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Structural Engineering, Truss Engineering, Third Party Inspection, Forensic Study, Project Management
Residential Design and BIM Modeling for Homebuilders

Pro-Crete Materials Corporation

INSTALLATION INSTRUCTIONS

Version 1.0

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PRECAST AND PRESTRESSED LINTELS
(8" AND 12" WIDE)

In order for proper installation of precast lintels, Monta Consulting & Design, has prepared this installation instructions to be used in conjunction with quality control methods of the contractor and good construction practices.

Preparation

1. All reinforcements shall be cleaned by removing mud, oil, or other materials that will adversely affect or reduce bond at the time mortar or grout is placed. Reinforcement with rust, mill scale, or a combination of both will be accepted as being satisfactory without cleaning or brushing provided the dimensions and weights, including heights of deformations, of a cleaned sample are not less than required by the ASTM specification covering this reinforcement in this Specification.

2. Prior to placing masonry, remove laitance, loose aggregate, and anything else that would prevent mortar from bonding to the lintel.

3. Debris – Construct grout spaces free of mortar dropping, debris, loose aggregates, and any material deleterious to masonry grout.

Lintel / masonry erection

1. Placing lintel – Length of bearing of lintels on their support shall be a minimum of 4 inches for filled lintels and 6 ½ inches for unfilled lintels in the direction of span. Provide a temporary support for lintels that are greater than 14' – 0"; the temporary support shall not be removed until 2 days after the grout placement.

2. Placing mortar and units (for composite lintels only)

   - Bed and head joints – Unless otherwise required, construct 3/8 inches thick bed and head joints. Construct joints that also conform to the following:

   a) Unless otherwise required, tool joint with a round jointer when the mortar is thumbprint hard.
   b) Remove masonry protrusions extending ½ inches or more into cells or cavities to be grouted.

   - Place hollow units so:

   a) Face shells of bed joints are fully mortared.
   b) Head joints are mortared, a minimum distance from each face equal to the face shell thickness of the unit.
   c) Vertical cells to be grouted are aligned and unobstructed openings for grout are provided in accordance with the Project Drawings.

- Place clean units while the mortar is soft and plastic. Remove and relay in fresh mortar any unit disturbed to the extent that initial bond is broken after initial positioning.

Reinforcement installation

a) Support and fasten reinforcement together to prevent displacement beyond the tolerances allowed by construction loads or by placement of grout or mortar.
b) Completely embed reinforcing bars in grout in accordance with TMS 402-16.
c) Maintain clear distance between reinforcing bars and any face of masonry unit or formed surface, but not less than ¼ inches for fine grout or ½ inches for coarse grout.
d) Splice only where indicated on the Project Drawings, unless otherwise acceptable.
e) Unless accepted by the Architect/ Engineer, do not bend reinforcement after it is embedded in grout or mortar.
f) Place joint reinforcement so that longitudinal wires are embedded in mortar with a minimum cover of ½ inches when not exposed to weather or earth and 5/8 inches when exposed to weather or earth.

Grout placement

a) Placing time – Place grout within 1½ hours from introducing water in the mixture and prior to initial set.
b) Confinement – Confine grout to the areas indicated on the Project Drawings. Use material to confine grout that permits bond between masonry units and mortar.
c) Grout pour height – Do not exceed the maximum grout pour height given in the TMS 602-16 Section 3.5C.
d) Grout lift height – Place grout in lifts not exceeding grout lift height given in the TMS 602-16 Section 3.5D.
e) Consolidation – Consolidate grout at the time of placement.
    - Consolidate grout pours 12 inches or less in height by mechanical vibration or by puddling.
    - Consolidate pours exceeding 12 inches in height by mechanical vibration and reconsolidate by mechanical vibration after initial water loss and settlement has occurred.

Field quality control

a) Verify masonry unit strength, f'm in accordance with the TMS402-16.
b) Sample and test grout as required by the TMS402-16 Articles 1.4B and 1.6.

Cleaning

Clean exposed masonry surfaces of all stains, efflorescence, mortar or grout droppings, and debris.

Limitations of use

a) Support on wood – Lintel shall not be support on wood girders or other form of wood construction.
b) Construction loads – Do not apply construction loads that exceed the safe superimposed load-carrying capacity of the masonry and temporary support, if used.

Impact resistance – Lintels apply to the design or construction of masonry for buildings, parts of buildings, or other structures, if the project is located in areas where the ultimate wind speed exceeds 160 mph, exposure B shall be filled solid with grout.