

### **PART I - GENERAL**

#### **1.01 DESCRIPTION AND SCOPE**

- A. Provide all labor, materials and equipment necessary to install The LOXON Panel System
- B. Related Work Specified Elsewhere
  - 1. Concrete 03300.
  - 2. Unit Masonry 04200.
  - 3. Sheathing 06100.
  - 4. Light Gauge Cold-Formed Steel Framing 05400.
  - 5. Sealants 07900.
- C. Description of The LOXON Panel System
  - 1. A system for aligning and locking thin brick to a substrate.
    - a. The LOXON Panel is installed to a substrate to facilitate the application of thin brick.
    - b. The LOXON Panel can also be attached to Prefabricated Metal Stud Curtain Wall Systems. These wall systems are usually constructed off site at factory locations.
- D. Definitions
  - 1. UNIVERSAL Thin Brick Systems Inc (Hereafter referred to as UNIVERSAL)  
Manufacturer of The LOXON Panel System.
  - 2. Trained Applicator/Contractor  
A firm or person that has been trained in the application of The LOXON System.
  - 3. Panel Erector  
The contractor that installs the panelized Curtain Wall System.
  - 4. Substrate  
The material to which The LOXON System is affixed.
  - 5. Sheathing  
A substrate in sheet form.
  - 6. Brick-Ties  
The LOXON metal configurations that lock the mortar to the panel, align the brick horizontally and support each brick.
  - 7. Adhesive Lock  
The configurations in the metal portion of The LOXON Panel which lock the adhesive to the panel.
  - 8. Expansion Joint  
A designed interruption in the continuity of a material or assembly which will experience movement.
  - 9. Sealant System  
Consists of the specified sealant, backer rod, and accessories manufactured and installed by others.

#### **1.02 QUALITY ASSURANCE**

- A. Qualifications
  - 1. Systems Manufacturer
    - a. Shall have manufactured a thin brick panel system for over 5 years.
    - b. Shall have completed at least 20 projects.
  - 2. Trained Applicator/Contractor
    - a. Trained by UNIVERSAL personnel in the installation of The LOXON System.
    - b. Shall be experienced and competent in the installation of brick type materials.
  - 3. Curtain Wall Fabricator
    - a. Experienced and competent in the fabrication of Curtain Wall Panels.
    - b. Shall be a trained LOXON applicator/contractor
  - 4. Curtain Wall Panel Erector
    - a. Shall be the Panel Fabricator, or approved by and under the direct supervision of the Panel Fabricator.
    - b. Shall be experienced and competent in the installation of Curtain Walls Systems with thin brick panels attached and shall employ the proper procedures to install such panels.
  - 5. Sealant contractor
    - a. Shall be experienced and competent in the installation of high performance sealants.

### B. Design and Detailing

#### 1. General

- a. The LOXON Panel System shall be entirely sealed to prevent any weather infiltration.
- b. The use and thickness of any insulation board shall be in accordance with the applicable building codes and with the approval of UNIVERSAL.
- c. Flat surfaces will not be allowed.
- d. Window jambs, headers and sills.
  - (1) Corner brick may be used to return to jambs
  - (2) Flashing shall be used at window headers.
  - (3) Sills may be of brick, metal, stone or other approved material and extend minimum 1.5 inches past the face of the wall.

#### 2. Substrate Standards

- a. Substrate shall be engineered to withstand all applicable conditions including live and dead weight loads and positive and negative wind loads.
- b. The maximum deflection under positive or negative full design loads of the substrate system shall not exceed 1/360th of the span.

#### 3. Substrate Materials

- a. The following are approved LOXON Panel System substrates.
  - (1) Sound concrete, masonry or brick.
  - (2) Sound stucco.
  - (3) Fiber re-enforced cement board.
  - (4) Sound exterior grade plywood or OSB board.
  - (5) Exterior Grade Gypsum Sheathing
  - (6) Glass Mat Gypsum Sheathing
- b. Substrates other than those listed above shall be approved by UNIVERSAL, in writing, prior to installation of The LOXON Panel.
- c. The Trained Applicator/Contractor shall verify that the proposed substrate is acceptable to the applicable authorities prior to installation of The LOXON Panel System.

#### 4. Light Gauge Steel Framing

- a. General.
  - (1) Section properties of members shall be derived in accordance with latest edition of the A.I.S.I. Cold-Formed-Steel-Design Manual.
  - (2) The structural properties of the steel framing shall be engineered using accepted engineering practices.
- b. Where the light gauge steel framing extends continuously past a floor line, the stud cavity flue should be continuously fire stopped at the floor line.
- c. All stud, track, bracing and bridging connections shall be welded.

#### 5. Expansion Joints

- a. Expansion joints shall be installed at the following locations.
  - (1) Where expansion joints occur in the substrate.
  - (2) Where building expansion joints occur.
  - (3) Where The LOXON Thin Brick System abuts other materials.
  - (4) Where significant structural movement occurs.
    - (a) Changes in roof line.
    - (b) Long continuous elevations.
    - (c) Changes in building shape and structural system.
    - (d) All inside corners.
- b. Expansion and contraction of adjacent materials shall be taken into account in the design of LOXON Panel System joints. Proper consideration shall be given to sealant properties, installation conditions, temperature range, coefficient of expansion of materials, joint width to depth ratio, and etc.

#### 6. Details

- a. The latest published details from UNIVERSAL shall be followed.
- b. Details other than those published by UNIVERSAL shall be approved in writing prior to installation of The LOXON Panel System.

- C. Dimensional Tolerance
  1. Substrates shall be flat within 1/8" (+ or -) within any 4 foot square area.
  2. Structural steel framing shall meet the requirements of the American Institute of Steel Construction.

### 1.03 SUBMITTALS

- A. Samples
  1. Field-Constructed Sample Wall.
    - a. Prior to installation of The LOXON Panel System, the Applicator selected for this project shall, if the Architect requires, erect a mock-up wall.
    - b. Locate mock-up on site in location as directed by Architect.
    - c. The mock-up shall demonstrate the purposed range of color, texture and workmanship to be expected in completed work.
    - d. Obtain Architect's acceptance of mock-up before start of work.
    - e. Retain and maintain mock-up during construction.
- B. Shop Drawings
  1. Drawings prepared by the Applicator/Contractor showing the wall layout, typical details, connections, expansion joints plus the installation sequence shall be submitted to the Architect upon request.
- C. Reports, Calculations and Certificates
  1. Copies of test reports by independent laboratories verifying the performance of The LOXON Panel System shall be submitted to the Architect upon request.
  2. The Trained Applicator/Contractor shall submit a copy of his current certificate of training by UNIVERSAL to the Architect prior to application of The LOXON Panel System.

### 1.04 DELIVERY, STORAGE AND HANDLING

- A. All materials supplied by UNIVERSAL shall be delivered to the location on original unopened pallets. Upon arrival, materials shall be inspected for damage and UNIVERSAL informed of any discrepancies. Deficient materials shall not be used.
- B. All materials supplied by UNIVERSAL shall be stored in a protected location and safeguarded from damage.
- C. All materials supplied by others such as substrates, framing, sealants, etc., shall be stored per manufacturers' instructions.

### 1.05 JOB CONDITIONS

- A. Existing Conditions
  1. The General Contractor shall provide access to electricity.
  2. The General Contractor shall provide access to potable water.
- B. Environmental Conditions
  1. The ambient air temperature shall be 36 degrees F or greater and shall remain so for at least 24 hours after the application of mortar.
- C. Protection
  1. Adjacent materials shall be protected from damage during installation.
  2. Flashing and sealants shall be installed immediately after completion of The LOXON system.
- D. Sequencing and Scheduling
  1. Installation of the LOXON materials shall be coordinated with the other construction trades.
  2. Sufficient manpower and equipment shall be employed to ensure a continuous operation satisfactory to the Architect.

### 1.06 ALTERNATIVES

- A. Systems to be considered equal to those specified herein :
  1. Shall be approved by the Architect, in writing, at least ten working days prior to the project bid date.
  2. Shall physically lock the mortar to the panel system.
  3. Shall physically lock the adhesive to the panel system.
  4. Shall have corner panels made expressly as part of the system.
  5. Shall offer a warranty equal to that of UNIVERSAL.

### 1.07 WARRANTY

- A. UNIVERSAL full 21 year material warranty is available upon request and shall be subject to the following terms and conditions.
  - 1. The LOXON system shall be applied in accordance with manufacturer's specifications.
  - 2. Any claim must be promptly submitted to the manufacturer in writing.

## PART II - PRODUCTS

### 2.01 - GENERAL

- A. All components of The LOXON Panel System shall be obtained from UNIVERSAL or their authorized distributor.
- B. No substitution or addition of other materials shall be permitted.

### 2.02 MATERIALS

- A. The LOXON Panel Metal
  - 1. Shall be manufactured from one of the following materials.
    - a. Minimum 0.008" thickness galvanized metal.
    - b. Minimum 0.12" thickness alumin.
    - c. Minimum G-60" thickness galvanized metal.
- B. Brick
  - 1. Kiln-fired 1/2" nominal thickness.
  - 2. UNIVERSAL THIN BRICK SYSTEMS INC
    - a. Minimum compression strength of 1000 PSI when tested in accordance with ASTM C-513.
    - b. Must pass the freeze thaw test described in ASTM C-666.
- C. Adhesive as approved by UNIVERSAL.
  - 1. A high-solid solvent based adhesive that remains flexible and unaffected by freeze-thaw cycles.
- D. Fastener as approved by UNIVERSAL.
  - 1. A corrosion resistant type specifically designed for the particular substrate where they are to be used.
- E. Mortar
  - 1. For proper workability, the mortar should be mixed to the consistency of a thick milkshake.
  - 2. Mixed to manufacturer's latest specifications when using bulk materials.
  - 3. A premixed mortar as approved by UNIVERSAL.
- F. Insulation Board
  - 1. Shall be produced by a manufacturer approved by UNIVERSAL.
  - 2. Shall meet current UNIVERSAL specifications.
  - 3. Maximum Flame spread and Smoke Development, when tested in accordance with ASTM E-84, shall not exceed 25 and 450 respectively.
  - 4. Maximum thickness used shall be no greater than 2" and meet local building code requirements.
- G. Water
  - 1. Shall be clean, potable and free of all foreign matter.
- H. Sheathing
  - 1. Plywood or OSB board shall be no less than 1/2" thick, minimum 4 ply APA Exposure or Exterior grade CD or better.
  - 2. APA spacing recommendations for edge and end joints must be followed.
- I. Moisture Barrier
  - 1. Tyvek, Tyvek Stucco wrap, Inca Therm, R-warp or other equivalent building wrap
  - 2. Felt paper
- J. Light Gauge Steel Framing
  - 1. Shall include stud, track, bridging and bracing.
  - 2. Shall be galvanized or painted with rust-resistant primer.
  - 3. Minimum thickness shall be 20 gauge and as determined by loads and handling methods.
- K. Sealant Systems
  - 1. The sizing of expansion joints, as well as selection of the sealant to be used, shall be the responsibility of the Architect and/or Engineer.
  - 2. Sealants must be compatible with The LOXON System components.
  - 3. Other Sealant Systems shall be jointly approved in writing by the Architect, UNIVERSAL and the Sealant Manufacturer prior to installation.
  - 4. Color shall be as selected by the Architect.

5. Joint design and surface preparation shall be based on sealant Manufacturer's recommendations and project conditions,

### **PART III - EXECUTION**

#### **3.01 INSPECTION**

- A. Examination of Substrate
  1. Prior to installation of The LOXON Panel System, the substrate shall be examined by the Applicator/Contractor.
    - a. All substrates shall be a type approved by UNIVERSAL.
    - b. All substrates shall be examined and comply with contract documents.
    - c. All substrates shall be examined for soundness, such as tightness of connections, crumbling or looseness of surface, projections, etc.
    - d. All substrates shall be examined for dimensional correctness.
  2. Architect and General Contractor shall be advised of all discrepancies. Work shall not proceed until unsatisfactory conditions are corrected.
- B. The LOXON Panel System
  1. General
    - a. Comply with current published instructions by UNIVERSAL for installation of The LOXON Panel System as applicable to each type of substrate indicated.
  2. Metal Panel
    - a. Shall be applied to the substrate surface in true level rows.
    - b. Shall align at all corners
  3. Panel attachment
    - a. Shall be achieved by installing manufacturers specified fasteners at a minimum rate of 1 per square foot or at least every 3 courses vertically and 16" (maximum) on center horizontally.
    - b. Fasteners shall penetrate substrate at least 1".
    - c. Adhesive
      - (1) Brick shall be attached to panel using manufacturer's approved adhesive.
      - (2) Brick shall be spaced to insure that head joints do not exceed 5/8" or fall below 1/4". The optimum head joint size is 3/8"
    - d. Mortar
      - (1) Apply to the joint areas using a mortar bag or pump with minimum # 5 metal tip. The joint shall meet UNIVERSALs FCB specification.
      - (2) Do not apply mortar to brick panel system when the ambient outdoor temperature is below 36 degrees Fahrenheit unless temporary protection and heat can be provided for a minimum of 24 hours after installation.
    - e. Cleaning
      - (1) Shall be performed with a masonry cleaning product approved by the brick manufacturer. Cleaning shall not begin until grouted joints have properly cured. (at least 24 hours)

#### **3.03 - FIELD QUALITY CONTROL**

- A. During construction, the job site shall be visited by UNIVERSAL or its authorized representative at the request of the architect.

#### **3.04 - CLEAN UP**

- A. All excess materials left over by the Applicator/Contractor and/or Panel Erector shall be removed from the job.
- B. The Panel Erector and/or the Applicator/Contractor shall clean adjacent materials and surfaces of all foreign materials resulting from their work.

### **RES Architectural Sales, Inc.**

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