

# ARCHITECTURAL CONCRETE FORMLINERS MASTER SPECIFICATION

## SUGGESTED MASTER SPECIFICATION SECTION 03 11 16.13 ARCHITECTURAL CONCRETE FORMLINERS

### PART 1 GENERAL

#### 1.01 SECTION INCLUDES:

- A. Provision of rigid plastic formliners for texturing architectural concrete.
- B. Provision of formliner accessories including, but not limited to, fasteners, sealants, rustication and backup strips, form release agents, and sealers.

#### 1.02 RELATED SECTIONS

- A. Section 03100 - Concrete Formwork
- B. Section 03120 - Architectural Cast-In-Place Concrete Formwork
- C. Section 03330 - Architectural Concrete
- D. Section 03350 - Concrete Finishes
- E. Section 03400 - Precast Concrete
- F. Section 03450 - Architectural Precast Concrete - Plant Cast [03460 Site Cast]
- G. Section 03470 - Tilt-Up Concrete

#### 1.03 REFERENCES

- A. American Concrete Institute (ACI):
  - 1. ACI 117 Specifications for Tolerances for Concrete Construction and Materials and Commentary
  - 2. ACI 301 CH. 6 Specifications for Structural Concrete.
  - 3. ACI 303R Guide to Cast-in-Place Architectural Concrete Practice.
  - 4. ACI 309 CH. 7 Guide for Consolidation of Concrete.
  - 5. ACI 347 CH. 5 Guide to Formwork for Concrete

#### 1.04 SUBMITTALS

- A. Manufacturer's installation instructions and Product Data which indicates compliance with specifications.
- B. Shop Drawings indicating formliner layout and termination details. Indicate backup, rustication, reveal, and chamfer strip locations. Include jointing, form tie location and pattern of placement.
- C. Architect/Engineer's review for aesthetic criteria. Contractor responsible for design of formwork and back-up of formliner for structural stability and sufficiency.
- D. Samples 12 inch by 12 inch of each pattern indicated.

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- E. Compliance Certification by form release agent manufacturer for local regulations controlling VOC's.

## 1.05 QUALITY ASSURANCE

- A. Provide full scale mockup using actual job specific materials, methods, and workmanship. These include concrete mix [cement type, aggregate gradation, slump, water/cement ratios, plasticizers and additives], forming system [ties, formliner, and formwork], form release agents, placement rate, form pressures, joint sealing, vibrating and stripping practices. In addition, demonstrate patching and repair procedures for spalled concrete, and voids caused by honeycombing or bugholes. Incorporate formwork accessories and minimum one vertical and one horizontal formliner joint.
- B. Accepted mockup will be standard by which remaining work will be evaluated for technical and aesthetic merit. Accepted mockup is a prerequisite prior to use of formliner. Submit variations from mockup materials or techniques for approval prior to use.

## 1.06 DELIVERY, STORAGE, AND HANDLING

- A. Cover formliners to protect from oil, dirt, and UV exposure.
- B. Handle rigid formliner panels with care at temperatures below 25°F.

## PART 2 PART

### 2.01 MANUFACTURER

- A. Sika, St. Louis, MO. 1-800-325-9504: Pattern Number [     ].

### 2.02 FORMLINER MATERIALS

- A. Sika UNI-CAST®, MULTI-CAST®, or DURA-CAST® thermoformed rigid polymer alloy sheets.
- B. Formliners for Textured Finish Concrete: Provide special forming materials to produce form surfaces with face design, texture, arrangement, and configuration as shown on drawings.
- C. Formliners to accommodate form pressures to a maximum 1000 lb/ft<sup>2</sup>. Comply with manufacturer's recommendations for support of large or deep patterns which may deform under pressure.

### 2.03 FORMLINER ACCESSORIES

- A. Provide Sika Greenstreak Form Release 8000 or equal, verified to be compatible with the formliner material.
- B. Sika Chamfer[Radius][Triangle]continuous PVC Strip w/[1/2],[3/4],[1],[1 1/2]inch leg

## PART 3 EXECUTION

### 3.01 FORMLINER PREPARATION

- A. Before placing concrete, verify lines and levels of formwork and formliner patterns are within allowable tolerances.
- B. On multiple-use grades, clean formliner before each use. Replace damaged formliner whose continued use or repair would negatively impact the aesthetics of the concrete finish.

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- C. Apply Sika Greenstreak Form Release 8000 at rate recommended by manufacturer. Attempt to schedule concrete placement soon after application of form release agent to avoid precipitation, dust, and debris. Protect reinforcing steel from exposure to release agents.

## 3.02 FORMLINER INSTALLATION

- A. Seal formliner joints, rustication/chamfer joints, and tie holes to prevent cement paste from bleeding.
- B. Provide solid backing at formliner joints where unsupported by formwork to prevent deflection.
- C. Construct formliner and chamfers to sizes, shapes, lines and dimensions shown.
- D. Provide openings, offsets, keyways, recesses, chamfers, blocking, and screeds as required to achieve architectural concrete textured finish.
- E. Drill or pierce formliner to accommodate form ties.
- F. Fasten formliner to formwork 12" to 24" on center. Increase spacing as necessary to accommodate form stripping pressures without damaging formliner intended for multiple use.
- G. Install backup strips as required to prevent deflection of the formliner due to form pressures.

## 3.03 CONCRETE PLACEMENT

- A. Form pressures not to exceed 1000 psf.
- B. Keep concrete lifts less than 24 inches. Thoroughly vibrate concrete to achieve good consolidation, and eliminate entrapped air thereby minimizing voids. Internally vibrate through to previous lift to avoid lift lines. Avoid vibrator contact with the formliner.
- C. Concrete temperatures in excess of 140°F will adversely affect the material properties of the formliners. Sika does not recommend the use of formliners in these applications.

## 3.04 FORMLINER ACCESSORY INSTALLATION

- A. When required, create reveal lines by fastening Sika Rustication Strips to formwork within tolerances indicated by ACI.
- B. Tightly form corners indicated to be chamfered with Sika [rounded][triangular] PVC chamfer. Chamfered corners shall be smooth, solid, unbroken, continuous lines.

**END OF SECTION**

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