HISTORIC DISTRICT COMMISSION
ADDITIONAL INFORMATION REQUEST

City of Detroit - Planning & Development Department
2 Woodward Avenue, Suite 808
Detroit, Michigan 48226

Date: 04/24/2026

Application Number: HDC2026-00167

APPLICANT & PROPERTY INFORMATION

NAME: Richard V. Akins		**COMPANY NAME:** Akins Construction, Inc.	
ADDRESS: 6565 E. Nevada	**CITY:** Detroit	**STATE:** MI	**ZIP:** 48234
PROJECT ADDRESS: 1450 Parker Street			
HISTORIC DISTRICT: West Village			

REQUESTED INFORMATION

We have received your application, but it is not yet complete for review. Please provide additional details based on the comments and questions listed below. Should you need to attach additional files per this request, use the paperclip icons at the end of this form. You may attach up to (5) files per icon up to 25MB:

Please upload the requested information here. This includes but is not limited to the project phases, information on the cast stone material and limestone replacement, temporary removal of windows, etc.
Let us know if you have any additional questions.

PSR: Bilqees 260424BS

APPLICANT RESPONSE

Response Date: 05/01/2026

Hello Bilqees,
Attached is my description of what we discussed last week onsite. I really need to get this going as soon as possible as I don't know how much longer this can go supported like this. Also the pictures of the brick sample card is taken against where we cleaned the brick using One Restore Restoration Cleaner. The color match looks good!
Call me if you have any questions.
Thanks for all your help!

Kind Regards,
Rich Akins

Akins Construction, Inc.

"Restoration Specialists"

Date: 4/23/26

Attention: Bilqees Salie
Planner I
Historic Preservation
Planning & Development
2 Woodward Ave. Suite 808
Detroit, MI 48226

Reference: 1450 Parker Street Phase 1 Masonry & Stone Repair.

Subject: Description of Work Scope in greater detail.

Bilqees,

It was a pleasure meeting with you and Audra Dye onsite on April 22, 2026. Pursuant to our discussions onsite I am hopefully addressing those items you wanted further clarification regarding Phase 1 work and the owners future intent of repairs.
The Parkstone Ramp Garage (1450 Parker Street) was designed by Janke, Venman & Krecke, Architects & Engineers in 1926. Below is a photo of the west elevation sometime after completion.

MICHIGAN ARCHITECT AND ENGINEER

PLATE 30

PARKSTONE RAMP GARAGE, DETROIT
JANKE, VENMAN & KRECKE, *ARCHITECTS & ENGINEERS*, DETROIT, MICH

6565 E. Nevada, Detroit, MI 48234 Phone: 810-217-3204 Email: richard@akinsconstruction.net
" A Detroit Based & Headquartered Small Business Company"

Akins Construction, Inc.

"Restoration Specialists"

West Elevation- Work Scope Area that required masonry support and temporary make safe from hazards.

Phase 1 work was necessitated by the brick bowing from the vertical plane and is currently a fall hazard. This is most likely the result of brick tie ins having sheared or corroded and no longer can perform their function, which over time has allowed the wall to bow due to plastic deformation loads which has affected the masonry in the phase 1 area only.

We have installed emergency bracing to slow the separation and make safe loose cast stone. The owner's intent is to effect repairs by removing broken & sheared brick, removing unsound areas of brick that are still able to be reused, removing mortar and reuse them as able. New bricks would be used to replace the ones that are unsalvageable which is manufactured by Bowerston and is a Masonic Blend Smooth as supplied by Belden Brick. If the quantity of unusable bricks is such that a patch quilt effect results which would take away from the original overall architectural visual intent, then the owner is amenable to using 100% new bricks in the phase 1 area to maintain a consistent visual appearance. Attachments are at end of documents which provide the brick data sheets. See samples of brick next to existing wall. Note after exhaustive efforts to find matching brick this is the closest match available to a brick that is 100 years old.

Photo 1 above approx. 2ft away with existing brick being cleaned using One Restore cleaner on 4/23/26
Photo 2 above approximately 12ft away brick hasn't been cleaned. (Earlier Photo)

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The masonry will be cleaned using One Restore as manufactured by Eaco Chem prior to performing restoration work to remove pollutants & other biologic debris. (See Attached Safety Data Sheet) Mortar has had petrographic analysis performed and mortar has been color matched and will be preblended to match the existing mortar in color and strength following ASTM & US National Park Service Restoration Tech Notes for this project.

In removing the brick, we will be inspecting the masonry lintel and will remove rust and apply two coats of a galvanized coating. Once cured we will apply Perma barrier flashing which will be fastened to the backup material using a termination bar with Zamac Hit pins and sealed using Bituthene mastic to seal the lap joints & top of the termination bar. Stainless Steel end dams will be placed along with weeps every 24 inches on center. If the cross section of the lintel is greater than 10%, we will remove the lintel that is deficient and install a new lintel matching the existing which will be hot dip galvanized. When rebuilding the wall, we will replace existing anchors with hot dipped galvanized anchors.

The cast stone on the west elevation is in an advanced state of disrepair. See Photos below.

Internal Rebar has rusted and is fracturing concrete matrix, calcium carbonate is ¼"thick in many areas, surface cracking is evident in majority of cast stone, and surface has extensive freeze thaw erosion of the surface leaving a rough stone surface.

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Cast Stone has widespread spalling, cracked stone where rebar has corroded and expansion has cracked stone allowing water to enter. Cast stone in many areas are shifting away from building possibly due to anchor deterioration.

The owners want to replace all the stone within the Phase 1 work scope with new Buff Limestone in lieu of new cast stone due to their belief that the limestone is a natural product and would not be subject to the corroding rebar & surface freeze thaw damage the surface of the cast stone would exhibit for the next 100 years. All cast stone on the west elevation would be changed out to be new limestone so that all elements would match in texture and color in phase 2 work which would be scheduled in the near future. They would also like to match the limestone that exists on the adjacent building which was built around the same time.

If the Historical Commission determines that cast stone needs to be used instead of limestone, they will comply, but they feel the added value to the structure in a long-term product would be best for the area and would result in less maintenance costs due to cast stone life cycle costs.

Upon completion of the masonry & cast stone repairs we will reclean the masonry of mortar smears and other debris using Eacho Chem NMD 80 masonry detergent thoroughly rinsing the entire surface.

Phase 1 in our opinion requires a quick response in our addressing this area of the building due to bowing of the wall. We welcome any questions you may have. Please contact me at 810-217-3204. Phase 2 when started will replace any of the existing cast stone to match what has been approved by the Historical Commission in Phase 1, and this phase will only require miscellaneous tuckpointing & brick replacement as needed.

Sincerely,

Richard V. Akins

Richard V. Akins
Vice-President

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Material Product Data Sheets:

Belden Brick- Bowerston Shale Company

Eaco Chem – One Restore Restoration Cleaner

Indiana Limestone- Buff

Royal Cast Stone

Eaco Chem – NMD 80 Masonry Detergent

Sample Photos of Cleaning & Historical Restoration of Exterior Facades

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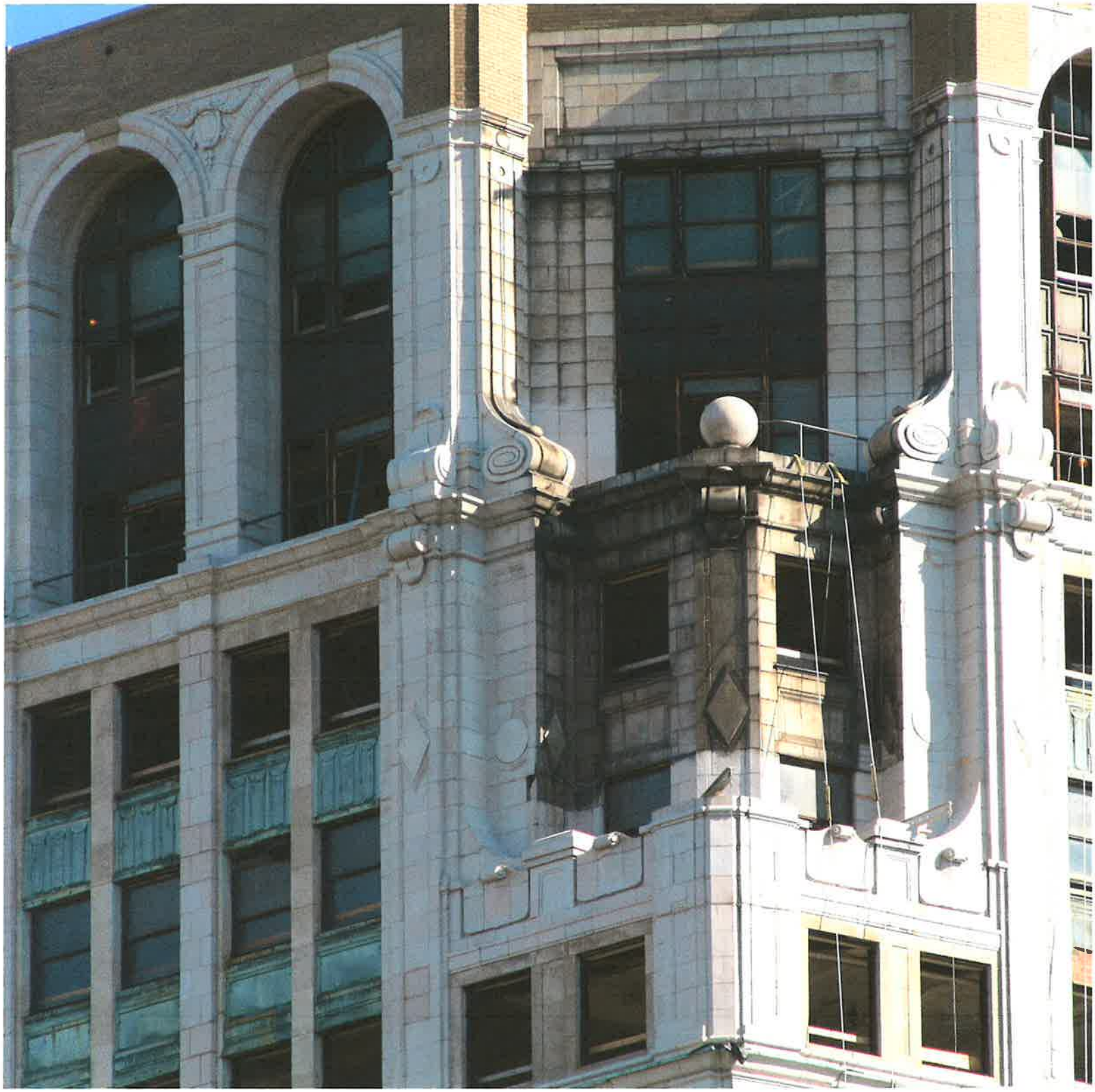
Knapp Building
Fiber House



JLG


SCOTT
BLUR
tSL
OE
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BiA

WARNING

CLEMSON UNIVERSITY
THE BISHOP MATERIALS LABORATORY

TEST REPORT

100 Clemson Research Blvd.
Anderson, SC 29625
(864) 656-1094
Fax: (864) 656-1095
www.brickandtile.org

IAS ACCREDITED Testing Laboratory

Results of Tests on brick Conducted in accordance with C67/C67M - 23a Standard Test Methods for Sampling and Testing Brick and Structural Clay Tile

02/26/2024

Name:	The Bowerston Shale Company P. O. Box 199 Bowerston, OH 44695	Plant:	The Bowerston Shale Company
		Sampled Date:	2/8/2024
		Received Date:	2/8/2024
Phone:	740-269-2921	Fired Date:	2/8/2024
Fax:	740-269-5456	Product Code:	
Report Number:	12466-30918	Lot Number:	H23302

Description: **Red Shale Series**

Absorption	**1**	**2**	**3**	**4**	**5**	**Average**	**Test Date**
24 Hour Cold Water (%)	4.1	4.4	3.5	4.5	4.0	4.1	2/15/2024
5 Hour Boiling Water (%)	6.6	7.1	5.8	6.9	6.5	6.6	
Saturation Coefficient	0.63	0.62	0.61	0.65	0.61	0.62	

Compressive Strength	**1**	**2**	**3**	**4**	**5**	**Average**	**Test Date**
psi	25,550	20,800	25,770	24,130	23,240	23,900	2/19/2024

IRA (Oven Dried Method)	**6**	**7**	**8**	**9**	**10**	**Average**	**Test Date**
g/min/30 in.²	8.7	7.7	11.6	8.5	7.3	8.8	2/13/2024

Efflorescence	**11**	**12**	**13**	**14**	**15**		**Test Date**
Efflorescence Detection	Not Effloresced	Not Effloresced	Not Effloresced	Not Effloresced	Not Effloresced		2/23/2024

Void Area	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**Average**	**Test Date**
Void Area (%)	18	18	18	18	18	18	18	18	18	18	18	2/13/2024

The brick represented by the test results shown here comply with the physical property requirements of the standards listed below:

ASTM C32 - 23 Standard Specification for Sewer and Manhole Brick (Made From Clay or Shale)
Grades: , SM / MS, MM

ASTM C62 - 23 Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale)
Class: SW, MW, NW

ASTM C216 - 23 Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale)
Grade: SW, MW

Red Shale Series Lot H23302:
#110, #110-3, #110-6, #111, #111-3, #111-6, #120, #125, #130, #130-3, #130-6, #131, #131-3, #131-6, #138, #138-3, #138-6, #145, #145-3, #145-6, #225, #1100, #1103, #1106, #1110, #1113, #1116, #1200, #1252, #1300, #1303, #1306, #1310, #1311, #1313, #1316, #1348, #1348-6, #1450, #1450-3, #1450-6, #1620, #1625, Albany Rose, Aztec Red, Bayview Blend, Bordeaux, Flint Ridge Blend, Harvest Blend, Heritage Black, Imperial Blend, Irish Gold, Masonic Blend, Old English, Phoenix Red, Port Clinton, Red Brush -Tex, Red Flash Brush-Tex, Red Brush-Tex-3, Red Brush-Tex-6, Somerset Blend, Tallmadge Blend, #325, #501, #510, #520, #525, #545

Katherine Hill, Quality Manager

**The temperature and humidity of the Bishop Materials Laboratory is constantly kept between 60 -90F, and 30-70% RH*
The results shown above apply only to the samples tested, which are provided by the customer.

Lab Reference: 12466.30918

THE WAVE OF THE FUTURE

EaCo Chem

ONERESTORE®
RESTORATION DETERGENT

FOR PROFESSIONAL USE ONLY

PRODUCT DATA SHEET

OneRestore® provides remarkable versatility, cleaning power, and safety all in one. It is appropriate for single or multiple surface restoration. OneRestore® is capable of removing the deepest stains. It can also be used to safely remove deposits on glass and anodized aluminum. OneRestore® is a great choice for cleaning and restoring college campuses, government facilities, hospitals, and office buildings.

Advantages

- Excellent for removing virtually all stains, including mineral oxide stains, environmental pollution stains, and rust.
- Spray-on / rinse-off application process improves productivity. No scrubbing required.
- Restoration using one product simplifies the process and reduces protection requirements.
- No harm to plants from rinsed product when used as directed.
- Safe on glass and anodized aluminum when used as directed.
- Ideal for deep stain removal from porous substrates.
- Safe for non-colored horizontal concrete, such as driveways and sidewalks.
- Biodegradable

Limitations

- Do not allow product to dry on the surface. Always rinse thoroughly.
- Do not use on polished stone or oxide films used for tinting glass or self cleaning glass.
- Not suitable for certain low-fire tiles when using extended dwell times.
- Not recommended for colored horizontal surfaces.
- Do not allow to puddle and dwell on horizontal surfaces.
- Do not use on galvanized metal.

**For information about soft metals, please see our soft metal Issue Statements at our website, www.eacochem.com, for more complete guidance.*

Technical Data

Appearance:	Amber color
Odor:	Pleasant scent
Physical State:	Liquid
pH:	>1.0
Boiling Point:	>212° F
Specific Gravity (water=1):	1.117 @ 77° F
Evaporation Rate:	N/D
Solubility in Water:	Complete
Flash Point:	N/D
Viscosity	Water thin
Decomposition Temp:	N/D
Oxidizing Properties:	N/D

Preparation

Protect adjacent surfaces and surrounding building hardware not intended to be cleaned from exposure to the cleaning solution. Avoid direct contact with foliage. Cover landscape using plastic or wet the foliage with water before and after cleaning. *Do not leave plastic on foliage for extened periods of time.* Avoid wind drift on surrounding surfaces as well as auto and pedestrian traffic.

Surface & Air Temperatures

Excessively high or low temperatures will produce poor results and possible harm. Best cleaning results are obtained when air and surface temperatures are above 40° Fahrenheit and less than 90° Fahrenheit. Do not clean when temperatures are below freezing or will be overnight. If freezing conditions exist, allow adequate time for the surface to thaw. If air temperatures exceed 90° Fahrenheit, flash cool the surface with water before applying product. Do not allow products to dry on the surface. Always rinse thoroughly while still wet.

Pre-Testing

Always test prior to beginning full-scale cleaning operations. Pre-testing will determine suitability and effectiveness on each type of surface and stain designated to be cleaned. Pre-testing will also determine dwell times and number of applications required to achieve desired results. Pre-testing will show any potential or adverse reactions to adjacent surfaces. Allow test areas to dry thoroughly before evaluating final appearance and results.

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Pre-Testing - Windows, Window Frames, Door Frames

The best way to test windows, window frames, and door frames is to apply the suggested product to the end of a pencil eraser and place a small dot on each of the surfaces in question. Allow the product to dry on the surface (10 to 15 min). Rinse completely and check the results. If this produces any type of discoloration, do not allow the product to come in contact with these surfaces. They must be covered prior to cleaning.

Suitable Substrates

The following substrates have been tested on and are deemed suitable under standard conditions. Pre-testing is always recommended prior to full-scale cleaning.

- ✓ Brick
- ✓ Limestone
- ✓ Concrete
- ✓ Precast
- ✓ Exposed Aggregate
- ✓ Granite
- ✓ Unpolished Marble
- ✓ Synthetic Stone
- ✓ Terrazzo
- ✓ Anodized Aluminum
- ✓ EIFS
- ✓ Uncoated Stainless Steel
- ✓ Stucco
- ✓ Glass

While this list is extensive, there are other substrates that OneRestore® may be suitable for that are not listed. Every cleaning situation is unique in its own way, so please follow all precaution, pre-testing and application instructions included in this Product Data Sheet.

Stain Removal

OneRestore® can remove a multitude of stains including:

- ✓ Vanadium
- ✓ Manganese
- ✓ Mineral Oxide Stains
- ✓ Pollution Stains
- ✓ Concrete Leaching
- ✓ Sealant Stains
- ✓ Caulk Bleed
- ✓ Hard Water Stains on Glass
- ✓ Sealer Overspray on Glass
- ✓ Fresh Tar Stains

Safety Information

Always wear goggles and chemical resistant gloves when handling this product. Read the Safety Data Sheet for additional safety and health hazard information prior to use. Do not get in eyes, on skin, or on clothing. Do not wear contact lenses when using this product. If material comes in contact with clothing, wash before re-use. Keep container closed when not in use. Use with adequate ventilation. Use NIOSH/MSHA approved respiration devices when adequate ventilation is not available. Though the potential for fuming is minimal, take precautions to avoid exposing building occupants to fumes. Do not remove the label from the container. Dispose of empty containers in accordance with federal, state, and local requirements.

CAUTION: KEEP AWAY FROM CHILDREN

VELOCITY EHS 24 HOUR EMERGENCY RESPONSE SERVICE NUMBER - 1-800-255-3924

Dilutions

OneRestore® is always used undiluted.

Coverage Rates

Coverage rates with OneRestore® will vary from 75-250 sq. ft. per gallon depending on the surface porosity, texture, ambient temperature, craftsmanship, and severity of staining.

Application Instructions

1. Pre-wet the surface (do not saturate) with water before applying OneRestore®.
2. For best results, apply OneRestore® with a low-pressure sprayer (brushing is not necessary).
3. For the majority of instances, a single application with a 5 to 10 minute dwell time will remove many of the stains.
4. For deeper stains or very porous surface, a double application with 5 to 10 minutes in between applications will provide the best results. Do not rinse between applications.

THE NATURAL FUTURE

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PRODUCT DATA SHEET

Rinsing

Proper rinsing techniques determine the final look and quality of the job. A thorough rinse job is always recommended; however, our chemistry never requires flooding the surface. OneRestore® can be rinsed using cold water. Pressures that mark the surface should be avoided. When in doubt, follow the manufacturers recommended P.S.I. for the substrates. **Do not use a zero-degree nozzle**

Caution: Do not allow the product to dry on a surface.

Spill or Leak Procedures

Check with state, local, or federal regulation for waste disposal methods in the area. Wear proper protective equipment while doing clean-up. For large spills, dike and contain for intended use. For residual, use a chemical absorbent material. For small spills, use a chemical absorbent material and place in an approved container for disposal.

Container Handling/Storage

Store product in a cool, dry place away from caustic-based materials. Vent the bung cap before opening. Keep container tightly closed when not in use. Wash thoroughly after handling. For best results, liquid should be 32°F or higher prior to use.

Instructions in Case of Contact or Exposure

Eyes: Flood with water for 15 minutes. If irritation develops, seek medical attention.
Skin: Wash off with soap and water. Follow with a good emollient. If irritation develops, seek medical attention.
Ingestion: Drink lots of water to dilute. Do not induce vomiting. Seek immediate medical attention.
Inhalation: Move to fresh air. If irritation develops, seek medical attention.

Notice

This product has been classified in accordance with the hazard criteria of the CFR.

Disclaimer

The information herein is given in good faith, but no warranty, either expressed or implied is made. Final determination of the suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot be sure or guarantee these are the only hazards which exist.

Customer Service

Factory personnel are available for assistance Monday through Friday from 8am to 5pm EST at (724) 656-1055. Questions can also be sent to info@eacochem.com. A reply can be expected by the following business day. FaceTime and Call from the Wall are available while on jobsite.

Indiana Limestone (Buff)

Safety Data Sheet

According to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012
Rules and Regulations
Date of issue: 09/05/2016 Date of Revision: 10/15/2022

SECTION 1: Identification

1.1. Product identifier

Product form : Substance, Solid or Dust, Buff or Gray Color

Substance name : Buff Indiana Limestone, Calcite, Limestone, Calcium Carbonate

CAS No : 471-34-1 (Main Constituent)

Formula : $CaCO_3$

1.2. Relevant identified uses of the substance

Use of the substance : Construction, building material.

Limestone may be distributed in blocks, bulk shipments, as gravel or dust. No known restrictions.

1.3. Details of the supplier of the safety data sheet

Victor Quarry
7850 South Victor Pike
Bloomington, IN 47403
Website: www.indianalimestonecompany.com

Office
Indiana Limestone/Polycor
120 W. 7th St. Suite 210
Bloomington IN 47404
Phone: 812-275-3341
Fax: 812-275-3344

1.4. Emergency telephone number

Emergency number : Indiana Limestone/Polycor Office: 812-275-3341

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Skin Irritant. Category 2	H316
Eye Irritant. Category 2B	H320
Respiratory Tract Irritant. Category 3	H335

Indiana Limestone is a naturally occurring substance, generally gray or buff in color with no distinct or odor or taste. This product is primarily constituted of calcium carbonate. It is not classified as a hazard as a solid. Dust generated by Indiana Limestone is considered a nuisance dust. Laboratory tests using the NIOSH 7500 Analytical Method determined Crystalline Silica showed Non-Detect results for this product. This product is not classified as a carcinogen. Dust created during cutting or fabricating can cause mild skin, eye, or respiratory tract irritation hazards. Eye Contact: May produce mild or moderate mechanical irritation or inflammation. Skin Contact: Direct contact may cause mild skin irritation due to abrasion or drying effects. Inhalation: Inhaled dust may cause respiratory irritation. Not expected to be an ingestion hazard. Follow engineering controls and safe work practices recommended for inert dust (Particulates Not Otherwise Regulated) (PNOR), as outlined by industrial hygiene procedures related to OSHA Table Z-1, to minimize excessive dust generation.

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :

GHS07

Signal word (GHS-US) Warning

Hazard statements (GHS-US)
H316 - Causes mild skin irritation
H320 - Causes eye irritation
H335 - May cause respiratory irritation

Precautionary statements (GHS-US):
: P261 - Avoid breathing dust
: P264 - Wash exposed skin thoroughly after handling
: P271 - Use only outdoors or in a well-ventilated area (when cutting)
: P280 - Wear protective gloves, eye protection
: P302+P352 - IF ON SKIN: Wash with plenty of soap and water
: P304+P340 - IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
: P305+P351+P338 - If in eyes: Rinse cautiously with water for 15 minutes
Remove contact lenses, if present and easy to do. Continue rinsing
: P312 - Call a POISON CENTER/doctor/physician if you feel unwell
: P332+P313 - If skin irritation occurs: Get medical advice/attention
: P337+P313 - If eye irritation persists: Get medical advice/attention

2.3 Other hazards

: None under normal conditions

2.4. Unknown acute toxicity (GHS-US)

: No data available

SECTION 3: Composition/information on ingredients

3.1. Substance

Substance type : Naturally occurring substance/solid

Name	Product identifier	%	GHS-US classification	Hazard statements***
Calcium Carbonate (main constituent)	CAS No. 471-34-1	99.24%-99.90%*	Skin Irritant. Category 2 Eye Irritant. Category. 2B Respiratory Tract Irritant Category 3	H316 H320 H335
Magnesium Oxide	CAS No. 1309-48-4	00.40%-00.75%*		
Silica by NIOSH 7500 mod. Quartz	CAS No. 14808-60-7	Non-Detect	N/A**	
Cristobalite	CAS. No. 14464-46-1	Non-Detect	N/A**	
Tridymite	CAS. No. 15468-32-3	Non-Detect	N/A**	

*Denotes results range from independent laboratory tests conducted 2016 & 2022.
** Denotes data from independent laboratory tests conducted 2016 & 2022. *** Full text of hazard statements is found in SECTION 2 of this document.

3.2. Mixtures N/A Not classified as a mixture

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation: Remove to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER/doctor/physician if you feel unwell

First-aid measures after skin contact: Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention.

First-aid measures after eye contact: IF IN EYES: Rinse cautiously with water for 15 minutes. Remove contact lenses if present and easy to do.

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

Symptoms/injuries after inhalation : May cause respiratory irritation.

Symptoms/injuries after skin contact : Causes mild skin irritation.

Symptoms/injuries after eye contact : Causes eye irritation.

4.3. Indication of any immediate medical attention and special treatment needed

Obtain medical assistance.

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Product is non-flammable.

5.2. Special hazards arising from the substance or mixture

No additional information available

5.3. Advice for firefighters

Firefighting instructions : Product is non-flammable. Contain fire nearby using appropriate media for fire source.

Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Product is stable but may react with strong oxidizers, strong acids, fluorine.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment, and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment :Safety glasses. Gloves. Particulate filtering mask.

Emergency procedures :Evacuate unnecessary personnel.

6.1.2 For emergency responders

: Equip crew with proper protection

6.2. Environmental precautions

Dispose of waste according to local, state and federal regulations.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up : On land, sweep or shovel into suitable containers. Minimize generation of dust.

6.4. Reference to other sections

See Heading 8. Exposure controls and personal protection.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking
: Use local exhaust or general ventilation or appropriate dust filtering mask when cutting

Hygiene measures : Wash exposed skin thoroughly after handling

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions : Stable. No special precautions

Incompatible products : Strong oxidizers. Strong acids. Fluorine.

Incompatible materials : Avoid contact with strong acids, Fluorine and oxidizers which may cause chemical reactions

7.3. Specific end use(s) : No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Calcium Carbonate (471-34-1) (Dust)

USA OSHA	OSHA PEL (8-Hour TWA) Table Z-1 & Table Z-3	5 mg/m³ 8-Hour TWA [Respirable fraction] [1,2]
USA OSHA	OSHA PEL (8-Hour TWA) Table Z-1 & Table Z-3	15 mg/m³ 8-Hour TWA [Total dust] [1,2,3]
CAL/OSHA	CAL/OSHA PEL (8-Hour TWA)	5 mg/m³ 8-Hour TWA [Respirable fraction] 10 mg/m³ 8-Hour TWA [Total dust]
ACGIH	Threshold Limit Value (TLV)	10 mg/m3
NIOSH	REL	10 mg/m3

1. All inert or nuisance dusts, whether mineral, inorganic, or organic, not listed specifically by substance name are covered by this limit, which is the same as the Particulates Not Otherwise Regulated (PNOR) limit in Table Z-1.
2. Respirable fraction refers to the amount of airborne dust in sizes capable of passing through the upper respiratory system to reach the lower lung passages, i.e., the amount of dust small enough to be inhaled into the lungs during periods of exposure to a product. Not all dust is respirable.
3. See 29 CFR 1910.1000 Table Z-1 (PNOR) and 29 CFR 1910.1000 Table Z-3, Mineral Dusts (Inert or Nuisance Dust).

8.2. Exposure controls

Appropriate engineering controls : Emergency eye wash fountains should be available in the immediate vicinity of any potential exposure. When cutting, ensure adequate local ventilation, use wet cutting methods, or wear appropriate particulate filtering mask. Avoid all unnecessary exposure.

Personal protective equipment

Hand protection : Wear protective gloves

Eye protection : Chemical goggles or safety glasses

Skin and body protection : Wear suitable protective clothing

Respiratory protection : Wear appropriate particulate filtering mask if generating excessive dust (N-95/P-100 or similar)

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid	Decomposition temperature	: No data available
Appearance	: Light grey or buff colored stone.	Flammability	: Not flammable
Odor	: None to mild earthy odor	Vapor Pressure	: Not applicable
pH	: No data available	Relative density	: No data available
Relative evaporation rate (butylacetate=1)	: Not applicable	Density	: No data available
Melting point	: Not applicable	Solubility	: No data available
Freezing point	: Not applicable	Viscosity	: No data available
Boiling point	: Not applicable	Explosive properties	: Not explosive or flammable
Flash point	: None (Not flammable LFL - NA UFL – NA)	Oxidizing properties	: No data available
Self-ignition temperature	: None (Not flammable LFL-NA UFL-NA)	Explosive limits	: Not explosive or flammable

9.2. Other Information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Avoid contact with acids. Avoid contact with fluorine.

10.2. Chemical stability

Stable under normal conditions.

10.3. Possibility of hazardous reactions

Reacts with acids and fluorine. Avoid contact with fluorine. Avoid contact with acids, especially strong acids.

10.4. Conditions to avoid

No additional information available.

10.5. Incompatible materials

Strong acids. Strong oxidizers.

10.6. Hazardous decomposition products

Carbon monoxide. Carbon dioxide.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	: Not classified
Calcium Carbonate (\f)471-34-1	
LD50 oral rat	6450 mg/kg
Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes eye irritation.
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory irritation.
Symptoms/injuries after skin contact	: Causes skin irritation.
Symptoms/injuries after eye contact	: Causes eye irritation.
Likely routes of exposure	: Inhalation; Skin and eye contact

SECTION 12: Ecological Information

12.1. Toxicity

No additional information available

12.2. Persistence and degradability

Calcium Carbonate (471-34-1)

Persistence and degradability	Not established

12.3. Bio-accumulative potential

Calcium Carbonate (471-34-1)

Bio-accumulative potential	Not established

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other information	No data available

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations: Dispose in a safe manner in accordance with local/state/national regulations.

Ecology - waste materials: Avoid release to the environment. The product is a naturally occurring substance, not expected to be harmful to aquatic organisms.

Do not allow fine particulate matter to drain into sewers/water supplies as it may clog or impede sewage systems

Discharging excessive limestone dust and fines into waterways may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

SECTION 14: Transport information

In accordance with DOT. Not a DOT-regulated hazardous material. Not classified as dangerous goods for DOT, IATA, IMDG, TDG.
Not dangerous goods in sense of transport regulations

Additional information

Other information : No supplementary information available.

ADR

Transport document description :

Transport by sea:

No additional information available

Transport by air:

No additional information available

SECTION 15: Regulatory information

15.1. US Federal regulations

Calcium Carbonate (471-34-1): Listed on the United States TSCA (Toxic Substances Control Act) Inventory

15.2. International

Regulations: Canada:

Calcium Carbonate (471-34-1): Not listed on the Canadian Ingredient Disclosure List

WHMIS Classification: Uncontrolled product according to WHMIS/HPR classification criteria

EU-Regulations

No additional information available

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC or 1999/45/EC

15.3. US State regulations

California Proposition 65 - This product does not contain any substances known to the state of California to cause cancer and/or reproductive harm.
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.
SARA 311/312 Hazards: No SARA Hazards
Rhode Island Right to Know components: No components are subject to the Rhode Island Right to Know Act.
Massachusetts Right To Know components: No components are subject to the Massachusetts Right To Know Act.
Pennsylvania, Minnesota, New Jersey Right To Know components: Calcium carbonate CAS-No. 471-34-1
No additional information available.

SECTION 16: Other Information

Other information : None.
For full text of Hazard Statements (H-phrases) and Precautionary Statements: also see SECTION 2 of this Safety Data Sheet.

Eye Irritation. Category 2B

Skin Irritation. Category 2

Respiratory Tract Irritant. Category 3

H335	Causes respiratory tract irritation
H316	Causes minor skin irritation
H320	Causes eye irritation

NFPA health hazard	1	Exposure could cause irritation but only minor residual injury even if no treatment is given.
NFPA fire hazard	0	Materials that will not burn.
NFPA reactivity	0	Normally stable, even under fire exposure conditions,

HMIS III Rating

Health	: 1 Slight Hazard - Irritation or minor reversible injury possible
Flammability	: 0 Minimal Hazard
Physical	: 0 Minimal Hazard
Personal Protection	: E

SDS US (GHS HazCom 2012)

Information in this SDS is from available published sources and is believed to be accurate. No warranty, express or implied, is made and the Supplier assumes no liability resulting from the use of this SDS. The user must determine suitability of this information for the user's application.

physical properties and performance characteristics

Being a natural product, Indiana Limestone's physical properties such as strength values will vary. The physical properties depend upon texture, cementing material, and degree of moisture.

The following test results are based on many samples tested over a period of years by the industry, the Indiana Geological Survey and the U.S. Bureau of Standards. Committee C-18 of American Society for Testing and Materials (ASTM) has developed many of the test methods used by the testing laboratories reporting these values.

performance tables

table I

In most cases, the design of Indiana Limestone for building requires the consideration of these three properties only. Values shown in Tables II and III are given for special reference. A Technote on safety factors governing Indiana Limestone design is available on request from ILI or member companies.

PROPERTY	VALUE	TEST PROCEDURE
Ultimate compressive strength dry specimens	4,000 psi **minimum** (see note a)	ASTM C170
Modulus of rupture dry specimens	700 psi **minimum** (see note a)	ASTM C99
Absorption	7½% **maximum** (see note b)	ASTM C97

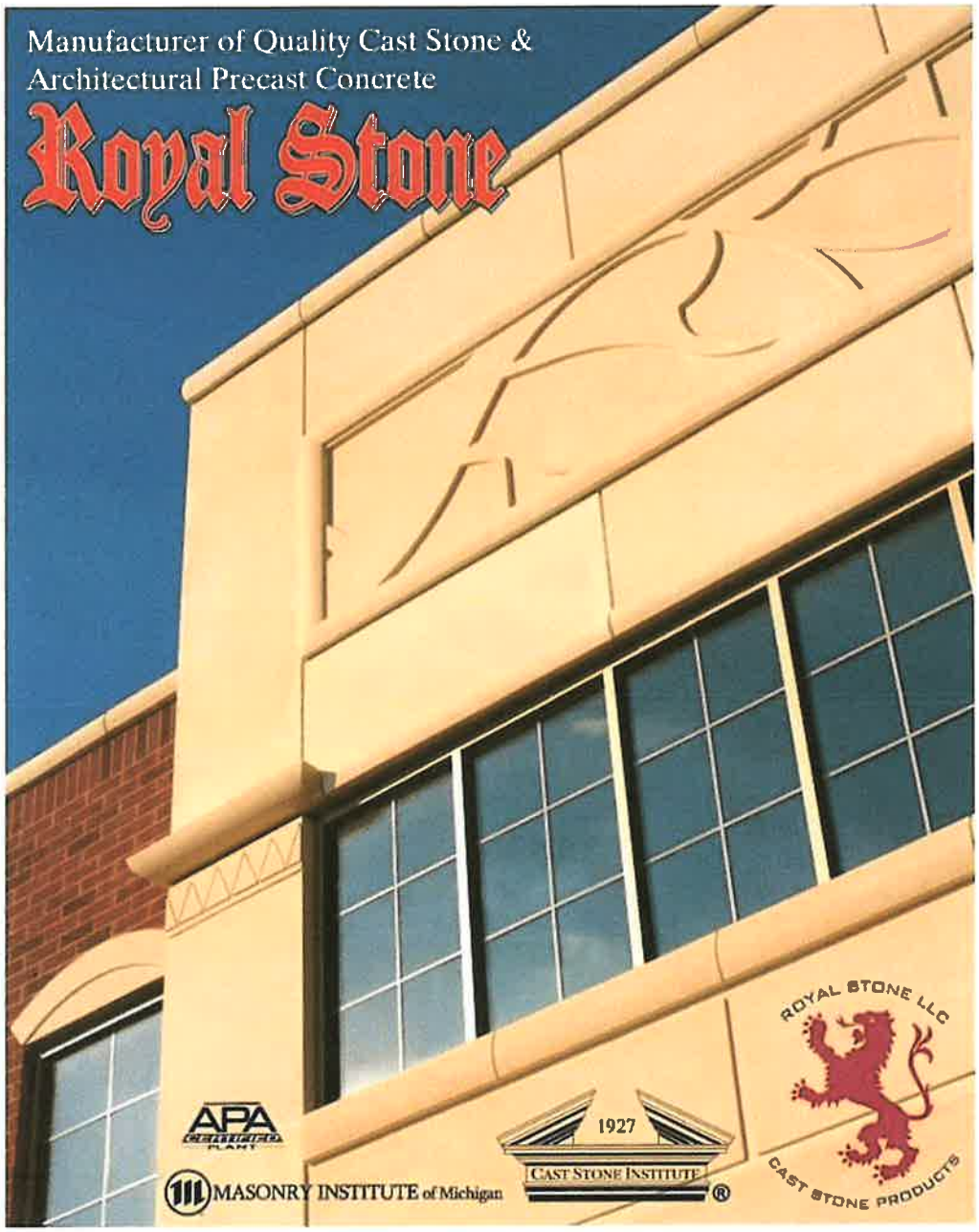
Compression and MOR results are for specimens loaded perpendicular to grain direction.

See pp. 16 and 20 for design load calculations and tables

Note a: Most Indiana Limestone production possesses values higher than these minimums, which are listed for engineering reference.

Note b: Indiana Limestone is available with lower values. Consult ILI for particulars.

Indiana Limestone is classified as a Type II Dimension Limestone under ASTM C-568, and meets or exceeds the strength requirements set forth in this classification. The flexure test often specified, ASTM C-880, was developed for stones thinner than the 2" which is the stated minimum for Indiana Limestone. As statements about limestone in C-568 embody the C-99 test for modulus of rupture, the inclusion of C-568 in specifications makes the numbers from C-880 meaningless. ILI recommends and uses ASTM test C-99 for modulus of rupture and believes this is more applicable to typical limestone uses.



Royal Stone LLC is a proud member of the Cast Stone Institute.

Main Office: 3014 Dietz Rd. – Williamston, MI 48895 • Phone: 517-655-5150 • Fax: 517-655-2027
Sales/Estimating Department "Direct Line": (248) 343-6373

This is To Certify

Royal Stone

complies with the requirements of plant certification, thus demonstrating the ability to produce Architectural Precast products of exemplary quality; therefore, this company is hereby recognized as an:

APA CERTIFIED PLANT

and is entitled to all honors, privileges, and qualifications extended to those recognized within the

Architectural Precast Association Plant Certification Program

Certification is contingent upon satisfactory completion of periodic inspections and compliance is not affirmed past the expiration date of:

October 31, 2026

Certification Designation:

Architectural Precast & Wet Pour Cast Stone

Chris Cox, Chair
APA Plant Certification Committee

1927

CAST STONE INSTITUTE®

Certificate of Excellence

PRESENTED TO

Royal Stone, LLC

This certifies that the company has met the strict criteria for plant certification and adheres to the high standards for quality as set forth by the institute.

Valid March 1, 2026 through March 1, 2027

Troy McCune, President

Royal Stone
CAST STONE PRODUCERS
3014 Dietz Rd. – Williamston, MI 48895
Phone: 517-655-5150 - Fax: 517-655-2027

Specification Sheet

(Provided by The Architectural Precast Association)

SECTION 03450

PLANT-PRECAST ARCHITECTURAL CONCRETE

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Architectural precast concrete wall panels.

B. Architectural precast concrete lintels, sills, copings, and trim.

C. Architectural precast concrete pavers.

D. Supports, anchors, and attachments.

E. Perimeter and intermediate joint seals.

F. Grouting under panels.

1.2 RELATED SECTIONS

A. Section 03300 - Cast-in-Place Concrete: Building structural frame.

B. Section 03380 - Post Tensioned Concrete: Building structural frame.

C. Section 03410 - Plant-Precast Structural Concrete: Building structural frame.

D. Section 03470 - Tilt-Up Precast Concrete: Building structural frame.

E. Section 03415 - Precast Concrete Hollow Core Planks: Building structural floor.

F. Section 05120 - Structural Steel: Building structural frame.

G. Section 07620 - Flashing and Sheet Metal.

H. Section 07900 - Joint Sealers.

I. Section 04720 – Architectural Cast Stone

1.3 REFERENCES

A. American Concrete Institute.
   1. ACI 211.1 - Normal, Heavy Weight, and Mass Concrete, Practice for Selecting Proportions; 1991.
   2. ACI 318 - Building Code Requirements for Reinforced Concrete; 2002.
   3. ACI 533R - Guide for Precast Concrete Wall Panels; 1993.

B. ASTM International.

1. CRSI - Manual of Standard Practice; 2001.

F. Department of Defense (DOD).
1. DOD P-21035A - Galvanizing Repair Specification.

G. Precast/Prestressed Concrete Institute.
1. PCI MNL-117 - Manual for Quality Control for Plants and Production of Architectural Precast Concrete Products; 1996.

H. Steel Structures Painting Council (SSPC).
1. SSPC Paint 20 - Zinc-Rich Primers (Type I, Inorganic, and Type II, Organic); 2002.
2. SSPC Paint 25 - Zinc Oxide, Alkyd, Linseed Oil Primer for Use Over Hand Cleaned Steel, Type I and Type II; 1997.

I. American Institute of Steel Construction (AISC).

1.4 SUBMITTALS

A. Submit under provisions of Section 01300.

B. Product Data: Submit product data for manufactured materials and products.

C. Shop Drawing:
1. Show in-place location, manufacturing details, plans, elevations, anchorages, reinforcement, connection details and methods, dimensions, finishes, relationships to adjacent materials, and erection and placement.
2. Show identification marks, coordinated to Shop Drawings, and date of manufacture on all units to facilitate hauling and erection.
3. Setting diagrams, templates, instructions and directions as required for installation.

D. Engineering Calculations: Engineering calculations as required sealed by an engineer licensed to practice in (project state).

E. Mix Design(s): Proposed concrete mix design for each type and color of concrete mix required including backup mix.

F. Material Test Reports: Submit material certificates signed by manufacturer for concrete materials, reinforcing materials, admixtures, and similar items.

G. Certifications:
1. Manufacturer's certification from APA, PCI, or applicable municipal certifications.
2. Welder's AWS certification. Submit for each welder.

H. Selection Samples: For each finish product specified, two complete sets of color chips representing manufacturer's full range of available colors, textures, and patterns.

I. Verification Samples: For each finish product specified, two samples, approximately 12 inches (300 mm) square, representing actual product, color, texture, and patterns.

1.5 QUALITY ASSURANCE

A. Manufacturer's Qualifications.
1. Firm shall have a minimum of five years experience in producing units similar to those required for this Project, with sufficient production capacity to produce and deliver required units without causing delay in Work.
2. Fabricating plant shall be certified by one of the following:
a. Architectural Precast Association (APA).
b. Precast/Prestressed Concrete Institute (PCI), Group A1.
c. Or Equal Certification Program.

B. Installer's Qualifications: Installer shall have a record of at least five years of successful installation of units similar to those required for this Project.

C. Welder's Qualifications: Provide certification that welders to be employed in the Work are certified by AWS and applicable local building officials, and have been re-certified in the last 12 months.

D. Mock-Up: Provide a mock-up for evaluation of surface finishes and workmanship.
1. Provide initial production units for job-site assembly with other materials for approval. Coordinate type and location of mock-ups with project requirements. Accepted units will be used as the standard for acceptance of production units. Remove and replace units which are not accepted.
2. Do not proceed with remaining work until workmanship, color, and finish are approved by Architect.
3. Refinish mock-up area as required to produce acceptable work.
4. Incorporate accepted mockup as part of Work.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle precast in strict compliance with manufacturer's instructions and recommendations and industry standards Protect from damage. Lift and support units only at designated lifting points as shown on approved Shop Drawings.

B. Deliver units to the Project site in such quantities and at such times to ensure continuity of installation.

C. Handle precast units to position, consistent with their shape and design. Lift and support only from support points.

D. Provide anchorage items to be embedded in or attached to other construction without delaying the Work. Provide setting diagrams, templates, instructions and directions as required for installation.

E. Blocking and Lateral Support During Transport and Storage: Clean, non-staining, without causing harm to exposed surfaces. Provide temporary lateral support to prevent bowing and warping.

F. Protect units to prevent staining, chipping, or spalling of concrete.

G. Mark units with date of production in location not visible to view when in final position in structure.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturer: Royal Stone LLC; 3014 Dietz Rd., Williamston, MI 48895. Tel: (517) 655-5150, Fax: (517) 655-5158. Email: jameyp@royalstoneinc.com

B. Substitutions: Not permitted.

C. Requests for substitutions will be considered in accordance with provisions of Section 01600.

2.2 APPLICATIONS/SCOPE

A. Design units to withstand design loads as calculated in accordance with applicable code, and erection forces. Calculate structural properties of units in accordance with ACI 318.
1. Wind Loads.
2. Seismic forces.
3. Building dynamics, thermal, live, impact or concentrated loads, structural deflection, story drift.

2.3 MATERIALS

A. Concrete Materials:

1. Portland Cement: Complying with ASTM C 150, Type I or III, white or gray colors to achieve desired finish colors. Use only one brand, type, and color from the same mill. Gray cement may be used for non-exposed backup mixes.
2. Aggregates: Complying with ASTM C 33, gradation may differ to achieve desired finish characteristics. Select coarse and fine aggregate colors and screen sizes to match approved sample(s). Verify that adequate supply, from one pit or quarry, for each type of aggregate is available for the entire Project. If possible obtain entire aggregate supply prior to starting Work, or have aggregate supply held in reserve by aggregate supplier.
3. Lightweight aggregate: Complying with ASTM C 330.
4. Water: Potable. Clean, clear, and free from deleterious amounts of salts, acids, alkalies, organic materials, oils, detergents, or other matter that may interfere with color, curing, or strength of concrete.
5. Admixtures: Select to be compatible in specified mix.
    a. Air Entraining: Complying with ASTM C 260.
    b. Water Reducing: Complying with ASTM C 494, Type A, B, C, For G.
    c. Silica Fume: Complying with ASTM C 1240, for cement replacement for high performance concrete.
    d. Coloring Agent: Complying with ASTM C 979, compatible with other concrete materials.
    e. Other constituents: Integral water repellents and other chemicals for which no ASTM standard exists, shall be previously established as suitable for use in concrete or shall be shown by test or experience not to be detrimental to the concrete.

B. Formwork:

1. Provide forms with acceptable form facing materials that are non-reactive with concrete or form release agents and will produce required finish surfaces.
2. Construct and maintain forms to produce precast concrete units of shapes, lines, and dimensions indicated, within specified tolerances.

C. Reinforcing Materials:

1. Reinforcing Bars: Complying with ASTM A 615/A 615M, Grade 40 or 60, unless otherwise required to meet structural requirements.
2. Galvanized Reinforcing Bars: Complying with ASTM A 767/A 767M, hot-dip galvanized; use where concrete cover is less than 1-1/2 inches.
3. Epoxy Coated Reinforcing Bars: Complying with ASTM A 934; use in special applications where indicated.
4. Steel Welded Wire Fabric: Complying with ASTM A 185, plain, cold drawn.
5. Pre-Stressing Tendons: Complying with ASTM A 416/A 416M, Grade 250 or 270, uncoated, 7 wire, low relaxation strand.

D. Connection Materials:

1. Steel Shapes and Plates: Complying with ASTM A 36/A 36M.
2. Malleable Iron Castings: Complying with ASTM A 47/A.47M.
3. Carbon Steel Plates: Complying with ASTM A 283/A 283M.
4. High Strength, Low Alloy Structural Steel: Complying with ASTM A 572.
5. Carbon Steel Structural Tubing: Complying with ASTM A 500, Grade B.
6. Anchor Bolts: Complying with ASTM A 307, carbon steel or ASTM A 325 (ASTM A325M), high strength; bolts nuts, and washers.
7. Welded Headed Studs: Complying with AWS D1.1/D1.3M, Type B.
8. Deformed Steel Wire Bar Anchors: Complying with ASTM A 496.
9. Stainless Steel Plate: Complying with ASTM F 593, Type 304 or Type 316; bolts and studs, nuts and washers. Note that selection of stainless steel will result in increased costs.
10. Finish for Steel Connection Materials:

a. Hot-dip galvanize steel exposed to weather in final assembly complying with ASTM A 123/A 123M or ASTM A 153/A 153M.
b. Shop Prime Remaining Steel Shapes: Complying with SSPC Paint 25.
c. Anchor Bolts, Nuts, Washers, Cadmium Plated: Complying with ASTM A 563, Grade C.
d. Hot-dip galvanize setting bolts or projecting steel in masonry applications complying with ASTM A 153/A 153M.
e. Galvanizing Repair Paint: Complying with DOD P-21035A or SSPC Paint 20.
f. Welding Electrodes: Comply with AWS Standards.

E. Bearing Pads: Elastomeric pads, complying with ASTM D 412.

F. Grout Materials:
1. Cement Grout: Cement complying with ASTM C 150; sand complying with ASTM C 404; proportions 1:2.5 by volume, minimum water for placement and hydration.
2. Non-Shrink Grout: Complying with ASTM C 1107.
3. Epoxy Grout: Consult Suppliers.

2.4 MIXES

A. Design mixes for each type of concrete specified shall be prepared by an independent testing agency or by an architectural precast manufacturing plant at precast manufacturer's option. Proportion mixes by either testing agency trial batch or field test data methods in accordance with ACI 211.1, using materials to be used on the Project, to provide concrete with properties as follows:
1. Concrete Density: Normal weight.
2. Concrete Density: Lightweight.
3. Compressive Strength: 5,000 psi (35 MPa) when tested in accordance with ASTM C 39/C 39M.
4. Maximum water cement ratio 0.40 at point of placement.
5. Add air-entrainment admixture to result in air content at point of placement complying with ACI 533R requirements.
6. Water absorption maximum 6% (by weight) when tested in accordance with ASTM C 642.

2.5 MANUFACTURING

A. General:
1. Fabricate precast concrete units with manufacturing and testing procedures, quality control recommendations, and dimensional tolerances as specified in PCI MNL-117 or ACI 533R, unless more stringent requirements are shown or specified.
2. Fabricate units straight, smooth and true to size and shape, with exposed edges and corners precise and square, unless otherwise indicated.

B. Cast openings larger than 10 inches (254 mm) in any dimension according to locations shown on Shop Drawings. Smaller holes may be field cut when approved by Architect.

C. Reinforcement: Comply with CRSI Manual of Standard Practice, PCI MNL-117, or ACI 533R recommendations. Reinforce architectural precast concrete units to resist handling, transportation, and erection stresses, and to comply with specified performance criteria.

D. Pretension tendons for units in compliance with PCI MNL-117 or ACI 533R.

E. Cast-in Items: Provide embedded anchors, inserts, steel shapes, and lifting devices as shown on reviewed Shop Drawings. Window connections are best made by field drilled inserts. Firmly hold cast items in place by jigs, strongbacks, or other approved means.

F. Comply with PCI MNL-117 or ACI 533R requirements for measuring, mixing, transporting, and placing concrete. Place facing mix to a thickness of the greater of 1 inch (26 mm) or 1.5 times the maximum aggregate size. Place back-up concrete to ensure bond with face concrete.

G. Consolidate concrete using equipment and procedures complying with PCI MNL-117 or ACI 533R.

H. Permanently mark units with pick-up points as shown on reviewed Shop Drawings. Imprint casting date and piece mark on a surface to be concealed from view in the finished structure.

I. Cure concrete in accordance with PCI MNL-117 or ACI 533R requirements.

J. Discard units that are warped, cracked, broken, spalled, stained, or otherwise defective unless repairs are approved by the Architect and meet specified requirements. Refer to ACI-533R for product finish requirements unless otherwise shown or specified.

K. Manufacturing Tolerances: Fabricate to tolerances listed in PCI MNL-117 or ACI 533R.

2.6 FINISHES

A. Finish exposed surfaces or units to match Architect's design reference sample.

B. Finish exposed surfaces or units to match APA and PCI "Architectural Precast Concrete-Color and Texture Selection Guide" of Plate Numbers Indicated.

C. Finish exposed surfaces or units in accordance with the following:
1. Smooth surface finish free from pockets, sand streaks, honeycomb, with uniform color and texture. State whether bugholes less than 5/8 inch (16 mm) in diameter are acceptable.
2. Textured surface finish from form liners or inserts.
3. Machine textured finish, using power or hand tools to remove matrix and fracture coarse aggregate.
4. Retarded finish, using chemical retarding agents applied to forms, with washing and brushing procedures to expose aggregate and surrounding matrix.
5. Abrasive blast finish, using abrasive grit, equipment, application and cleaning procedures to expose aggregate and surrounding matrix.
6. Acid etched finish using acid solution and application techniques to expose aggregate and surrounding matrix.
7. Honed or Polished finish using mechanical abrasion, followed by filling and rubbing procedures.
8. Sand embedment finish, using selected coarse aggregate placed in a sand bed in the bottom of the mold, with sand removed after removal from the mold.
9. Applied material finish, using selected ceramic or natural stone materials, specified in Section 04400.

D. Finish Exposed Back Surface of Units:
1. To match face surface of units.
2. By smooth, steel trowel finish.

E. Finish unexposed surfaces of units by float finish or as-cast form finish.

2.7 SOURCE QUALITY CONTROL

A. Inspect and test architectural precast concrete in accordance with PCI MNL-117 or ACI 533R.

B. The Owner may retain an independent Testing Laboratory to evaluate manufacturer's quality control and testing methods. Testing Laboratory shall be certified by CCRL or similar National authority. Manufacturer shall allow Testing Laboratory access to all operations pertinent to the Project.

C. Defective Work: Discard units that do not conform to requirements as shown or specified. Replace with units which meet requirements.

PART 3 EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Field Dimensions: Furnish field dimensions to manufacturer as required.

C. Examine substrates and conditions for compliance with requirements for installation, tolerances, true and level bearing surfaces, and other conditions affecting performance of architectural precast concrete units.

D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

E. Do not install units until supporting structure has been completed and has attained minimum allowable design compressive strength.

3.2 ERECTION

A. Erect units using personnel experienced and trained in placement and securing of precast concrete units.

B. Lift and handle precast using lift points and embeds as shown on approved shop drawings.

C. Erect level, plumb, and true to line. Do not allow cumulative dimensional errors to develop.
1. Adjustments such as shimming which would place additional stress on units shall not be permitted.
2. Adhere to dimensional tolerances in accordance with PCI recommendations.

D. Erect and secure in a manner to prevent damage to units or units in place.

E. Erection Tolerances. Erect within tolerances listed in PCI MNL-117 Appendix I or ACI 533R.

F. Joint Sealants: As specified in Section 07900.

G. Where two stage joint seal is required, sequence with sealant application to ensure that sealant, gaskets, and similar items required for interior side seal are installed concurrently with installation of precast units.

3.3 CLEANING

A. Clean exposed surfaces of units after erection if soiled or stained.
1. Wash and rinse according to architectural precast concrete manufacturer's recommendations. Protect other work from damage while cleaning.
2. Do not use cleaning materials or methods that change the appearance of architectural precast concrete finishes. Test clean a small area to verify adequacy and safety of materials and methods.
3. Leave in condition for application of water repellents specified in Section 07190.

3.4 PROTECTION

A. Subsequent trades to Protect finished surfaces from soiling or damage.

B. Touch-up, repair or replace damaged products before Substantial Completion.
1. Repair exposed surfaces of units to match color, texture, and uniformity of surrounding units.
2. Remove and replace damaged units when repairs do not meet requirements.

1. ASTM A 36/A 36M - Standard Specification for Carbon Structural Steel; 2001
2. ASTM A 47/A 47M - Standard Specification for Ferritic Malleable Iron Castings; 1999.
3. ASTM A 123/A 123M - Standard Specification for Zinc (Hot-Dipped Galvanized) Coatings on Iron and Steel Products; 2002.
4. ASTM A 153/A 153M - Standard Specification for Zinc Coating (Hot Dip) on iron and Steel Hardware; 2002.
5. ASTM A 185 - Standard Specification for Steel Welded Wire, Fabric, Plain, for Concrete Reinforcement; 2001.
6. ASTM A 283/A 283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates; 2000.
7. ASTM A 307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength; 2002.
8. ASTM A 325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength; 2002.
9. ASTM A 325M - Standard Specification for High Strength Bolts for Structural Steel Joints; 2000
10. ASTM A 416/A 416M - Standard Specification for Steel Strand, Uncoated Seven-Wire for Prestressed Concrete; 1999.
11. ASTM A 496 - Standard Specification for Steel Wire, Deformed, for Concrete; 2001.
12. ASTM A 500 - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes; 2001a.
13. ASTM A 563 - Standard Specification for Carbon and Alloy Nuts; 2000.
14. ASTM A 572/A 572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel; 2001.
15. ASTM A 615/A 615M - Standard Specification for Deformed and Plain Billet-Steel Bars for Concrete Reinforcement; 2001b.
16. ASTM A 767/A 767M - Standard Specification for Zinc-Coated (Galvanized) Bars for Concrete Reinforcement; 2000b.
17. ASTM A 934/A 934M - Standard Specification for Epoxy-Coated Prefabricated Steel Reinforcing Bars; 2001.
18. ASTM C 33 - Standard Specification for Concrete Aggregates; 2002a.
19. ASTM C 39/C 39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2001.
20. ASTM C 150 - Standard Specification for Portland Cement; 2002a.
21. ASTM C 260 - Standard Specification for Air-Entraining Admixtures for Concrete; 2001.
22. ASTM C 330 - Standard Specification for Lightweight Aggregates for Structural Concrete; 2002b.
23. ASTM C 404 - Standard Specification for Aggregates for Masonry Grout; 1997.
24. ASTM C 494/C 494M - Standard Specification for Chemical Admixtures for Concrete; 1999a.
25. ASTM C 642- Standard Test Method for Density, Absorption, and Voids in Hardened Concrete; 1997.
26. ASTM C 979 - Standard Specification for Pigments for Integrally Colored Concrete; 1999.
27. ASTM C 1107 - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2002.
28. ASTM C 1240 - Standard Specification for Use of Silica Fume as a Mineral Admixture in Hydraulic-Cement Concrete, Mortar and Grout; 2003.
29. ASTM D 412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers-Tension; 1998a.
30. ASTM F 593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs; 2002.

C. American Welding Society.
   1. AWS D1.1/D1.3M - Structural Welding Code; 2003.
   2. AWS D1.4 - Structural Welding Code - Reinforcing Steel; 1998.

D. Cement and Concrete Reference Laboratory (CCRL).

E. Concrete Reinforcing Steel Institute (CRSI).

Royal Stone

Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

Mix Design - "2-Mason, 1-H2" (WET)

Materials	Scoop	Specific Gravity	Material Cu Ft	Volume Cu Ft	Weight lbs.
Mason Sand EDW. C. Levy Co.	2	2.67	952 2.67 X 62.4	5.71	952
H2 Sand Bay Aggregates	1	2.77	490 2.77 X 62.4	2.83	490
Arctic White Stoneco	0	2.61	0 2.61 X 62.4	0.00	0
Coarse Aggregate (26A) Ottawa Lake	4	2.73	1820 2.73 X 62.4	10.68	1820
Portland (White) Cement Federal White Type 1	N/A	3.15	720 3.15 X 62.4	3.66	720
Portland (Gray) Type 1 St. Mary's Cement	N/A	3.15	0 3.15 X 62.4	0.00	0
Water (W/C = .39)	N/A	1.00	34 gal	4.55	284

Add Mixtures		
Premiere UltraFlo DP	32 fl oz	2
Premiere ConAir X	2 oz	0.33
Added Pigment (color) (Color Name)	0	0
Total	**27.45**	**4,268**

Minimum Material Requirements
28 day strength = 5,000 psi
Water Absorption = 6% by weight, 14% by volume
Spread 25" - 27"
Air Entrainment = 4% to 7%

APA CERTIFIED PLANT

Date Printed: 8/22/2022

Royal Stone
Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

Mix Design - "2-Mason, 1-H2" (WET)
Patch Mix Calculation Chart

Size of patch mix needed: 5 lbs.

Raw material list	lbs. of material	% of mix	Amount needed (lbs)	Amount needed (oz)
Mason Sand EDW. C. Levy Co.	952	23.91%	1.20	19.13
H2 Sand Bay Aggregates	490	12.31%	0.62	9.84
Arctic White Stoneco	0	0.00%	0.00	0.00
Coarse Aggregate (26A) Ottawa Lake	1820	45.71%	2.29	36.56
Portland (White) Cement Federal White Type 1	720	18.08%	0.90	14.47
Portland (Gray) Type 1 St. Mary's Cement	0	0.00%	0.00	0.00
Added Pigment (color) (Color Name)	0	0.00%	0.00	0.00
Total:	**3982**	**100%**	**5.00**	**80**

Additional Notes:

Date Printed: 8/22/2022

Royal Stone

Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

Mix Design - "90 Grey" (WET)

(90 Grey)

Materials	Scoop	Specific Gravity	Material Cu Ft	Volume Cu Ft	Weight lbs.
Mason Sand EDW. C. Levy Co.	2	2.67	952 2.67 X 62.4	5.71	952
H2 Sand Bay Aggregates	1	2.77	490 2.77 X 62.4	2.83	490
Arctic White Stoneco	0	2.61	0 2.61 X 62.4	0.00	0
Coarse Aggregate (26A) Ottawa Lake	4	2.73	1820 2.73 X 62.4	10.68	1820
Portland (White) Cement Federal White Type 1	N/A	3.15	630 3.15 X 62.4	3.21	630
Portland (Gray) Type 1 St. Mary's Cement	N/A	3.15	90 3.15 X 62.4	0.46	90
Water (W/C = .39)	N/A	1.00	34 gal	4.55	284

Add Mixtures		
Premiere UltraFlo DP	32 fl oz	2
Premiere ConAir X	2 oz	0.33
Added Pigment (color) (Color name here)	0	0
Total	**27.45**	**4,268**

Minimum Material Requirements
28 day strength = 5,000 psi
Water Absorption = 6% by weight, 14% by volume
Spread 25" - 27"
Air Entrainment = 4% to 7%

APA CERTIFIED PLANT

Date Printed: 8/22/2022

Royal Stone
Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

Mix Design - "90 Grey" (WET)
Patch Mix Calculation Chart

Size of patch mix needed: 5 lbs.

Raw material list	lbs. of material	% of mix	Amount needed (lbs)	Amount needed (oz)
Mason Sand EDW. C. Levy Co.	952	23.91%	1.20	19.13
H2 Sand Bay Aggregates	490	12.31%	0.62	9.84
Arctic White Stoneco	0	0.00%	0.00	0.00
Coarse Aggregate (26A) Ottawa Lake	1820	45.71%	2.29	36.56
Portland (White) Cement Federal White Type 1	630	15.82%	0.79	12.66
Portland (Gray) Type 1 St. Mary's Cement	90	2.26%	0.11	1.81
Added Pigment (color) (Color name here)	0	0.00%	0.00	0.00
Total:	**3982**	**100%**	**5.00**	**80**

Additional Notes:

Date Printed: 8/22/2022

Royal Stone

Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

Mix Design - "All White" (WET)

(All White)

Materials	Scoop	Specific Gravity	Material Cu Ft	Volume Cu Ft	Weight lbs.
Mason Sand EDW. C. Levy Co.	0	2.67	0 2.67 X 62.4	0.00	0
H2 Sand Bay Aggregates	2	2.77	980 2.77 X 62.4	5.67	980
Arctic White Stoneco	1	2.61	462 2.61 X 62.4	2.84	462
Coarse Aggregate (26A) Ottawa Lake	4	2.73	1820 2.73 X 62.4	10.68	1820
Portland (White) Cement Federal White Type 1	N/A	3.15	720 3.15 X 62.4	3.66	720
Portland (Gray) Type 1 St. Mary's Cement	N/A	3.15	0 3.15 X 62.4	0.00	0
Water (W/C = .37)	N/A	1.00	34 gal	4.55	284

Add Mixtures		
Premiere UltraFlo DP	32 fl oz	2
Premiere ConAir X	2 oz	0.33
Added Pigment (color) (Color name here)	0	0
Total	**27.40**	**4,268**

Minimum Material Requirements
28 day strength = 5,000 psi
Water Absorption = 6% by weight, 14% by volume
Spread 25" - 27"
Air Entrainment = 4% to 7%

APA CERTIFIED PLANT

1927 CAST STONE INSTITUTE®

Date Printed: 8/22/2022

Royal Stone
Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

Mix Design - "All White" (WET)
Patch Mix Calculation Chart

Size of patch mix needed: 5 lbs.

Raw material list	lbs. of material	% of mix	Amount needed (lbs)	Amount needed (oz)
Mason Sand EDW. C. Levy Co.	0	0.00%	0.00	0.00
H2 Sand Bay Aggregates	980	24.61%	1.23	19.69
Arctic White Stoneco	462	11.60%	0.58	9.28
Coarse Aggregate (26A) Ottawa Lake	1820	45.71%	2.29	36.56
Portland (White) Cement Federal White Type 1	720	18.08%	0.90	14.47
Portland (Gray) Type 1 St. Mary's Cement	0	0.00%	0.00	0.00
Added Pigment (color) (Color name here)	0	0.00%	0.00	0.00
Total:	**3982**	**100%**	**5.00**	**80**

Additional Notes:

Date Printed: 8/22/2022

Royal Stone

Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

CNU Mix Design

Materials	Scoop	Specific Gravity	Material Cu Ft	Volume Cu Ft	Weight lbs.
Mason Sand EDW. C. Levy Co.	1	2.67	476 2.67 X 62.4	2.86	476
H2 Sand Bay Aggregates	2	2.77	980 2.77 X 62.4	5.67	980
Arctic White Stoneco	0	2.61	0 2.61 X 62.4	0.00	0
Coarse Aggregate (26A) Ottawa Lake	4	2.73	1820 2.73 X 62.4	10.68	1820
Portland (White) Cement Federal White Type 1	N/A	3.15	720 3.15 X 62.4	3.66	720
Portland (Gray) Type 1 St. Mary's Cement	N/A	3.15	0 3.15 X 62.4	0.00	0
Water (W/C = .39)	N/A	1.00	34 gal	4.55	284

Add Mixtures		
Premiere UltraFlo DP	32 fl oz	2
Premiere ConAir X	2 oz	0.33
Added Pigment (color) #2 Yellow	4oz	0.25
Total	**27.42**	**4,283**

Minimum Material Requirements
28 day strength = 5,000 psi
Water Absorption = 6% by weight, 14% by volume
Spread 25" - 27"
Air Entrainment = 4% to 7%

APA CERTIFIED PLANT

Date Printed: 8/22/2022

Royal Stone
Cast Stone Producers
3014 Dietz Rd - Williamston, MI 48895
Phone: (517) 655-5150 - Fax: (517) 655-2027

CNU Mix Design
Patch Mix Calculation Chart

Size of patch mix needed: 5 lbs.

Raw material list	lbs. of material	% of mix	Amount needed (lbs)	Amount needed (oz)
Mason Sand EDW. C. Levy Co.	476	11.91%	0.60	9.53
H2 Sand Bay Aggregates	980	24.52%	1.23	19.62
Arctic White Stoneco	0	0.00%	0.00	0.00
Coarse Aggregate (26A) Ottawa Lake	1820	45.54%	2.28	36.43
Portland (White) Cement Federal White Type 1	720	18.02%	0.90	14.41
Portland (Gray) Type 1 St. Mary's Cement	0	0.00%	0.00	0.00
Added Pigment (color) #2 Yellow	0.25	0.01%	0.00	0.01
Total:	**3996.25**	**100%**	**5.00**	**80**

Additional Notes:

Date Printed: 8/22/2022

STONECO

Tel: (734) 856-2257
Fax: (734) 856-7996

7555 Whiteford Road
Ottawa Lake, Michigan 49267
www.stoneco.net

January 08,2026

Royal Stone LLC

Dear Ms., Daft,

This letter is intended to inform you that the material provided by the Stoneco- Ottawa Lake MDOT Pit # 58-00003CA for MDOT Projects meets all physical requirements.
As a Pre-Qualified Aggregate supplier, we are supplying MDOT 26A.
This material meets the 2012 MDOT Standard Specifications for Construction in accordance with 902.03.C and Meets ASTM C-33 Specifications.

Stoneco of Michigan is proud to be a supplier of quality aggregates to the construction industry. I trust the above information will meet your requirements.

If you require any further information, please feel free to contact me.

Sincere regards,

Cynthia A. Brock,
Quality Control –Ottawa Lake

STONECO
A CRH COMPANY

Ottawa Lake
ASI # 58-0003CA
7555 Whiteford Rd
Ottawa Lake, MI 49267

Plant 141_00468-Ottawa Lake
Product 2026-MDOT 26A Limestone
Period: 04/01/2026 - 04/24/2026

Name/Title Cynthia Brock-MCAT-100602-0430 / QC Manager
Report Date 04/24/2026

Procedure	Sieve/Test	Result	Unit	MDOT 26A
ASTM C136&117 MTM109&108	3/4"	100.0	%	100-100
	1/2"	99.0	%	95-100
	3/8"	81.7	%	60-90
	#4	7.3	%	5-30
	#8	1.7	%	0-12
	#16	1.5	%	
	#30	1.3	%	
	#50	1.2	%	
	#100	1.2	%	
	#200	1.1	%	
	Wash Loss (#200/75um)	1.0	%	0-3

STONECO

Tel: (734) 856-2257
Fax: (734) 856-7996

7555 Whiteford Road
Ottawa Lake, Michigan 49267
www.stoneco.net

January 8th ,2026

Royal Stone LLC

Dear Ms., Daft,

This letter is intended to inform you that the material provided by the Stoneco- Shelly Wyandot Dolomite MDOT Pit # 93.-0031CA for MDOT Projects meets all physical requirements. As a Pre-Qualified Aggregate supplier, we are supplying the MDOT Sand.
This material meets the 2020 MDOT Standard Specifications for Construction in accordance with 902.03.C and Meets ASTM C-33 Specifications.

Stoneco of Michigan is proud to be a supplier of quality aggregates to the construction industry. I trust the above information will meet your requirements.

If you require any further information, please feel free to contact me.

Sincere regards,

Cynthia A Brock
Stoneco-QC Manager

Cc: File
Royal Stone LLC

STONECO
A CRH COMPANY

01/09/2026

Ottawa Lake
ASI # 58-0003CA
7555 Whiteford Rd
Ottawa Lake, MI 49267

2180-White Limestone Sand- Wyandot

Procedure	Sieve/Test	Average	Unit	Wyandot White Limestone Sand
	3/8"	100.0	%	100-100
	#4	99.3	%	
	#8	92.8	%	
	#16	70.7	%	
	#30	49.9	%	
	#50	31.5	%	
	#100	9.9	%	
	#200	4.7	%	
	Wash Loss (#200/75um)	4.2	%	0.0-10.0

Name/Title Cynthia Brock-MCAT-100602-0430 / QC Manager

Bay AGGREGATE, INC.
411 TIERNAN RD. • PO BOX 1067 • BAY CITY, MI 48706
PHONE (989) 667-5990 • FAX (989) 667-5991
"AN EQUAL OPPORTUNITY EMPLOYER"

January 16, 2026

To: Debbie Daft

RE: Material Certification

The Cedarville H-2 (3/8 x 1/8) materials supplied to Royal Stone LLC meets the ASTM C-33 specification with exception to the #100 and the #200 sieve.

If you have any questions feel free to contact me.

Ben Ochsenkehl

Quality Manager

Bay Aggregate, Inc.

411 Tiernan Rd. • P.O. Box 1067 • Bay City, MI • 48706 • (989) 667-5990 • Fax (989) 667-5991

Date 1/12/2026 Vessel

Material H2

State Pit Number 49-065

Quarry Cedarville

Sample from stockpile at Bay Aggregate

Pile Location Sample Pile #1

Sieve Size	Retained Weight	Retained Percent	Cumulative % Retained	Cumulative % Passing	Specification Requirements	
2 "						
1 1/2 "						
1 1/4 "	0	0.0%	0.0%	100%		
1 "	0	0.0%	0.0%	100%		
3/4 "	0	0.0%	0.0%	100%		
1/2 "	0	0.0%	0.0%	100%		
3/8 "	0	0.0%	0.0%	100%		
1/4"	0	0.0%	0.0%	100%		
no. 4	10	0.4%	0.4%	100%		
no. 8	499	19.0%	19.3%	81%		
no. 16	856	32.5%	51.9%	48%		
no. 30	552	21.0%	72.9%	27%		
no. 50	293	11.1%	84.0%	16%		
no. 100	175	6.7%	90.6%	9%		
no. 200	116	4.4%	95.0%	5%		
pan	27	1.0%	96.0%	4%		
LBW	104	4.0%				
TOTAL:	2630.80	96.04%				
	0.00					

LOSS BY WASH 3.96% **LBW MAX**

Initial Weight	2630.8	g
Weight after Washing	2526.7	g
Loss by Washing	104.1	g

Accepted Yes

Rejected

MOISTURE 4.63%

Rodded

Shoveled

Initial Weight	2758.4	g
Dry Weight	2630.8	g
Moisture	127.6	g

Tested By Paul S.

Paul Strpko
Michigan Certified Aggregate Technician
Cert # 102677-0129

Ben Ochsenkehl
Michigan Certified Aggregate Technician
Cert # 102678-0129

SOLUTIONS FOR YOUR ENVIRONMENT
9300 Dix Avenue, Dearborn, MI 48120 Phone (313) 429-2200 Fax (313) 429-2448

January 8, 2026

Debbie Daft
Royal Stone LLC
3014 Dietz Rd.
Williamston, MI 4889

Dear Debbie,

The Edw. C. Levy Co. is proud to be a supplier of quality aggregates to the construction industry. Thank you for your request regarding our aggregate materials, I trust the following information will meet your requirement.

The Mortar Sand is produced at the American Aggregate – Buno Plant (State Pit No. 47-16). Laboratory testing has shown that this product, when used with St. Marys Type N or Type S Masonry Cement, as well as St. Marys Type N or Type S Portland Cement Lime, conforms to The American Society for Testing and Materials (ASTM) C 270 "Standard Specification for Mortar for Unit Masonry", Table 2 "Property Specification Requirements".

Regards,

Casey Smith
Laboratory Operations Manager
Edward C. Levy Corp. Division
csmith@levynet.com
313-293-0348

SINCE 1918
SOLUTIONS FOR YOUR ENVIRONMENT®

AA BUNO PLANT
MDOT #47-016
13017 Buno RD
Milford, MI 48380
313-378-6528

Plant 031-AA BUNO PLANT

Product 1161-MORTAR SAND GR

Period: 03/01/2026 - 03/31/2026

Name/Title Doug Storey / QC Technician

Report Date 04/02/2026

Procedure	Sieve/Test	Result	Unit	MORTAR SAND GR Spec
	3/8" (9.5mm)	100.0	%	
	#4 (4.75mm)	99.5	%	
	#8 (2.36mm)	95.9	%	
	#16 (1.18mm)	90.1	%	
	#30 (.6mm)	77.6	%	
	#50 (.3mm)	40.5	%	
	#100 (.15mm)	7.4	%	
	#200 (75µm)	2.2	%	
	FM	1.89		
	Wash Loss (#200/75um)	1.8	%	
	Total Moisture	6.3	%	
	Cu	2.73		

Votorantim Cimentos

St Marys Cement

Letter of Certification: Blended Cement - Type IL – Detroit Plant

January 8, 2026

Attention: Ms. Debbie Daft
Royal Stone LLC
3014 Dietz Rd
Wiliamston, MI 48895

Dear Ms. Daft:

This letter is to certify that St. Marys Cement Inc. (U.S.) Detroit Plant manufactures Type IL Portland Cement, which meets the requirements of ASTM C 595, Specifications for Blended Hydraulic Cements for Type IL. In addition, the Michigan Department of Transportation, Materials and Technology Divisions recognize St. Marys Cement Inc. (U.S.) as an approved producer of Type IL Portland Cement. The specific gravity is 3.12.

If we can be of further assistance, please feel free to contact our office.

Sincerely,

Nick Popoff
VP Product Performance and Technical Services

St. Marys Cement Inc. (U.S.)
9333 Dearborn Street
Detroit, MI 48209
Tel 313 849-4566
Fax 313 849 4555
Cell 313 938 3770

votorantimcimentos.com
stmaryscement.com

FEDERAL WHITE CEMENT
PORTLAND–LIMESTONE CEMENT

FEDERAL WHITE CEMENT

Federal White Cement Marketing, Inc.
Federal White Cement Ltd.

April 7, 2026

LABORATORY TEST REPORT

Sample Source: **Portland Type IL (10), Type GUL (10)** March Shipping

ASTM C595
REFERENCE SPECIFICATION CSA A 3001

Item	Spec. Limit	Results
SO_3	3.0 max [B]	3.94
LOI	10.0 max.	7.53
Limestone Addition		10.70
Air, volume %	12 max	7.6
Blaine, m2/kg	[A]	610
% Passing 325	[A]	99.7
Density, g/cm^3	[A]	2.91
Na_2O_{eq}. (Alkali Content)	[A]	0.33
Test Method C1038 Mortar Bar Expansion % [B,L]	*0.020% max @ 14 days*	0.009
Vicat Set Time, minutes		
Initial	not ≤ 45	76
Final	not ≥ 420	176

Compressive Strength, PSI

Item	Spec. Limit	Results
1-day	[A]	2948
3-day	1890	4276
7-day	2900	5212
28-day [L]	3620	6951

Compressive Strength, Mpa

Item	Spec. Limit	Results
1-day	[A]	20.3
3-day	13	29.5
7-day	20	35.9
28-day [L]	25	47.9

[A] *Not Applicable*
[B] It is permissible to exceed the values in the table for SO3 content, provided it has been demonstrated by Test Method C1038 that the cement with the increased SO3 will not develop expansion exceeding 0.020 % at 14 days.
[L] The value is based on the previous month

We certify that the above-described cement at the time of shipment meets the chemical and physical requirements of the current applicable specification of ASTM C595 and CSA A-3001.

We are not responsible for improper use or workmanship.

Physical Address: Federal White Cement
355151 35th Line Embro, Ontario, CA, N0J1J0

Mailing Address: Federal White Cement
P.O. Box PO Box 1609 Woodstock, ON N4S 0A8

DCS

MAIN OFFICE: 2024 South Lenox Street • Milwaukee, WI 53207
SALES OFFICE: 5409 West Woolworth Avenue • Milwaukee, WI 53218
PHONE: (414) 769-2580 • (800) 657-0737

January 7, 2026

Royal Stone
3014 Dietz Road
Williamston, MI 48895

Dear Customer:

This letter is to certify that all of our pigments pass ASTM C-979- Standard Specification for Integrally Colored Concrete. Please keep this document on file.

If you have any questions, or need additional copies of this letter, please contact me.

Yours Sincerely
Dynamic Color Solutions, Inc.

Julie Katorski

Julie Katorski
AR/HR

Main Office: 2024 S. Lenox St. Milwaukee, WI 53207 Sales Office: 5409 W. Woolworth Ave. Milwaukee, WI 53218

Phone: 414-769-2580 (800) 657-0737 Fax: 414-769-2585

DCS CEMENT COLORS

Product Name:
DCS Cement Colors

Manufacturer:
Dynamic Color Solutions, Inc.
2024 S. Lenox Street
Milwaukee, WI 53207
(414) 769-2580
FAX (414) 769-2585

Product Description:
Basic Use: DCS Cement Colors are all pure mineral pigments designed to be used specifically in cementitious materials. DCS Cement Colors can be used for integral coloring of concrete block, concrete floors, walks, patios, driveways, concrete pavers, vertical precast, and poured in place concrete construction.

Composition and Materials: DCS Cement Colors are composed of finely milled 95-99% minus 325 mesh inorganic synthetic and natural iron oxides. Depending upon the color, different combinations of natural yellow, red, brown and black iron oxides, and mineral blacks are blended with synthetic red, yellow, and black iron oxides, and chromium oxide greens. The natural iron oxides are dried, pulverized and classified from mineral earth iron oxides (in a range of 50-80% iron oxide).

The synthetic iron oxides are manufactured by different methods of calcination and precipitation of iron solutions or oxides under carefully controlled conditions. These processes produce roughly 93-99% pure iron oxides. DCS synthetic and natural inorganic iron oxides are inert, stable to all atmospheric conditions, ultra violet rays, alkalis and normal acid conditions. They are sunfast, limeproof and absolutely free of any water soluble fillers.

Packaging: DCS Cement Colors are packaged in 50 pound bags or in batch sized bags as needed.

Technical Data:
Performance Properties: DCS Cement Colors are alkali resistant, water insoluble, inert, light resistant, inorganic, and limeproof.

Physical Properties: Depending upon the DCS Color Index Name and Number, the fineness of each ranges from 95-99% minus 325 mesh.

General Formula: Fe_2O_3

pH: 6.5 to 8.5

Installation:
Preparatory Work: The mixing shall conform to ASTM C94, the portland cement ASTM C150, and the coarse and fine aggregates ASTM C33. Color addition should not exceed 10% of the weight of the cement conforming to ASTM C979.

Application: A power mixer should be used to provide thorough mixing and dispersing of color. To provide consistent and uniform color a sound method is: (1) Load the mixer with selected mix design of portland cement, coarse, and fine aggregate. (2) Add the designated amount of DCS Cement Color by weight along with the cement for the mix and agitate at full speed for several minutes. Any change in proportioning the amount of water, aggregate, sand and color to the cement and/or type of cement and aggregate used on the same job can result in variation of color tone in the finished job.

Before loading, agitator should be checked for residual water from cleaning.

Disclaimer/Warranty
Except as expressly set forth herein, there are no warranties expressed or implied, including no warranty of merchantability, which extend beyond the description of the face hereof.

Seller shall remedy or replace, at its option, free of charge, any color which does not comply with aforesaid color specifications provided that such nonconformity is reported in writing prior to the use of the color. Seller or manufacturer shall not have any further liability or obligation for prospective profits or for general, special, indirect or consequential damages, nor shall recovery of any kind against the seller or manufacturer be greater in amount than the purchase price of the specific material sold and causing alleged damage.

Final determination of the suitability of the color for the use contemplated by buyer, is the sole responsibility of the buyer. The seller or manufacturer shall in no way be responsible for the suitability of the color for any particular end use.

The seller or manufacturer, further, will not guarantee color of the finished work in which DCS color is used.

Colors are not fit for human consumption.

Maintenance:
After the concrete has cured for a period of at least 28 days various "proprietary sealers" may be used for protection against the elements. Please check with the sealer manufacturer for aesthetic changes the sealer may cause to the appearance of the Colored Concrete Surface.

Technical Services
The DCS Color Laboratory, with over 40 years experience, is available at no charge to match existing colored concrete, to develop special color tones or to provide expert color assistance to solve your individual color needs.

Since the color shades of cements and aggregates (coarse and fine) are different in each locality of the U.S. and Canada, it is recommended to send 1 lb. of local cement and 1 lb. of the coarse and fine aggregates that are to be used in the concrete mix design. Please indicate the bag mix of cement and proportion of aggregates that is to be used, along with a sample of the desired color that is to be produced.

Send to:

.....Dynamic Color Solutions, Inc.
.....2024 S. Lenox St.
.....Milwaukee, WI 53207

Color matching services are also available for mortar.

Samples: Samples of DCS Cement Colors are available for submittals either in convenient sample channels, and/or in preweighed bags for mock-ups.

NUCOR

Mill Certification

07/16/2025

MTR#:2056267-6
Lot #:380005669720
3630 Fourth Street
Flowood, MS 39232 US
601 939-1623
Fax: 601 936-6202

Sold To: CONSOLIDATED CONST PROD
PO BOX 1330
ANDOVER, OH 44003-1330 US

Ship To: CONSOLIDATED CONST PROD-AND
204 E MAIN ST
ANDOVER, OH 44003 US

Customer PO	59285C	Sales Order #	44021113 - 3.3
Product Group	Rebar	Product #	1048263
Grade	A615 Gr 60/AASHTO M31	Lot #	380005669720
Size	#3	Heat #	3800056697
BOL #	BOL-2099439	Load #	2056267
Description	Rebar #3/10mm A615 Gr 60/AASHTO M31 20' 0" [240"] 2001-6000 lbs	Customer Part #	
Production Date	05/19/2025	Qty Shipped LBS	6090
Product Country Of Origin	United States	Qty Shipped EA	810
Original Item Description		Original Item Number	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Melt Country of Origin : United States
Melting Date: 05/17/2025

Roll Country of Origin : United States
Rolling Date: 05/19/2025

	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Ni (%)	Cr (%)	Mo (%)	Cu (%)	V (%)	Nb (%)
	0.39	0.80	0.010	0.028	0.246	0.11	0.14	0.02	0.30	0.023	0.001

Mechanical

	Average Deformation Height (IN)	Bend Test
(1)	0.031	Pass

Tensile testing

	Yield (PSI)	Tensile (PSI)	Elongation in 8" (%)
(1)	70700	98800	18.8

Other Test Results

Weight Percent Variance (%) : -3.12 Tensile / Yield Ratio : 1.40

Comments:

Nucor Steel Jackson, Inc. is in compliance with and certified to: ISO 9001:2015, ISO 14001:2015, ABS Quality Assurance Program & AASHTO's NTPEP Reinforcing Steel and Wire (REBAR) Technical Committee Work Plan. All manufacturing processes for this product, including melting, casting, and hot rolling, were performed in the United States of America.
Mercury not intentionally added at any point during manufacturing or testing of this material. No weld repair was performed.
Material and Mill Certification are in full compliance with the American Iron and Steel requirement as mandated in EPA's State Revolving Fund Programs and complies with the Buy American Act, (FTA) Buy America Requirements (49 CFR part 661), and (FHWA) Buy America Requirements (23 CFR part 635.410)
This material was tested using full-section samples.

Nolan Guess, Quality Supervisor

NUCOR

Mill Certification

09/18/2025

MTR#:2123663-10
Lot #:440004060620
912 Cheney Avenue
Marion, OH 43302 US
800 333-4011
Fax: 740 383-6429

Sold To: CONSOLIDATED CONST PROD
PO BOX 1330
ANDOVER, OH 44003-1330 US

Ship To: CONSOLIDATED CONST PROD-AND
204 E MAIN ST
ANDOVER, OH 44003 US

Customer PO	59792C	Sales Order #	44021373 - 1.2
Product Group	Rebar	Product #	3058988
Grade	A615 Gr 60/AASHTO M31	Lot #	440004060620
Size	#4	Heat #	4400040606
BOL #	BOL-2169588	Load #	2123663
Description	Rebar #4/13mm A615 Gr 60/AASHTO M31 20' 0" [240"] 2001-6000 lbs	Customer Part #	
Production Date	09/12/2025	Qty Shipped LBS	8176
Product Country Of Origin	United States	Qty Shipped EA	612
Original Item Description		Original Item Number	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Melt Country of Origin : United States — Melting Date: 09/05/2025

Roll Country of Origin : United States — Rolling Date: 09/12/2025

C (%)	Mn (%)	P (%)	S (%)	Si (%)	Ni (%)	Cr (%)	Mo (%)	Cu (%)	V (%)	Sn (%)
0.23	0.70	0.015	0.029	0.198	0.09	0.16	0.04	0.34	0.003	0.011

Mechanical

	Average Deformation Height (IN)	Bend Test
(1)	0.036	Pass

Tensile testing

	Yield (PSI)	Tensile (PSI)	Elongation in 8" (%)
(1)	81500	97300	14.9

Other Test Results

Tensile / Yield Ratio : 1.19

Weight Percent Variance (%) : -2.99

Comments:

Except where noted, all manufacturing processes for this product, including melting, casting, and rolling, were performed in the USA and comply with 23 CFR 635.410 Buy America requirements (FHWA).

All products produced are weld free. Mercury, in any form, has not been used in the production or testing of this material.

Ryan Pelter

Ryan Pelter, Quality Supervisor

NUCOR

Mill Certification

08/27/2025

MTR#:2103030-1
Lot #:440004036420
912 Cheney Avenue
Marion, OH 43302 US
800 333-4011
Fax: 740 383-6429

Sold To: CONSOLIDATED CONST PROD
PO BOX 1330
ANDOVER, OH 44003-1330 US

Ship To: CONSOLIDATED CONST PROD-AND
204 E MAIN ST
ANDOVER, OH 44003 US

Customer PO	59641C	Sales Order #	44021373 - 3.6
Product Group	Rebar	Product #	3057319
Grade	A615 Gr 60/AASHTO M31	Lot #	440004036420
Size	#5	Heat #	4400040364
BOL #	BOL-2145771	Load #	2103030
Description	Rebar #5/16mm A615 Gr 60/AASHTO M31 20' 0" [240"] 2001-6000 lbs	Customer Part #	
Production Date	08/27/2025	Qty Shipped LBS	48051
Product Country Of Origin	United States	Qty Shipped EA	2303
Original Item Description		Original Item Number	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Melt Country of Origin : United States — Melting Date: 08/24/2025

Roll Country of Origin : United States — Rolling Date: 08/27/2025

C (%)	Mn (%)	P (%)	S (%)	Si (%)	Ni (%)	Cr (%)	Mo (%)	Cu (%)	V (%)	Sn (%)
0.26	0.70	0.016	0.029	0.250	0.11	0.20	0.04	0.32	0.002	0.013

Mechanical

	Average Deformation Height (IN)	Bend Test
(1)	0.044	Pass

Tensile testing

	Yield (PSI)	Tensile (PSI)	Elongation in 8" (%)
(1)	77200	94600	15.2

Other Test Results

Tensile / Yield Ratio : 1.22 — Weight Percent Variance (%) : -4.31

Comments:
Except where noted, all manufacturing processes for this product, including melting, casting, and rolling, were performed in the USA and comply with 23 CFR 635.410 Buy America requirements (FHWA).
All products produced are weld free. Mercury, in any form, has not been used in the production or testing of this material.

Ryan Pelter, Quality Supervisor

4400037435 03-09-25

NUCOR

Mill Certification

05/07/2025

MTR#:1921310-3
Lot #:440003743520
912 Cheney Avenue
Marion, OH 43302 US
800 333-4011
Fax: 740 383-6429

Sold To: SIMCOTE INC
250 N GREENWOOD ST
MARION, OH 43302 US

Ship To: SIMCOTE INC - MARION
250 N GREENWOOD ST
MARION, OH 43302 US

Customer PO	OH-2305	Sales Order #	44019932 - 5.8
Product Group	Rebar	Product #	1059662
Grade	A615 Gr 60/M31 C	Lot #	440003743520
Size	#6	Heat #	4400037435
BOL #	BOL-2022480	Load #	1921310
Description	Rebar #6/19mm A615 Gr 60/M31 C 60' 0" [720"] Epoxy 6001-10000 lbs	Customer Part #	
Production Date	03/09/2025	Qty Shipped LBS	18744
Product Country Of Origin	United States	Qty Shipped EA	208
Original Item Description		Original Item Number	

I hereby certify that the material described herein has been manufactured in accordance with the specifications and standards listed above and that it satisfies those requirements.

Melt Country of Origin : United States — Melting Date: 03/08/2025

Roll Country of Origin : United States — Rolling Date: 03/09/2025

	C (%)	Mn (%)	P (%)	S (%)	Si (%)	Ni (%)	Cr (%)	Mo (%)	Cu (%)	V (%)	Sn (%)
	0.25	0.69	0.023	0.038	0.282	0.13	0.23	0.06	0.37	0.003	0.015

Mechanical

	Average Deformation Height (IN)	Bend Test
(1)	0.055	Pass

Tensile testing

	Yield (PSI)	Tensile (PSI)	Elongation in 8" (%)
(1)	75000	92200	16.4

Other Test Results

Tensile / Yield Ratio : 1.23 — Weight Percent Variance (%) : -4.93

Comments:

Except where noted, all manufacturing processes for this product, including melting, casting, and rolling, were performed in the USA and comply with 23 CFR 635.410 Buy America requirements (FHWA).
All products produced are weld free. Mercury, in any form, has not been used in the production or testing of this material.

4400037435 03-09-25

Ryan Pelter

Ryan Pelter, Quality Supervisor

Steel Dynamics, Inc.
Long Products Group
Structural and Rail Division
601 S. County Road 700 East
Columbia City, Indiana 46725
(260) 625-8100 (260) 625-8950 FAX

Quality Steel 100% EAF Melted and Manufactured in the USA
Complies to Buy America requirements
ISO 9001:2015, NTPEP, and ABS Certified
CMTR complies with EN 10204 3.1.

CERTIFIED MILL TEST REPORT

Printed: 07 / 19 / 2023
Produced: 07 / 15 / 2023

Ship to: Customer # 001704
Consolidated Construction Products
100 Marc Drive
CPU
Cuyahoga Falls OH, 44223 US
Attn: Ken Lance

Bill to:
CONSOLIDATED CONSTRUCTION PRODUCTS
100 Marc Drive
Cuyahoga Falls OH, 44223 US

GENERAL INFORMATION

Product Rebar
Size #5

Heat Number B231343
Condition(s) As-Rolled
Fully Killed
No Weld Repair

SPECIFICATIONS

Standards	Grades
» ASTM A615/615M - 22	Grade 60
AASHTO M31 - 21	Grade 60 Type S

SHIPMENT DETAILS

BOL # 0000780892 - 14017.92 lbs

Bundle / ASN #	Length	pcs	Cust PO | Job/Reference
010228864	20' 0"	96	54165
010228865	20' 0"	96	54165
010228866	20' 0"	96	54165
010228869	20' 0"	96	54165
010228875	20' 0"	96	54165
010228876	20' 0"	96	54165
010228877	20' 0"	96	54165

CHEMICAL ANALYSIS (weight percent)

C	Mn	P	S	Si	Cu	Ni	Cr	Mo	V	Nb/Cb	Al	*CE11	Analysis Type
.30	.66	.015	.021	.15	.33	.11	.16	.03	<.001	<.001	.002	.439	Heat

MECHANICAL TESTING

Test	Yield (fy) Strength ksi / MPa	Tensile (fu) Strength ksi / MPa	fu / fy ratio	% Elong. (8" gage)
1	66 / 455	92 / 635	1.39	17
2	66 / 455	92 / 635	1.40	20

REBAR BEND TEST

Test	Result
1	PASS

DEFORMATION DIMENSIONS

Avg Height (in)	Avg Spacing (in)
0.033	0.423

Notes: CE11 (ASTM A706) = C + (Mn/6) + (Cu/40) + (Ni/20) + (Cr/10) - (Mo/50) - (V/10)

I hereby certify that the material described herein has been made to the applicable specification by the electric arc furnace/continuous cast process and tested in accordance with the requirements of American Bureau of Shipping Rules with satisfactory results.

Signed:

I hereby certify that the content of this report are accurate and correct. All tests and operations performed by this material manufacturer are in compliance with the requirements of the material specifications and applicable purchaser designated requirements.

Signed: **Doug Blomeke** Quality Manager

Form F-6100-002-054 rev 8

ABS CERTIFICATION

State of Indiana, County of Whitley Sworn to and subscribed before me this _____ day of _____.

Signed: _____ My commission expires: _____
Notary Public

ASTM A6 - 14.6: A signature is not required on the test report; however, the document shall clearly identify the organization submitting the report. Notwithstanding the absence of a signature, the organization submitting the report is responsible for the content of the report

Premiere Concrete Admixtures
508 Cedar St. PO Box 277
Pioneer, OH 43554
Phone: 800-503-3418
Fax: 419-737-9400
www.PremiereAdmix.com

Product: ConAir® X

Prepared for: Royal Stone LLC

Address: 3014 Dietz Rd
Williamston, MI 48895

Project: General Production

Date: 1/8/2026

ConAir® X

Premiere Concrete Admixtures hereby certifies that ConAir® X meets or exceeds the requirements of ASTM C260 and AASHTO T 154.

Premiere Concrete Admixtures also certifies that ConAir® X does not contain calcium chloride
or added chloride containing compounds and will not contribute to corrosion of reinforcing steel. Any incidental chloride ions found in the product are in trace amounts, originating from a municipal water supply, and contribute less than 0.3% by weight when dosed according to manufacturer recommendations.

In addition, we certify that all Premiere Concrete Admixture products are manufactured in the United States by an American Owned and Operated company.

Sincerely,

Douglas C. Wittler
President
Premiere Concrete Admixtures

Rev 02.2022

ConAir® X

Air Entraining Admixture for Concrete

Premiere Concrete Admixtures

PRODUCT INFORMATION

PACKAGING

Packaged in 55 gallon drums, 275 gallon totes, and in bulk.

SHELF LIFE

2 years in original unopened container.

STORAGE

ConAir® X should be stored at temperatures above 35°F (2°C) degrees. Although freezing does not harm the performance of **ConAir® X**, precautions should be taken to protect it from freezing. If it should happen to freeze, thaw and reconstitute with mechanical agitation. **Do not use pressurized air for agitation.**

SPECIFICATIONS/COMPLIANCES

ASTM C260
AASHTO M 154

DESCRIPTION

ConAir® X is an aqueous solution formulated for use as an air entraining admixture for concrete. **ConAir® X** is manufactured under strict quality control standards to ensure uniform performance at the job site.

ConAir® X introduces millions of uniformly sized and spaced air voids throughout the concrete mixture. Concrete containing these microscopic air bubbles has been proven to be far more resistant to freezing and thawing than non-air entrained concrete.

PERFORMANCE BENEFITS

- Significantly improves freeze-thaw resistance
- Improves resistance to surface deterioration from de-icing chemicals
- Reduces permeability
- Improves workability
- Improves pumpability
- Reduces bleeding

DOSAGE RATES AND DIRECTIONS FOR USE

ConAir® X dosage will vary with mix materials and proportioning, as well as intended concrete performance requirements.

Typical **ConAir® X** addition rates range from 0.2 to 5.0 oz/cwt of cementitious material. (13 to 325 mL/100kg)

For best results, each admixture must be batched at separate intervals with the initial or final batch water, and should not come in direct contact with any other admixture until they are mixed in the concrete batch. Admixtures should not come in contact with any dry cementitious material.

TECHNICAL NOTES

ConAir® X is compatible with Portland cements, blended cements, class C and F fly ash, slag cements, silica fume, calcium chloride, and fibers. **ConAir® X** can be used in all white, colored, and architectural concrete.

Premiere Concrete Admixtures
508 Cedar St. PO Box 277
Pioneer, OH 43554
Phone: 800-503-3418
Fax: 419-737-9400
www.PremiereAdmix.com

Product: UltraFlo® DP

Prepared for: Royal Stone LLC

Address: 3014 Dietz Rd
Williamston, MI 48895

Project: General Production

Date: 1/8/2026

UltraFlo® DP

Premiere Concrete Admixtures hereby certifies that UltraFlo® DP meets or exceeds the requirements of ASTM C494 Type A and F and AASHTO M 194 Type A and F and ASTM C1017.

Premiere Concrete Admixtures also certifies that UltraFlo® DP does not contain calcium chloride or added chloride containing compounds and will not contribute to corrosion of reinforcing steel. Any incidental chloride ions found in the product are in trace amounts, originating from a municipal water supply, and contribute less than 0.3% by weight when dosed according to manufacturer recommendations.

In addition, we certify that all Premiere Concrete Admixture products are manufactured in the United States by an American Owned and Operated company.

Sincerely,

Douglas C. Wittler
President
Premiere Concrete Admixtures

Rev 02.2022

UltraFlo® DP

High-Range Water-Reducing Admixture for Concrete

Premiere Concrete Admixtures

PRODUCT INFORMATION

PACKAGING

Packaged in 55 gallon drums, 275 gallon totes, and in bulk.

SHELF LIFE

2 years in original unopened container.

STORAGE

UltraFlo® DP may freeze at temperatures below 35ºF (2ºC). Although freezing does not harm **UltraFlo® DP**, precautions should be taken to protect it from freezing. If it should happen to freeze, thaw and reconstitute with mechanical agitation. **Do not use pressurized air for agitation.**

SPECIFICATIONS/COMPLIANCES

ASTM C494 Type A and F
ASTM C1017 Type 1
AASHTO M 194 Type A and F

DESCRIPTION

UltraFlo® DP is a polycarboxylate based water-reducer. This ready to use aqueous solution is designed to provide numerous performance benefits resulting from the unique co-polymer chemistry. **UltraFlo® DP** enhances the performance of plastic and hardened concrete. **UltraFlo® DP** is manufactured under rigid quality control measures to provide uniform, reliable results.

PERFORMANCE BENEFITS

- Effective for producing self-consolidating concrete, with spread in excess of 28"
- Enables multi-castings per day in precast concrete production
- Improves form surfaces
- Reduces w/cm ratio by up to 30%
- Improves mix cohesiveness
- Optimizes cementitious efficiency
- Dramatically increases compressive/ flexural strengths
- Recommended for precast applications

DOSAGE RATES AND DIRECTIONS FOR USE

UltraFlo® DP is recommended for use at a dosage rate of 4 to 14 oz/cwt of cementitious material. (260 to 912 mL/100 kg)

UltraFlo® DP dosage rate depends on desired performance characteristics, mix variables, and conditions at time of placement. Higher dosages are acceptable with prior testing and confirmation of the desired performance with specific materials used.

For best results, each admixture must be batched at separate intervals with the initial or final batch water, and should not come in direct contact with any other admixture until they are mixed in the concrete batch. Admixtures should not come in contact with any dry cementitious material.

TECHNICAL NOTES

UltraFlo® DP is compatible with Portland cements, blended cements, class C and F fly ash, slag cements, silica fume, calcium chloride, and fibers.
UltraFlo® DP can be used in all white, colored, and architectural concrete.

Certificate of Analysis

SUMMIT LABORATORY, LLC
ISO 17025:2017 accredited. A2LA Certificate 3136.01

900 Godfrey Avenue SW
Grand Rapids, MI 49503
Ph 616-245-3818

Client: Royal Stone, Inc.
3014 Dietz Road
Williamston, MI 48895

Contact: Ms. Debbie Daft

Report Date: August 20, 2025

Report Prepared by: Alexis Thomas

Summit Laboratory Job #: 2508373

State of Michigan Certification (MI-EGLE) #: 9939

Sample Collected: 08/12/25 @ 10:36AM by Summit Laboratory Personnel
Sample Location: 3014 Dietz Road, Williamston, MI 48895 – Outdoor Spigot, North
Analyses Started: 08/12/25 @ 3:15PM
Analyses Completed: 08/20/25

Analysis Requested: Total coliform Quantified (SM 9223B), Nitrates Nitrogen (HACH Method 10206), Nitrites (EPA 300.0), Iron (EPA 200.7), Sodium (EPA 200.7), Calcium (EPA 200.7), Magnesium (EPA 200.7), Fluoride (EPA 300.0), Chloride (EPA 300.0), Sulfate (EPA 300.0), and Hardness (As CaCO3) (EPA 130.1)

Following are the analytical results for the **"Well Water"** sample collected:

Sample Description		Total Coliform (MPN/100mL)	Nitrates Nitrogen (mg/L)	*Nitrites (mg/L)	*Iron (mg/L)	*Sodium (mg/L)	*Calcium (mg/L)	*Magnesium (mg/L)	*Fluoride (mg/L)	*Chloride (mg/L)	*Sulfate (mg/L)	*Hardness (mg/L)
Outdoor Spigot – North Side	=	<1 (Absent)	<1.0	<0.100	0.291	13.8	69.2	25.3	0.481	0.631	<0.500	266

*Note: Partial analyses conducted by a subcontracted laboratory, certification number 0020.

Analyses are tested in accordance with "Standard Methods For The Examination Of Water and Wastewater", 21st Edition, 2005 or EPA methodology. Results reported are provided "as is" and relate only to the sample as received.

Report approved by:

Michael Snarski
Manager

"The fusion of science and service"

EaCo Chem

NMD 80®
NEW MASONRY DETERGENT

FOR PROFESSIONAL USE ONLY

PRODUCT DATA SHEET

NMD 80® is a buffered, acid-based new masonry cleaner designed for cleaning mortar smears off new masonry structures. NMD 80® can be used on a wide variety of substrates without harming the surface or color when used as directed. NMD 80® is the number one specified cleaner by brick and block manufacturers. NMD 80® requires no scrubbing to be effective.

Advantages

- Spray-on / rinse-off application increases production and reduces labor when applied through an EC-Jet.
- Will not harm most glass or anodized window frames when used as directed.
- Reduces water-in-wall issues, such as efflorescence.
- No respirator required when used outdoors (other safety precautions apply).
- One cleaner for multiple substrates, including unpolished natural stone and cast stone (see complete list under suitable substrates).
- For use on vertical and horizontal surfaces.
- Effective way to remove large scale efflorescence.
- Biodegradable
- Top down application allows more product coverage on lower elevations.

Limitations

- Should not be used on polished stone or lime-faced brick.
- Only apply to areas to be cleaned. Product can be corrosive to certain woods, metals, and plants.
- Avoid elevator doors as the coating will be affected by the chemical.
- Cover any building hardware, including brass, bronze, copper, gold, stainless or mild steel.
- Use low-pressure rinsing on synthetic stone and surface dyed substrates

Technical Data

Appearance:	Pale yellow/amber
Odor:	Strong scent
Physical State:	Liquid
pH:	<1.0
Boiling Point:	>210° F
Specific Gravity (water=1):	1.15 @ 77° F
Evaporation Rate:	As water
Solubility in Water:	Complete
Flash Point:	N/D
Viscosity	Water thin
Decomposition Temp:	N/D
Oxidizing Properties:	N/D

Preparation

Protect adjacent surfaces and surrounding building hardware not intended to be cleaned from exposure to the cleaning solution. Avoid direct contact with foliage. Cover landscape using plastic or wet the foliage with water before and after cleaning. Avoid wind drift on surrounding surfaces such as auto and pedestrian traffic. Elevator doors, stainless steel hardware, and brass coated parts should be covered. Generally, surfaces such as glass, anodized aluminum, brick, block, and limestone are not affected by NMD 80®. Since every surface and situation can be unique, proper testing is required.

Surface & Air Temperatures

Excessively high or low temperatures will produce poor results and possible harm. Best cleaning results are obtained when air and surface temperatures are above 40° Fahrenheit and less than 90° Fahrenheit. Do not clean when temperatures are below freezing or will be overnight. If freezing conditions exist, allow adequate time for the surface to thaw. If air temperatures exceed 90° Fahrenheit, flash cool the surface with water before applying product. Do not allow products to dry on the surface. Always rinse thoroughly while still wet.

Sample Panel

Always clean a sample panel prior to the start of full scale cleaning operations. This should be completed well in advance of the start date of the final clean down of the project. Once the sample panel has been cleaned, it should be allowed to dry completely. Final approval of the sample panel, as well as means and methods, should be given. Pre-testing will determine suitability and effectiveness on each type of surface and stain designated to be cleaned. Pre-testing will also determine dwell times and number of applications required to achieve desired results. Pre-testing will show any potential or adverse reactions to adjacent surfaces. Allow test areas to thoroughly dry before evaluating final appearance and results.

765 Commerce Ave. New Castle, PA 16101 | 724-656-1055 | www.eacochem.com | info@eacochem.com

THE MAINTENANCE SOLUTION

EaCo Chem

NMD 80®
NEW MASONRY DETERGENT

FOR PROFESSIONAL USE ONLY

PRODUCT DATA SHEET

Pre-Testing - Windows, Window Frames, Door Frames

The best way to test windows, window frames, and door frames is to apply the suggested product to the end of a pencil eraser and place a small dot on each of the surfaces in question. Allow the product to dry on the surface (10 to 15 min). Rinse completely and check the results. If this produces any type of discoloration, do not allow the product to come in contact with these surfaces. They must be covered prior to cleaning.

Suitable Substrates

The following substrates have been tested on and are deemed suitable under standard conditions. Pre-testing is always recommended prior to full-scale cleaning.

- ✓ Clay Brick
- ✓ Concrete Brick
- ✓ Glazed Brick
- ✓ CMU
- ✓ Colored Block
- ✓ Smooth Block
- ✓ Split Face Block
- ✓ Burnished Block
- ✓ Ground Faced Block
- ✓ Precast Concrete
- ✓ Limestone
- ✓ Natural Stone
- ✓ Stone Veneer
- ✓ Cast Stone
- ✓ Hardscape
- ✓ Clay Pavers
- ✓ Concrete Pavers
- ✓ Windows
- ✓ Colored Mortar
- ✓ Hardy Board

While this list is extensive, there are other substrates that NMD 80® may be suitable for that are not listed. Every cleaning situation is unique in its own way, so please follow all precaution, pre-testing and application instructions included in this Product Data Sheet.

Safety Information

Always wear goggles and chemical resistant gloves when handling this product. Read the Safety Data Sheet for additional safety and health hazard information prior to use. Do not get in eyes, on skin, or on clothing. Do not wear contact lenses when using this product. If material comes in contact with clothing, wash before re-use. Do not dilute this product with any other product except clean water. Do not use any other application other than what is specified in the application instructions. Keep container closed when not in use. Use with adequate ventilation. Use NIOSH/MSHA approved respiration devices when adequate ventilation is not available. Though the potential for fuming is minimal, take precautions to avoid exposing building occupants to fumes. Do not remove the label from the container. Dispose of empty containers in accordance with federal, state, and local requirements.

CAUTION: KEEP AWAY FROM CHILDREN
VELOCITY EHS 24 HOUR EMERGENCY RESPONSE SERVICE NUMBER - 1-800-255-3924

Dilutions

NMD 80® is diluted 4 parts water to 1 part NMD 80®. An EC-Jet is recommended to ensure both proper dilution and application of NMD 80®. Ideal size of pressure washer for exterior clean: cold water, gas-powered ranging from 3 to 6 gallons per minute pressure washer not to exceed 3,000 P.S.I. For a clearer understanding of how to use an EC-Jet watch our video at www.eacochem.com.

Coverage Rates

Coverage rates with NMD 80® using an EC-Jet will vary from 100-200 sq. ft. per gallon depending on the surface porosity, texture, ambient temperature, craftsmanship, severity of mortar smears, and severity of other post construction staining.

Application Instruction

Low Pressure Application

1. Lightly pre-wet or flash-cool the surface (do not soak).
2. Apply NMD 80® through an EC-Jet to the entire section to be cleaned. Start from the top and work down. Allow NMD 80® to dwell for 5-7 minutes.
3. After the initial application of chemical, scrape the large chunks of mortar with a long-handled scraper.
4. Check mortar smears and tags to see if it crumbles easily.
5. Reapply NMD 80® without rinsing between applications to melt the remaining mortar residue and extend dwell time. Once there is no foaming, the surface is ready to be rinsed.
6. With NMD 80®, the longer it stays wet on the wall, the cleaner the end result. This will also reduce the amount of rinsing required. After reapplication, scraping can be done further down the wall.

EaCo Chem

NMD 80®
NEW MASONRY DETERGENT

FOR PROFESSIONAL USE ONLY

PRODUCT DATA SHEET

7. Begin rinsing from top down. Use long even strokes that overlap each other.

Caution: Do not allow the product to dry on surface.

Rinsing

Proper rinsing techniques determine the final look and quality of the job. Generalized rules of rinsing would include:

1. Low-pressure rinse. The EC-Jet can be used as long as the ball valve to NMD 80® has been turned to the off position.
2. If using a pressure washer to rinse, use a 40-degree nozzle to reduce the potential for surface damage. Stay at least 8"-12" from the wall to avoid potential damage to the mortar joints. **Do not use a zero-degree nozzle.**
3. Craftsmanship determines the appropriate pressure for rinsing. A thorough rinse job is recommended; however, our chemistry never requires flooding a wall. Pressures that mark or damage the surface should be avoided. When in doubt, follow the manufacturer's recommended P.S.I. for the substrate you are working on.
4. Always use overlapping horizontal passes to achieve a uniform appearance

Note: Sensitive surfaces, i.e. sand faced brick, concrete brick, synthetic masonry and surface-dyed substrates, need to be rinsed at low pressures. Use the EC-Jet with the ball valve turned to the off position for rinsing or a garden hose with nozzle (The rinse pressure should be about 50 P.S.I.).

Spill or Leak Procedures

Check with state, local, or federal regulation for waste disposal methods in the area. Wear proper protective equipment while doing clean-up. For large spills, dike and contain for intended use. For residual, use a chemical absorbent material and place in an approved container for disposal. For small spills, use a chemical absorbent material and place in an approved container for disposal.

Container Handling/Storage

Store product in a cool, dry place away from caustic-based materials. Vent the bung prior to opening completely. Keep container tightly closed when not in use. Wash thoroughly after handling. For best results, liquid should be 32° F or higher prior to use.

Instructions in Case of Contact or Exposure

Eyes: Flood with water for 15 minutes and seek medical attention.
Skin: Wash off with soap and water. Use a good emollient. If irritation develops, seek medical attention.
Ingestion: Drink lots of water to dilute. Do not induce vomiting. Seek immediate medical attention.
Inhalation: Move to fresh air. Call physician and seek medical attention if irritation develops.

Notice

This product has been classified in accordance with the hazard criteria of the CFR.

Disclaimer

The information herein is given in good faith, but no warranty, either expressed or implied, is made. Final determination of the suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot be sure or guarantee these are the only hazards which exist.

Customer Service

Factory personnel are available for assistance Monday through Friday from 8am to 5pm EST at (724) 656-1055. Questions can also be sent to info@eacochem.com. A reply can be expected by the following business day. FaceTime and Call from the Wall is available while on jobsite.