

7800 E. Michigan Ave.  
 Kalamazoo, Michigan 49048  
 Phone: (800) 521-2546  
 Fax: (269) 381-3455  
 www.landscapeforms.com  
 specify@landscapeforms.com

**L I N E landscape panels  
 Product Guide Specification**

Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat*, *SectionFormat*, and *PageFormat*, as described in *The Project Resource Manual—CSI Manual of Practice, Fifth Edition*.

The section must be carefully reviewed and edited by the Architect to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all "Specifier Notes" after editing this section.

Section numbers are from *MasterFormat 2010 Edition*.

**SECTION 32 31 19 DECORATIVE METAL FENCES AND GATES**

Specifier Notes: This section covers Landscape Forms, Inc. "L I N E" landscape panels. Consult Landscape Forms, Inc. for assistance in editing this section for the specific application.

**PART 1 GENERAL**

**1.1 SECTION INCLUDES**

- A. Architectural panels.

**1.2 REFERENCES**

Specifier Notes: List standards referenced in this section, complete with designations and titles. Delete standards not included in the edited section. This article does not require compliance with standards, but is merely a listing of those used.

A. ASTM Testing Standards:

1. ASTM B 117 – Standard Practice for Operating Salt Spray (Fog) Apparatus.
2. ASTM D 522 – Standard Test Methods for Mandrel Bend Test of Attached Organic Coatings.
3. ASTM D 523 – Standard Test Method for Specular Gloss.
4. ASTM D 2247 – Standard Practice for Testing Water Resistance of Coatings in 100% Relative Humidity.
5. ASTM D 2794 – Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact).
6. ASTM D 3359 – Standard Test Methods for Measuring Adhesion by Tape Test.
7. ASTM D 3363 – Standard Test Method for Film Hardness by Pencil Test.
8. ASTM G 155 – Standard Practice for Operating Xenon Arc Light Apparatus for Exposure of Non-Metallic Materials.

B. ISO Testing Standards:

1. ISO 1520 – Paints and Varnishes – Cupping Test.
2. ISO 2815 – Paints and Varnishes – Buchholz Indentation Test.

### 1.3 **SUBMITTALS**

- A. **Product Data**: Submit manufacturer's product data, storage and handling requirements and recommendations, installation methods and available colors, styles, patterns and textures.
- B. **Shop Drawings**: Submit manufacturer's shop drawings, including plans and elevations, indicating overall dimensions.
- C. **Samples**: Submit manufacturer's samples of materials, finishes, and colors.
- D. **Warranty**: Manufacturer's standard warranty.

### 1.4 **QUALITY ASSURANCE**

- A. **Manufacturer's Qualifications**: Manufacturer regularly engaged in manufacture of site furnishings since 1969.
- B. **Product Support**: Products are supported with complete engineering drawings and design patents.
- C. **Base Worth**: An installed base of products worth in excess of one hundred million dollars.
- D. **Assets**: Excess of twenty million dollars in assets.
- E. **Production**: Schedule for production is order dependant.
- F. **Facility Operator**: Welders and machine operators are certified.

### 1.5 **DELIVERY, STORAGE, AND HANDLING**

- A. **Delivery**: Deliver materials to site in manufacturer's original, unopened containers and packaging, with labels clearly identifying product name and manufacturer.
- B. **Storage**: Store materials in clean, dry area in accordance with manufacturer's instructions. Keep materials in manufacturer's original, unopened containers and packaging until installation.
- C. **Handling**: Protect materials and finish during handling and installation to prevent damage.

### 1.6 **WARRANTY**

- A. **Warranty Information**:
  - Products will be free from defects in material and/or workmanship for a period of three years from the date of invoice.
  - The warranty does not apply to damage resulting from accident, alteration, misuse, tampering, negligence, or abuse.
  - Landscape Forms, Inc. shall, at its option, repair, replace, or refund the purchase price of any items found defective upon inspection by an authorized Landscape Forms service representative.
  - Purchasers should be aware that normal use of these high quality products can result in superficial damage affecting the finish. Scratches, nicks, and dents are to be considered normal wear and tear, and are not the responsibility of the manufacturer.

## **PART 2 PRODUCTS**

### 2.1 **MANUFACTURER**

- A. Landscape Forms, Inc., 7800 E. Michigan Ave, Kalamazoo, Michigan 49048.  
Phone: (800) 521-2546. Fax (269) 381-3455. Website [www.landscapeforms.com](http://www.landscapeforms.com)  
E-mail: [specify@landscapeforms.com](mailto:specify@landscapeforms.com)

### 2.2 **LANDSCAPE PANELS**

- A. **LINE**:
- B. **Height of panel**:
  1. 4ft high
  2. 6ft high
  3. other: \_\_\_\_\_
- C. **Style of panel**:
  1. ½" square horizontal rod
  2. ½" square vertical rod

3. 1" horizontal slat
  4. Perforated panel
  5. Solid panel
  6. Vertical louvered - angled
  7. Vertical louvered – straight
  8. Vertical picket
  9. Perforated panel – custom design
- D. Height of gate:
1. 4ft high
  2. 6ft high
  3. other: \_\_\_\_\_
- E. Style of gate:
1. ½" square horizontal rod
  2. ½" square vertical rod
  3. 1" horizontal slat
  4. Perforated panel
  5. Solid panel
  6. Vertical louvered - angled
  7. Vertical louvered – straight
  8. Vertical picket
  9. Perforated panel – custom design
- F. Mounting option:
1. Surface mount
  2. Embedded
- G. Linear feet required: \_\_\_\_\_

## 2.4 MATERIALS

Specifier Notes: Delete all that do not apply.

- A. Post: Aluminum extrusion, 3" x 1-1/2", .187 wall thickness. Base plate is 3" x 4-1/4" x 3/8" thick aluminum plate. Post cap is aluminum sheet. Post is fully welded.
- B. Panel insert: all components welded together and ground smooth. Panels bolt to posts with Magni-coated ¼-20 x 5/8" long button head cap screws.
  1. ½" square horizontal rods: 6061-T6 aluminum square bar, welded to 1/4" x 1-1/2" aluminum plate cross bars.
  2. ½" square vertical rods: 6061-T6 aluminum square bar, welded to 1" x 1-1/2" aluminum extrusion cross bars.
  3. 1" horizontal slat: 1" x ¼" 6061-T651 aluminum plate, welded to 1/4" x 1-1/2" aluminum plate cross bars.
  4. Perforated panel: 5052-H32 0.102" thick aluminum sheet, bolted to 3" x 1-1/2" aluminum extrusion framework. Perforations are ½" dia, spaced 1" apart.
  5. Solid panel: 5052-H32 0.102" thick aluminum sheet, bolted to 3" x 1-1/2" aluminum extrusion framework.
  6. Vertical louvered - angled: 3-1/2" x ¼" 6061-T651 aluminum plate, welded to 3" x 1-1/2" x 3/16 aluminum extrusion cross bars.
  7. Vertical louvered - straight: 2-1/2" x ¼" 6061-T651 aluminum plate, welded to 3" x 1-1/2" x 3/16 aluminum extrusion cross bars.
  8. Vertical picket: 3" x ¼" 6061-T651 aluminum plate, welded to 1" x 1-1/2" aluminum extrusion cross bars.

## 2.5 RECYCLED CONTENT

- A. Contact Landscape Forms for configuration-specific recycled content.

## 2.6 FINISHES

Specifier Notes: Delete all that do not apply.

- A. Finish on metal: Landscape Forms, Inc. "Pangard II".
1. Primer: Rust inhibitor.
  2. Topcoat: Thermosetting polyester powdercoat. UV, chip, and flake resistant.
  3. Test Results: "Pangard II".
    - a. Gloss, Garner 60 Degrees, ASTM D 523: Plus or minus 5.
    - b. UV Resistance, Color and Gloss, ASTM G 155, Cycle 7: Delta E less than 2 at 2.0 mils and less than 20 percent loss.
    - c. Cross-Hatch Adhesion, ASTM D 3359, Method B: 100 percent pass.
    - d. Flexibility Test, Mandrel, ASTM D 522: 3 mm at 2 mils.
    - e. Erichsen Cupping, ISO 1520: 8 mm.
    - f. Impression Hardness, Buchholz, ISO 2815: 95.
    - g. Impact Test, ASTM D 2794: 60 inches/pound at 2.5 mils.
    - h. Pencil Hardness, ASTM D 3363: 2H minimum.
    - i. Corrosion Resistance, 1,500-Hour Test, ASTM B 117: Max undercutting 1 mm.
    - j. Humidity Resistance, 1,500-Hour Test, ASTM D 2247: Max blisters 1 mm.

Specifier Notes: Specify color of finish. Consult Landscape Forms, Inc. for selection of standard colors and availability of custom colors.

4. Panel Color(s): \_\_\_\_\_

### **PART 3 EXECUTION**

#### **3.1 EXAMINATION**

- A. Examine areas to receive panels.
- B. Notify Architect of conditions that would adversely affect installation or subsequent use.
- C. Do not begin installation until unacceptable conditions are corrected.

#### **3.2 INSTALLATION**

- A. Install panels in accordance with manufacturer's instructions at locations indicated on the Drawings.
- B. Install panels plumb and level.

#### **3.3 ADJUSTING**

- A. Finish Damage: Repair minor damages to finish in accordance with manufacturer's instructions and as approved by Architect.
- B. Component Damage: Remove and replace damaged components that cannot be successfully repaired as determined by Architect.

#### **3.4 CLEANING**

- A. Clean panels promptly after installation in accordance with manufacturer's instructions.
- B. Do not use harsh cleaning materials or methods that could damage finish.

#### **3.5 PROTECTION**

- A. Protect installed panels to ensure that, except for normal weathering, units will be without damage or deterioration at time of Substantial Completion.

**END OF SECTION**