medical attention.
 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER or doctor.
 IF exposed or concerned: Get medical attention.

Storage

Store locked up.

Disposal

Recycle and or dispose of contents and containers in accordance with local, regional, national and international regulations.

2.3 Other hazards:

Dusts from this product, when combined with water or sweat, produce a corrosive alkaline solution. The potential exists for static build-up and static discharge when moving cement powders through a plastic, nonconductive or non-grounded pneumatic conveyance system. Static discharge may result in damage to equipment and injury to workers.

Section 3: Composition/Information on Ingredients

Chemical Name	Common name / Other identifiers	CAS No.	Wt. %	GHS Classification
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Calcium hydroxide	Hydrated lime	1305-62-0	0 - 20	Skin Corr. 1; H314 Eye Dam. 1; H318 STOT SE 3; H335
Magnesium oxide	Magnesium oxide	1309-48-4	0 - 10	Not classified
Calcium sulphate	Gypsum	13397-24-5	0 - 5	Not classified
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Crystalline silica, Quartz	Silicon dioxide	14808-60-7	0.1 - 2	Carc. 1; H350 STOT RE1; H372
Chromate compounds	Not available	Not available	Cr VI=6.8 µg/g Trace Equivalent of 6.8 ppm	Not available
Nickel compounds	Not available	Not available	trace	Not available



SAFETY DATA SHEET

Section 4: First Aid Measures

4.1 Description of first aid measures:

Precautions: First aid providers should avoid direct contact with this chemical. Wear chemical protective gloves, if necessary. Take precautions to ensure your own safety before attempting rescue, (e.g. wear appropriate protective equipment).

Inhalation: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of dry cement requires immediate medical attention. Call a poison center or doctor. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Eye Contact: Immediately rinse eyes cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or Doctor. Take care not to rinse contaminated water into the unaffected eye or onto face.

Skin Contact: Take off immediately all contaminated clothing. Rinse skin with water or shower. Get medical attention immediately. Heavy exposure to dry cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated promptly by a doctor.

Ingestion: Rinse mouth. Do NOT induce vomiting. Obtain medical attention immediately or transport victim to an emergency treatment center.

4.2 Most important symptoms and effects, both acute and delayed:

Inhalation: High concentrations of airborne dusts are severely irritating to the upper respiratory tract with symptoms such as coughing, sneezing and shortness of breath. Long-term inhalation exposure to dusts containing respirable size crystalline silica can cause silicosis and lung cancer.

Eye Contact: Severely irritating in contact with eyes. Causes eye damage which may be permanent and may cause blindness. Solid particles react with moisture in the eye to form clumps of moist compound which may be difficult to remove.

Skin Contact: Dusts from this product, when combined with water or sweat, produce a severely irritating alkaline solution and burning of the skin. Wet Portland cement can cause caustic burns, sometimes referred to as cement burns. Cement burns may result in blisters, dead or hardened skin, or black or green skin. In severe cases, these burns may extend to the bone and cause disfiguring scars or disability.

Workers cannot rely on pain or discomfort to alert them to cement burns because cement burns may not cause immediate pain or discomfort. By the time the worker becomes aware of a cement burn, much damage has already been done. Cement burns can get worse even after skin contact with cement has ended. Any person experiencing a cement burn is advised to see a health care professional immediately.

May cause an allergic skin reaction from trace amounts of sensitizing metals in cement. Symptoms of an allergy range from mild rashes to severe skin ulcers.

Ingestion: Severely irritating to the mouth, throat and gastro-intestinal system if swallowed. Symptoms may include severe pain and burning of the mouth, throat, esophagus and gastrointestinal tract with nausea, vomiting and diarrhea. If aspiration into the lungs occurs during vomiting, severe lung damage may result.

4.3 Immediate medical attention and special treatment needed:

Corrosive material; get immediate medical attention if inhaled, if swallowed or if in eyes.

Section 5: Firefighting Measures

5.1 Extinguishing media:

Use extinguishing media appropriate to the surrounding fire conditions. Use flooding quantities of water as a spray.

Unsuitable extinguishing media: Use caution when using water. Do not get water inside closed containers; contact with water will generate heat. Water jet may cause spattering of the corrosive solution. Use caution when using CO₂; it may scatter the dry powder.



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5.2 Specific hazards arising from the product:

Product is not flammable or combustible.
Bulk powder of this product may heat spontaneously when damp with water.
Corrosive; reacts with water releasing heat and forming an alkaline solution.

5.3 Special protective equipment and precautions for firefighters:

As for any fire, evacuate the area and fight the fire from a safe distance. Firefighters must wear full protective equipment including self-contained breathing apparatus with chemical protection clothing when firefighters are exposed to decomposition products from this material.

Section 6: Accidental Release Measures

6.1 Personal precautions, protective equipment and emergency procedures:

Wear adequate personal protective equipment, including an appropriate respirator as indicated in Section 8. Isolate spill area, preventing entry by unauthorized persons. Do not touch spilled material. Do not breathe dusts.

6.2 Environmental precautions:

Avoid releases to the environment and prevent material from entering sewers, natural waterways or storm water management systems.

6.3 Methods and material for containment and cleaning up:

Move containers from spill area. Avoid dust generation and prevent wind dispersal. Do not dry sweep or blow with compressed air. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labelled waste container. Small spills may be picked up with a damp mop.

6.4 Additional Information:

See Section 8 for information on selection of personal protective equipment.
See Section 13 for information on disposal of spilled product and contaminated absorbents.

Section 7: Handling and Storage

7.1 Precautions for safe handling:

Before handling, it is important that engineering controls are operating, protective equipment requirements and personal hygiene measures are being followed. People working with this chemical should be properly trained regarding its hazards and its safe use.

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dusts.

Wash hands and exposed skin thoroughly after handling. Wash with plenty of water and pH neutral soap; do not use waterless hand cleaners such as alcohol-based gels. Clean nail beds and creases between fingers. Dry hands thoroughly with a clean towel before putting on gloves.

Avoid wearing watches and rings at work; wet cement can collect next to the skin and cause burns.

Use only outdoors or in a well-ventilated area.

Contaminated work clothing should not be allowed out of the workplace.

Prevent eye contact: Wear protective gloves, protective clothing and eye protection or face protection.

Follow good practices for safe glove removal.

Static Hazard: Properly ground all pneumatic conveyance systems. Static discharge may result in damage to equipment and injury to workers.

Do not enter a confined space that stores or contains Portland cement unless appropriate procedures and protections are in place. Cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

7.2 Conditions for safe storage:

Store in a dry, well-ventilated area, away from incompatible materials. Keep containers closed.

Protect from moisture/humidity.

Store in a place accessible by authorized persons only.

Store away from food and animal feed.

Keep out of reach of children.



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Section 8: Exposure Controls / Personal Protection

8.1 Control parameters:

Occupational Exposure Limits: Consult local authorities for acceptable exposure limits.

Ingredient	ACGIH® TLV®	U.S. OSHA PEL	Ontario (Canada) TWA
Portland cement (respirable)*	1 mg/m ³	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH® TVL®
Calcium oxide	2 mg/m ³	5 mg/m ³	Refer to ACGIH® TVL®
Calcium hydroxide	5 mg/m ³	5 mg/m ³	Refer to ACGIH® TVL®
Magnesium oxide	10 mg/m ³	15 mg/m ³ (total dust)	Refer to ACGIH® TVL®
Limestone	Not available	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Not available
Calcium sulphate	10 mg/m ³	15 mg/m ³ (total dust) 5 mg/m ³ (respirable)	Refer to ACGIH® TVL®
Crystalline silica (Quartz)	0.025 mg/m ³ (respirable)	quartz (total dust): 30 mg/m ³ / (%SiO ₂ + 2) quartz (respirable): 10 mg/m ³ / (%SiO ₂ + 2)	0.1 mg/m ³ (respirable) Designated Substance

* value for particulate matter containing no asbestos and less than 1% crystalline silica.

Other Exposure Limits:

NIOSH REL for Portland Cement = 10 mg/m³ IDLH (Immediately Dangerous to Life or Health) = 5 000 mg/m³
NIOSH REL for Calcium oxide = 2 mg/m³ IDLH = 25 mg/m³

8.2 Exposure controls:

Engineering Controls: Handle product in closed system or area provided with appropriate exhaust ventilation. Handle in accordance with good industrial hygiene and safety practice. Ensure regular cleaning of equipment, work area and clothing.

If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable personal protective equipment including approved respiratory protection. Have equipment available for use in emergencies such as spills or fire.

8.3 Individual Protection Measures:

Eye/Face Protection: Wear approved safety glasses with side-shields or chemical safety goggles. Wear a face-shield or full-face respirator when needed to prevent exposure to airborne dusts. Contact lenses should not be worn.

Skin Protection: Wear waterproof, snug-fitting alkali-resistant gloves, boots, knee and elbow pads to prevent skin exposure. Wear protective clothing with long-sleeves and long pants. Protective clothing can be taped inside gloves and boots. Evaluate resistance under conditions of use and maintain protective clothing carefully. Contact safety supplier for specifications.

Respiratory Protection: Approved respiratory protective equipment (RPE) is required. An approved respirator, N95 rating or higher, must be available in case of accidental releases. Consult with respirator manufacturer to determine respirator selection, use and limitations.

A respiratory protection program that meets the regulatory requirement, such as OSHA's 29 CFR 1910.134, ANSI Z88.2 or Canadian Standards Association (CSA) Standard Z94.4, must be followed whenever workplace conditions warrant a respirator's use.

Other Protection: Have adequate washing facilities and eyewash fountain readily available in the work area for immediate emergency use.

Every attempt should be made to avoid skin and eye contact with cement. Do not get powder inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Wash clothing and shoes thoroughly before reuse.

Do not eat, drink or smoke where this material is handled, stored and processed. Wash hands thoroughly before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas.

Environmental Exposure Controls: Emissions from ventilation or work process equipment should be monitored to ensure they comply with the requirements of environmental protection legislation.



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OSHA guidance for Portland Cement:

Good Practices for Glove Selection and Use

- Provide the proper gloves for employees who may come into contact with wet Portland cement. Consult the glove supplier or the cement manufacturer's MSDS for help in choosing the proper gloves. Butyl or nitrile gloves (rather than cotton or leather gloves) are frequently recommended for caustic materials such as Portland cement.
- Use only well-fitting gloves. Loose-fitting gloves let cement in. Often the use of gloves and clothing makes exposure worse when cement gets inside or soaks through the garment. Use glove liners for added comfort.
- Wash your hands before putting on gloves. Wash your hands *every time* that you remove your gloves.
- Dry your hands with a clean cloth or paper towel before putting on gloves.
- Protect your arms and hands by wearing a long sleeve shirt with the sleeves duct-taped to your gloves to prevent wet cement from getting inside the gloves. Cement trapped against the skin inside a glove or boot can cause a cement burn.
- Follow proper procedures for removing gloves, whether reusing or disposing them.
- Clean reusable gloves after use. Before removing gloves, clean the outside by rinsing or wiping off any wet cement. Follow the manufacturer's instructions for glove cleaning. Place clean and dry gloves in a plastic storage bag and store them in a cool, dry place away from tools.
- Throw out grossly contaminated or worn-out gloves.
- Keep the inside of gloves clean and dry.
- Do not use barrier creams or "invisible gloves." These products are not effective in protecting the skin from Portland cement hazards.

Good Practices for Use of Boots and Other Protective Clothing and Equipment

- Wear waterproof boots when necessary to prevent wet cement from coming into contact with your skin. It is as important to protect your legs, ankles, and feet from skin contact with wet cement as it is to protect your hands.
- Boots need to be high enough to prevent wet cement from getting inside. Tuck pants inside and wrap duct tape around the top of the boots to prevent wet cement from entering.
- Select boots that are sturdy, strong enough to resist punctures and tears, and slip resistant.
- Change protective boots if they become ineffective or contaminated on the inside with wet cement while in use.
- Change out of any work clothes that become contaminated with wet cement and keep contaminated work clothes separate from your street clothes.
- When kneeling on wet cement use waterproof kneepads or dry kneeboards to prevent the knees from coming into contact with the cement.
- Wear proper eye protection when working with Portland cement.



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Section 9: Physical and Chemical Properties

9.1 Information on basic physical and chemical properties:

Appearance:	Solid; grey or white powder
Odour:	Odourless
Odour threshold:	Not applicable
pH:	>12
Melting point/freezing point:	Not applicable
Initial boiling point and boiling range:	Not applicable
Flash point:	Not applicable
Evaporation rate:	Not applicable
Flammability:	Not flammable or combustible
Upper/lower flammability or explosive limits:	Not applicable
Vapour pressure:	Not applicable
Vapour density:	Not applicable
Relative density:	3.1 – 3.2 (water = 1)
Solubility (ies):	Slightly soluble in water (0.1 – 1%)
Partition coefficient (n-octanol/water):	Not applicable
Auto-ignition temperature:	Not available
Decomposition temperature:	Not available
Viscosity:	Not applicable

Section 10: Stability and Reactivity

10.1 Reactivity:

Reacts slowly with water forming hydrated compounds, releasing heat and a strongly alkaline solution.

10.2 Chemical Stability:

Stable at normal ambient and anticipated storage and handling conditions.

10.3 Possibility of Hazardous Reactions:

Aqueous solutions are highly alkaline and may corrode aluminum.

10.4 Conditions to Avoid:

Avoid unintentional contact with water / moisture and with strong acids and other incompatible materials.

10.5 Incompatible Materials:

Strong acids - Incompatible with strong acids; may react vigorously.

Water - reaction generates heat.

Aluminum – Aluminum powder and other alkali earth elements will react in the presence of water liberating extremely flammable hydrogen gas. Calcium oxide is corrosive to aluminum metal.

Fluoride compounds – cement dissolves in HF producing corrosive silicon tetrafluoride gas.

Reacts with Ammonium salts.

10.6 Hazardous Decomposition Products:

In contact with water and moisture, generates corrosive calcium hydroxide.



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Section 11: Toxicological Information

11.1 Likely routes of exposure:

Eye and Skin contact, Inhalation of dust.

11.2 Acute toxicity data:

Data not available for the mixture.

Skin corrosion / irritation:

Based on information for Portland Cement and Calcium oxide: Human experience has shown Portland cement can cause caustic burns when in prolonged contact with the skin.
Irritating or corrosive to mouth, throat and gastro-intestinal tract.

Serious eye damage / Irritation:

Based on information for Portland Cement and Calcium oxide: Causes serious eye damage and possible blindness.
Damage may be permanent if treatment is not immediate.

STOT (Specific Target Organ Toxicity) Single Exposure:

Breathing dusts causes respiratory irritation. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.

Aspiration hazard:

This material is corrosive; if aspiration into the lungs occurs during vomiting, severe lung damage may result.

11.3 Chronic toxicity:

STOT (Specific Target Organ Toxicity) Repeated Exposure:

Prolonged and repeated breathing of dust may cause lung disease. The extent and severity of lung injury correlates with the length of exposure and dust concentration. Inflammation of the respiratory passages, ulceration and perforation of the nasal septum and pneumonia has been attributed to the inhalation of dust containing calcium oxide.

Contains crystalline silica. Long-term exposure to fine airborne crystalline silica dust may cause silicosis a form of pulmonary fibrosis that can cause shortness of breath, cough and reduced lung function. Particles with diameters less than 1 micrometer are considered most hazardous.

Respiratory and / or skin sensitization:

Product may contain trace concentrations of Chromate and Nickel compounds that can cause an allergic skin reaction, allergic contact dermatitis, or ACD. Once sensitized, brief skin contact with very small amounts of Cr VI may result in inflammation, rash, itching or severe skin ulcers. ACD is long-lasting and employees can remain sensitized to Chromium VI for many years.
Not known to be a respiratory sensitizer.

Germ cell mutagenicity:

Not available

Reproductive effects:

Not available

Developmental effects:

Not available

Effects on or via lactation:

Data are not available.

Carcinogenicity:

Portland cement is not classifiable as a human carcinogen.
Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity.

Interactions with other chemicals:

Not available



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Section 12: Ecological Information

12.1 Toxicity:

Harmful to aquatic life. Contact with water forms an alkaline solution. Avoid release to the environment.

Data for Calcium oxide:

96 hour LC₅₀ freshwater fish *Cyprinus carpio* = 1 070 mg/L (static).

Chronic 46 day NOEC freshwater fish *Oreochromis niloticus* juvenile(fledgling, hatchling, weanling)= 100 mg/L

12.2 Persistence and degradability:

Not readily biodegradable

12.3 Bioaccumulative potential:

Not available

12.4 Mobility in soil:

Not available

Section 13: Disposal Considerations

13.1 Disposal methods:

Dispose as an inert, non-metallic mineral in accordance with applicable federal, state/provincial and local regulations.

Avoid generating dust during disposal. Avoid contact with skin and eyes. See Section 8 for personal protection measures.

Prevent material from entering sewers, drains, ditches or waterways.

Section 14: Transport Information

14.1 UN Number

Cement is not covered by international transport regulations (IMDG, UN Model Regulations).

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard class(es)

Not applicable

14.4 Packing group

Not applicable

14.5 Environmental hazards

Not available

14.6 Special precautions for user

Not available

14.7 U.S. Hazardous Materials Regulation (DOT 49CFR):

Not regulated except for transport by aircraft.

14.8 Canada Transportation of Dangerous Goods (TDG) Regulations:

Not regulated except for transport by aircraft.

Section 15: Regulatory Information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture:

USA

TSCA Status:

Substances are listed on the TSCA inventory or are exempt.

Canada

NSNR Status:

Substances are listed on the on the DSL or are exempt.



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International inventories:

- Australia:** Substances are listed on the Inventory of Chemical Substances (AICS).
- China:** Substances are listed on the Inventory. Portland cement IECSC 25714.
- European Union:** Portland Cement EC # 266-043-4. All other substances are listed on EINECS.
- Japan:** Not available.
- Korea:** Substances are listed on the inventory. Portland cement KE-29067
- Mexico:** Substances are listed on the inventory (INSQ) or are exempt.
- New Zealand:** Substances are listed on the Inventory.
- Philippines:** Substances are listed on the Inventory of Chemicals and Chemical Substances (PICCS).

Section 16: Other Information

Revision date:

February 25, 2016

References and sources for data:

CCOHS, Cheminfo
RTECS, Registry of Toxic Effects of Chemical Substances
NIOSH, Pocket Guide to Chemical Hazards.
Portland Cement Association

Methods for classification of mixtures:

USA: Haz Com Standard 29 CFR 1910.1200 (2012)
Canada: Controlled Products Regulations.
UNECE, Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

Legend to abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists
GHS- Globally Harmonized System for Classification and Labeling.
OEL– Occupational exposure limit
OSHA - Occupational Safety and Health Administration
TWA – Time weighted average
TLV - Threshold Limit Value
WHMIS – Canada Workplace Hazardous Materials Information System.

Additional information:

While the information provided in this document is believed to provide a useful summary of the hazards of Masonry cement and Portland cement, the information in this document cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. The data furnished in this document do not address hazards that may be posed by other materials when mixed with Masonry cement. Users should review other relevant safety data sheets before working with this product. The information presented in the Safety Data Sheet is based on current knowledge and publications and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not be interpreted as guaranteeing any specific property of the product.

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