SECTION 03 47 13.13 – TILT-UP CONCRETE BOND BREAKERS

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*This document is intended as a stand-alone specification in CSI 3-Part format ("MasterFormat") or as a resource for supplementing a broader-scope specification for traffic coatings.*

*Specifier should* *[enable](file:///G:\\Chemical%20Information\\Market%20Development\\Specifications\\DSC%20Website%20Resource%20Specs\\DSC%20Guide%20Specifications\\07_18_23%20-%20Epoxy%20Traffic%20Coatings%20-%20Type%20III%20DOT.docx" \l "Hidden_On" \o "File>Options>Display>Always Show On Screen (check \"Hidden Text\")) "Hidden Text" feature while editing and* *[disable](file:///G:\\Chemical%20Information\\Market%20Development\\Specifications\\DSC%20Website%20Resource%20Specs\\DSC%20Guide%20Specifications\\07_18_23%20-%20Epoxy%20Traffic%20Coatings%20-%20Type%20III%20DOT.docx" \l "Hidden_Off" \o "File>Options>Display>Printing Options (uncheck \"Hidden Text\")) feature before printing. Hidden text displays in* blue *and gives guidance to the specifier ("Editor's Notes").*

*Bold text in brackets* [**sample**] *indicates a choice to be made; refer to editor's notes for guidance.*

*Metric units are in red font and in parentheses* (sample)*; these may be retained or deleted.*

*For specification questions, email:* [Specifications@DaytonSuperior.com](mailto:Specifications@DaytonSuperior.com)

*For technical assistance, contact Dayton Superior Technical Services: (866) 329-8724*

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Refer to the Technical Data Sheets and brochures (double-click icons below to open) for more information.

   

1. GENERAL
   * + 1. SUMMARY

Edit below to include primary scope of work under this Section

* + - * 1. Section Includes:

Chemical bond breakers for use in tilt-up construction.

* + - 1. RELATED SECTIONS

Edit Paragraph below to include other Sections that contain work related to work of this Section. Delete reference or revise number/title to reflect Sections actually included in Project.

* + - * 1. The following Section(s) contain work related to the work of this Section:

Section 03 30 00 – Cast-in-Place Concrete: General requirements for mixing, placing, and finishing cast-in-place concrete floor slabs.

Section 03 35 17 – Densified Concrete Finishing: Application of liquid densifier in conjunction with bond breaker.

See editing instructions in Part 2 for information regarding using bond breaker material in lieu of curing compounds

Section 03 39 00 – Concrete Curing: Curing of concrete and removal procedures prior to applying bond breaker materials.

Section 03 47 13 – Tilt-Up Concrete: Requirements for constructing and erecting site-cast tilt-up concrete panels.

* + - 1. REFERENCES
         1. American Concrete Institute (ACI)
         2. Tilt-up Concrete Association (TCA)
      2. PREINSTALLATION MEETINGS
         1. Preinstallation Conference: Conduct conference at [**Project site**] <**Insert location**>.

Edit list of conference participants, if necessary.

* + - * 1. Review scope of Work expected. Require representatives of each entity directly concerned with concrete slab work to attend, including the following:

Contractor’s superintendent.

Installer

Tilt-up contractor

Material manufacturer's representative.

Architect's and/or Owner's representative (at their option).

Edit list of conference topics, if necessary.

* + - * 1. Review the following, at a minimum:

Schedule

Extent of Work.

Materials to be applied.

Procedures to be used for hot weather application.

Material storage and staging.

Cleanup and disposal of waste materials.

* + - 1. ACTION SUBMITTALS
         1. General: Submit the following for approval. Do not proceed with work involving any action submittal until approval is obtained.
         2. Product Data: Technical data sheets for each product used. Include material physical characteristics, storage and application instructions, precautions and safety data, and cleanup.
      2. INFORMATIONAL SUBMITTALS
         1. General: Submit the following to the Owner for the Owner's information and records. If acceptable, and unless otherwise indicated, Informational Submittals will not be acted upon or returned.
         2. Safety Data Sheets (SDS) for all products used.

Coordinate "Qualification Data" Paragraph below with qualification requirements in Section 014000 "Quality Requirements" and as may be supplemented in "Quality Assurance" Article.

* + - * 1. Qualification Data: For Installer.

Include LEED submittals Paragraph only for LEED projects; coordinate with requirements selected in Part 2 for VOC limits.

* + - * 1. LEED Submittals:

Product Data for EQ credit X.X: For products of this Section containing volatile organic compounds (VOC), including liquid materials with zero VOC content.

* + - 1. QUALITY ASSURANCE
         1. Manufacturer Qualifications: Company regularly engaged in the manufacturing of the products specified in this section, with at least 10 years' successful history manufacturing material specified herein.
         2. Installer Qualifications: Installer who is approved by, or acceptable to manufacturer for application of products required for this Project, with at least five (5) years' experience in application of product.
      2. DELIVERY, STORAGE, AND HANDLING
         1. Deliver products in original factory packaging, bearing identification of product, manufacturer, batch number, and expiration date.

Furnish Safety Data Sheets to the project superintendent for each product.

* + - * 1. Store products in a location protected from damage, construction activity, precipitation and direct sunlight, in strict accordance with the manufacturer's recommendations.

Do not allow liquid products to freeze.

Use products within published shelf life.

* + - * 1. If necessary, condition bond breaker materials to approximately in accordance with the manufacturer's recommendations.
        2. Handle all products with appropriate precautions and care as stated on the Safety Data Sheet.
      1. PROJECT CONDITIONS
         1. Do not use products under conditions of precipitation or freezing weather. Use appropriate measures for protection to ensure proper drying conditions in accordance with manufacturer's recommendations if application during inclement weather occurs.
         2. Protect adjacent work from contamination due to mixing, handling, and application of Bond breaker materials.

1. PRODUCTS
   * + 1. MANUFACTURERS
          1. Acceptable Manufacturers:

Dayton Superior Corporation; 1125 Byers Road, Miamisburg, Ohio 45342; Tel: (877) 266-7732; Website: www.DaytonSuperior.com

Select only one of the following two Paragraphs. If first Paragraph is retained, select appropriate Division 01 Section.

* + - * 1. Requests for substitutions will be considered in accordance with provisions of Section [**01 25 00**] [**01 60 00**].
        2. Substitutions: Not permitted.

Bond breakers are classified as water-based or solvent-based. Water-based materials tend to have very low VOC content and are appropriate for LEED projects and projects located in VOC-restricted jurisdictions.

Two of Dayton Superior’s solvent-based products (Sure Lift with Dye J6D and Super Maxi Tilt) can only be used where EPA VOC limits are in effect.

Dayton Superior’s low VOC solvent-based bond breaker, Sure Lift J6LVOC, has a VOC content of <350 g/L and can be used in all jurisdictions (except when used as a curing compound in projects governed by SCAQMD limits).

Select from the products below or retain more than one.

* + - 1. MATERIALS
         1. Water-based reactive and membrane-forming low VOC bond breaker, unpigmented:

Product: Dayton Superior "Sure Lift™ J6WB”:

Dry Time: Approximately 2 hours at 70 degrees F (21 degrees C); ambient conditions and application thickness will affect dry time.

VOC Content: < 100 g/L

* + - * 1. Water-based reactive and membrane-forming low VOC bond breaker, pigmented with a fugitive dye:

Product: Dayton Superior "Maxi Tilt™ with Dye”:

Dry Time: Approximately 2 hours at 70 degrees F (21 degrees C); ambient conditions and application thickness will affect dry time.

VOC Content: < 100 g/L

* + - * 1. Solvent-based reactive and membrane-forming bond breaker, pigmented with a fugitive dye:

Product: Dayton Superior "Sure Lift™ with Dye J6D”:

Dry Time: Approximately 2 hours at 70 degrees F (21 degrees C); ambient conditions and application thickness will affect dry time.

* + - * 1. Solvent-based reactive and membrane-forming bond breaker, unpigmented:

Product: Dayton Superior "Super Maxi Tilt™”:

Dry Time: Approximately 2 hours at 70 degrees F (21 degrees C); ambient conditions and application thickness will affect dry time.

* + - * 1. Solvent-based reactive and membrane-forming bond breaker, low VOC, unpigmented:

Product: Dayton Superior "Sure Lift™ J6 LVOC”:

Dry Time: Approximately 2 hours at 70 degrees F (21 degrees C); ambient conditions and application thickness will affect dry time.

VOC Content: <350 g/L

Slab curing must be coordinated with the bond breaker material to be used. If the bond breaker applicator can choose either water-based or solvent-based bond breaker, the choice must be coordinated with the curing material type for compatibility. Dissipating cures will have to be removed if they have begun dissipating prior to bond breaker application.

Select one of the two paragraphs below.

* + - * 1. Curing Material: Per requirements of Section [**03 30 00**] [**03 39 00**].

The bond breakers in this Section may be used as a curing material, complying with ASTM C 309, ensuring compatibility. Application rate for the cure coat must be greatly increased.

* + - * 1. Curing Material: Same material as bond breaker.

1. EXECUTION
   * + 1. EXAMINATION
          1. Inspect all areas involved in work to establish extent of work, access, and need for protection of surrounding construction.
          2. Protect all surroundings from Bond breaker overspray.
       2. PREPARATION
          1. Inspect surfaces to receive bond breaker; ensure that substrate is clean, sound, [**properly cured,**] free of standing water, coatings, foreign particles, oil, dust, grease, or laitance, that will adversely affect bond breaker performance.
          2. Remove loose material by hand or mechanically, in accordance with standard practice.
          3. Ensure that air, material, and surface temperature is at least 40 degrees F (5 degrees C) and rising prior to beginning application.
       3. SLAB CURING

Refer to editor’s notes in Part two for a discussion of using bond breaker as a cure coat. Select one of the 3 Paragraphs below, as appropriate to the project.

* + - * 1. Properly cure slab per ACI recommendations, using a compatible curing compound, curing & sealing compound, or by wet cure methods [**,in accordance with Section 03 39 00**].
        2. Ensure that slab has been properly cured with a compatible curing material or other suitable method.
        3. Apply first coat of bond breaker to slab to act as a curing compound.

Apply bond breaker immediately after finishing, after all surface water is gone.

Apply bond breaker at rate prescribed by manufacturer to ensure compliance with ASTM C 309 moisture loss limits.

* + - 1. APPLICATION
         1. General: Follow all manufacturer's recommendations and written instructions when applying bond breaker.

Ensure slab has a smooth, tight steel troweled finish.

Do not apply in weather conditions detrimental to proper application and drying.

* + - * 1. Mixing Procedure:

Water-based bond breakers require thorough mixing prior to use and re-mixing if left overnight.

Use only the integral mixing apparatus provided on each drum of material.

Mix continuously for a minimum of 3 minutes.

Solvent-based bond breakers do not require mixing, but mixing may be done occasionally, if desired.

* + - * 1. Application:

Apply bond breaker using manufacturer’s recommended spraying equipment.

Ensure proper pressure and spray pattern.

Apply each coat at recommended spreading rate; spreading rate varies per coat.

Apply successive coats at right angle to previous coat.

* + - 1. FIELD QUALITY CONTROL
         1. Bond Breaker Field Test:

Visual Inspection: Visually inspect entire surface of bond breaker application areas. Ensure uniform color and sheen.

Bond breaker should have a soap-like feel to the touch.

Water Test: Sprinkle water over surface of bond breaker application areas in multiple locations; water should visibly bead, without soaking into the slab surface.

* + - * 1. Apply additional material to areas found to be inadequate.
      1. CLEANING
         1. Remove all debris and excess materials from the job site and dispose of in accordance with all applicable regulations for waste disposal.

END OF SECTION 03 47 13.13