**DIVISION 03 – CONCRETE**

**SECTION ( 03 4100 )**

**PRECAST STRUCTURAL CONCRETE**

**PART 1 – GENERAL**

* 1. SUMMARY
     + 1. Includes, but not limited to:
          1. Material and methods for removal of mortar and/or jobsite debris from Precast Structural Concrete surface.
     1. Related Sections:
        + 1. Section 03 3000: ‘Cast-in-Place Concrete’
          2. Section 03 4500: ‘Precast Architectural Concrete’
          3. Section 03 4713: ‘Tilt-Up Concrete’
          4. Section 04 2113: ‘Brick Masonry’
          5. Section 04 4200: ‘Exterior Stone Cladding’
          6. Section 04 4313.13: ‘Anchored Stone Masonry Veneer’
          7. Section 04 4313.16: ‘Adhered Stone Masonry Veneer’
          8. Section 04 7200: ‘Cast Stone Masonry’
  2. REFERENCES

1. Definitions:
2. Cold Weather, for cleaning purposes, refers to the surface temperature at or below 40° F (4° C) and is expected to remain below for a period of (7) days after cleaning.
3. Hot Weather, for cleaning purposes, refers to the surface temperature at or above 100° F (38° C).
4. Low Pressure Spray: Under 100 P.S.I. (Pounds per Square Inch)
5. High Pressure Spray: Above 800 P.S.I. (Pounds per Square Inch)
6. Reference Standards:
   1. ADMINISTRATIVE REQUIREMENTS
7. Pre-testing: testing of cleaning material on all applicable substrates should be conducted prior to full scale cleaning.
   1. SUBMITTALS
8. Manufacturers Documentation
9. Product Data and MSDS for each product submitted;
10. Supporting information, i.e. literature as requested.
    1. QUALITY ASSURANCE
11. Mockup Panel
    1. Clean mockup panel using the chemical manufacturers’ recommended cleaning method.
    2. Allow mockup panel to completely dry prior to evaluating cleaning results.
    3. Do not proceed with full scale cleaning until Architect has accepted the cleaning results.
    4. DELIVERY, HANDLING AND STORAGE
12. Storage and Handling Requirements
13. Chemicals may be stored in cold weather temperatures, but should be brought indoors prior to usage.
14. Chemicals should be handled according to manufacturers’ safety procedures.

**PART 2 – PRODUCTS**

* 1. MATERIALS

1. Cleaning Materials
2. Acid-Based Cleaner: Manufacturers’ standard acidic new masonry cleaner composed of buffered hydrochloric acid
   1. NMD 80 manufactured by EaCo Chem, Inc.; New Castle, PA [www.eacochem.com](http://www.eacochem.com)
3. Non hydrochloric acid based Based Cleaner: Manufacturers’ standard non hydrochloric acid based new masonry cleaner composed of organic salts
   1. SOS 50 manufactured by EaCo Chem, Inc.; New Castle, PA [www.eacochem.com](http://www.eacochem.com)

2.02 MANUFACTURER

1. New masonry cleaner manufacturer contact information: EaCo Chem, Inc.; 765 Commerce Ace, New Castle, PA 16101 – Phone: 724-656-1055, Fax: 724-656-0757 – [info@eacochem.com](mailto:info@eacochem.com) – [www.eacochem.com](http://www.eacochem.com)

**PART 3 – EXECUTION**

* 1. CONCRETE CLEANING SPECIALIST
     1. Concrete Cleaning Specialist Firms: Subject to compliance with requirements, **[provide concrete cleaning specialist firms requirements]**
  2. PROTECTION
  3. Protect adjacent and surrounding surfaces not intended to be cleaned from exposure to the cleaning chemical to prevent damage.
  4. Prevent cleaning chemical from coming into contact with people, motor vehicles, landscaping and other building materials that could be harmed by such contact.
  5. Follow new masonry cleaner manufacturers’ recommendations for personal protection.
  6. APPLICATION

1. Dilute cleaning material as directed by manufacturers’ recommendations per Product Data sheet.
2. For mortar removal, allow mortar to cure for a period of 7 days before beginning the cleaning process can begin.
3. Beginning from the top of the wall, lightly pre-wet or pre-cool the wall;
4. Begin applying cleaning material from the top to bottom, using even, overlapping passes to ensure full coverage of chemical on the surface;
   1. Apply cleaning material to the entire drop or section of wall that can be cleaned without allowing the chemical to dry on the surface.
5. After the first application of cleaning material, scrape the large chunks with a long handled scraper from the first 8 feet of wall;
   1. Use a scraper in accordance to masonry manufacturers’ requirements.
6. Check smears and tags to see if they crumble easily;
7. If needed, repeat application to melt remaining residue and extend dwell time;
8. After re-application, scraping can be done further down the wall;
9. Once smears and tags crumble easily, begin rinsing from top down. A thorough rinse is necessary to avoid leaving any cleaning material on the surface or in the masonry unit.
   1. Use long even strokes that overlap each other.
   2. Rinse pressure is determined by the masonry manufacturers’ requirements. Color sensitive surfaces should always be rinsed with low pressure.
10. For jobsite debris removal, follow cleaning material manufacturers’ dilutions and instructions per “Tilt-Up Concrete” section of the Product Data sheet.
    1. FINAL CLEANING
11. Clean site of all unused cleaning material, residues, rinse water, wastes and protection material in accordance with federal and local environmental regulations.

**END OF SECTION**