CORINTHIAN
CAST STONE, INC

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REPAIRING AND RESTORING INDIANA LIMESTONE

Indiana Limestone, known for its natural beauty and durability, may require repair due to handling damage, installation mishaps, or long-term environmental exposure. Unlike synthetic materials, repairs to natural stone must respect its inherent characteristics. Corinthian Restoration Mortar (CRM) is specifically formulated for limestone, offering a reliable solution for restoring chips, cracks, and structural defects while preserving the stone's authenticity and integrity.

PRINCIPLES OF LIMESTONE REPAIR

As a natural material, Indiana Limestone repairs must prioritize compatibility with the stone's composition. Corinthian Restoration Mortar (CRM) has been developed to address both aesthetic and structural concerns, ensuring a seamless match with the natural stone's texture and color.

When to Repair:

- **Small Chips and Cracks:** Superficial damage affecting only the surface.
- **Structural Defects:** Larger spalls, cracks, or fractures requiring enhanced strength and bonding.
- **Profiles and Details:** Intricate elements such as carvings or copings requiring precise restoration.

When Replacement is Necessary:

- Damage that compromises the stone's load-bearing capacity or overall stability.
- Severe spalling or erosion that exceeds the practicality of repairs.

RESTORATION METHODS

Repairs Using Corinthian Restoration Mortar (CRM)

CRM is a polymer-modified mortar specifically designed to restore Indiana Limestone with precision and durability.

Appropriate Use Cases:

- Chips or cracks up to 2 inches deep in a single lift.
- Intricate profiles, carvings, or decorative elements requiring sculpting.
- Structural repairs where enhanced bonding strength is essential.

Materials and Preparation:

1. **Materials:**
   - Corinthian Restoration Mortar (CRM).
   - Trowels, brushes, and sculpting tools for application and finishing.
2. **Preparation:**
   - Remove all loose and damaged material.
   - Clean the repair area thoroughly, ensuring no dust or contaminants remain.
   - Pre-wet the stone to reduce moisture absorption, but ensure no standing water.

Application Procedure:

1. **Mixing CRM:**
   - Combine 5 parts CRM powder to 1 part clean water by weight.
   - Use a low-speed drill (400-600 RPM) for thorough blending until a heavy, putty-like consistency is achieved.
2. **Scrub Coat:**
   - Apply a thin bonding layer of CRM to the substrate for improved adhesion.
3. **Layered Application:**
   - For repairs deeper than 2 inches, apply CRM in multiple lifts, allowing each layer to partially cure before adding the next.
   - Shape and sculpt the final layer to match the original profile using tools and brushes.
4. **Curing:**
   - Cover the repaired area with a damp cloth or breathable plastic to maintain moisture during curing.
   - Protect the area from direct sunlight and precipitation for at least 48 hours.

Surface Repairs for Minor Chips and Imperfections

For minor damages, use finely crushed limestone or pre-mixed compatible fillers.

Materials and Preparation:

- Limestone filler (matching the stone's natural composition).
- Adhesive or binder for blending.

Application Procedure:

1. **Clean the Area:**
   - Remove loose particles and dust. Ensure the area is dry.
2. **Apply Filler:**
   - Mix the filler to a paste consistency.
   - Slightly overfill the chip and shape it to blend seamlessly with the surrounding stone.
3. **Curing:**
   - Allow the repair to cure naturally.

ENVIRONMENTAL CONSIDERATIONS

Cold Weather (Below 60°F):
- Use warm water (not exceeding 160°F) for mixing.
- Maintain ambient temperatures above 40°F during application and curing.

Hot Weather (Above 80°F):
- Shade the repair area and cool the stone with water prior to application.
- Protect from rapid drying by using breathable covers.

INSPECTION AND BLENDING

- Repairs with CRM are designed to blend seamlessly with Indiana Limestone. However, slight color variation may initially occur and will blend naturally over 3-12 months with weathering and UV exposure.
- Evaluate repairs from a distance of 20 feet under normal lighting conditions. Imperfections not visible at this range are typically acceptable.

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SELECTING THE RIGHT METHOD

Criteria	Corinthian Restoration Mortar (CRM)	Limestone Filler
Damage Depth	Up to 2 inches or more in lifts	Less than ¼ inch
Profiles or Intricacy	Detailed sculpting and carvings	Smooth planar surfaces
Structural Repairs	Enhanced bonding strength	Not recommended

CORINTHIAN NATURAL STONE SUPPORT

Corinthian Natural Stone adheres to ASTM C568 standards and Indiana Limestone Institute guidelines. Our CRM solution ensures high-quality, long-lasting repairs for Indiana Limestone.

For additional assistance with product specification, installation practices, or maintenance strategies, contact our technical services department at **631-920-2340 or info@corinthian-usa.com.**

REFERENCES

- ASTM C568, ASTM C1601
- Indiana Limestone Handbook
- TMS 402/602 Masonry Standards
- Corinthian Restoration Mortar Technical Data

This Technical Bulletin addresses generally accepted practices for Indiana Limestone and is intended as a guide only. Specific project requirements should be determined by design professionals based on actual conditions and intended use.
For further information, visit www.corinthian-usa.com.

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