

**KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 2007 EDITION**

SECTION 824

CONCRETE SIDEWALK, STEPS AND RAMPS

Page 800-59, subsection 824.3e., add the following subsection:

(4) Cast-In-Place Composite Panels. Install according to the manufacturer's instructions. Provide a manufacturer's representative on site to instruct the Contractor and KDOT personnel in the correction installation procedures for the composite panels used.

Prior to the concrete achieving initial set, finish the concrete and recess areas to receive the composite panels below finished grade according to the manufacturer's instructions. Use a wood float or tool recommended by the manufacturer to achieve the proper depth, and refinish the disturbed area. When possible, install a single, standard size panel large enough to comply with the length and width requirements in the Contract Documents. If installation of a single panel will not satisfy the dimensional requirements in the Contract Documents, arrange the installation of standard size panels so the total joint length and panel cutting is minimized. Cut only those prequalified panels listed as used for "all applications".

When cutting panels, utilize auxiliary anchor points, as recommended by the panel manufacturer. Select enough additional anchor points so that no anchor is more than 4 inches from the edge (measured perpendicular to the nearest edge) and adjacent anchors are no more than 18 inches apart.

Delete SECTION 1725 and replace with the following:

SECTION 1725

ADA-COMPLIANT RAMP PANELS

1725.1 DESCRIPTION

This specification governs Americans with Disabilities Act (ADA) compliant ramp panels. The panels are required to comply with all dimensional requirements as stipulated within the ADA guidelines.

1725.2 REQUIREMENTS

a. General.

(1) Any manufacturer producing ADA-compliant ramp panels under this specification must be currently prequalified. Procedures for prequalification are outlined in **subsection 1725.4**.

(2) Unless shown otherwise in the Contract Documents, manufacture all ADA-compliant ramp panels provided under this specification to comply with the applicable subsections.

(3) Provide in the appropriate color stipulated in the Contract Documents. Warrant the color for 10 years.

b. Prestressed Concrete Panels.

(1) Provide a non-rusting prestressed support system integrated into the lower portion of the panel. The system is required to impart pressure in excess of 200 psi in both horizontal directions on a fully cured panel.

(2) Dimensions. Provide a 2 X 2 foot panels that comply with the dimensions and details specified by the ADA guidelines. Larger panels may be used if approved by the Engineer.

(3) Material Specifications. Provide ADA-compliant ramp panels that comply with **TABLE 1725-1**.

Table 1725-1: REQUIREMENTS FOR PRESTRESSED CONCRETE PANELS		
Property	Test Method	Requirement
UV Protection	ASTM G 155	No visible change to the panel.
Compressive Strength	ASTM C 39	≥ 8,000 psi
Slip Resistance	ASTM D 2047	≥ 0.80

c. Polymer Concrete Panels.

(1) Provide a polymer concrete panel. For this specification, polymer concrete is defined as having a cementitious material blended with an epoxy material to create a high-strength, tough and durable panel. Fibers may be used.

(2) Dimensions. Provide a 2 X 2 foot panels that comply with the dimensions and details specified by the ADA guidelines. Larger panels may be used if approved by the Engineer.

(3) Material Specifications. Provide a polymer concrete panel that complies with **TABLE 1725-2.**

Table 1725-2: REQUIREMENTS FOR POLYMER CONCRETE PANELS		
Property	Test Method	Requirement
UV Protection	ASTM G 155 or ASTM C 1501	No visible change to the panel.
Compressive Strength	ASTM C 39 or ASTM C 170	≥ 8,000 psi
Slip Resistance	ASTM D 2047 or ASTM C 1028	≥ 0.80

d. Composite Panels.

(1) Provide an anchored cast-in-place design that is replaceable without removing or damaging the surrounding hardened concrete.

(2) Panel. Provide a homogeneous, monolithic, glass-reinforced polymer composite panel that is colorfast and UV stable. Disperse coloring pigments and chemicals to enhance UV stability uniformly throughout the product. Panels using a coating to achieve color fastness or UV stability will not be approved.

If provided, a reinforcing flange or wedge along the perimeter of the panel can be no more than 0.65 inch deep (total depth, including panel thickness) and must be shaped in such a fashion so that it does not prevent panel removal and replacement in hardened concrete. Provide breaks in the perimeter flange to allow for air evacuation from under the panel during installation.

Cast the manufacturer's name into the top surface of the panel.

(3) Dimensions. If possible, provide a single, standard size panel large enough to comply with the length and width requirements in the contract documents. If a single panel will not satisfy the dimensional requirements in the contract documents, arrange the fewest number of standard size panels to minimize total joint length and panel cutting.

Provide a panel whose dome size and in-line spacing is ADA compliant.

(4) Anchor. Provide nylon composite or HDPE, corrosion resistant anchors. Provide a self-threading anchor design that allows for unlimited panel removal and re-installation.

Provide a minimum 2.0 inch long spike type anchor whose shape facilitates insertion into stiff, plastic concrete by minimizing concrete displacement while maximizing aggregate/anchor interlock. Other anchors shapes (not materials) will be considered for prequalification approval provided the panel manufacturer can provide a 3-year history of satisfactory anchor performance, especially in relation to anchor insertion under less than ideal concrete conditions and anchor pullout.

The outer "ring" of anchors can be centered no more than 4 inches from the nearest edge of the panel, measured perpendicular to the edge. The center-to-center spacing between adjacent anchors can be no more than 18 inches in any direction.

At anchor points, the bottom of the panel (including any molded form around the perimeter of the anchor interface) can be no greater than 0.25 inch below the bottom of the thinnest section of panel.

(5) Anchor Fastener. Provide minimum #10 size, tamper-proof, countersunk, flathead, stainless steel fasteners that sets flush with the dome or field surface and provides at least 1 inch of embedment into the anchor.

As part of the prequalification review of alternate anchors as described in **subsection 1725.2d.(4)**, a shorter fastener embedment will be considered.

Panels having fasteners that are set within a cavity recessed beneath the panel and capped with a disc, or panels having fasteners with heads fully exposed above the field surface will not be approved.

(6) Panel Modification. Provide a panel which, when cut, is engineered to conveniently facilitate the drilling of additional countersunk holes at thickened auxiliary anchor points to accommodate the maximum anchor spacing and edge distance requirements of **subsection 1725.2d.(4)**. If this requirement cannot be met, the panel will be approved for uncut applications only.

(7) Surface Protection. Provide a removable plastic film to protect the panel surface during installation.

(8) Material Specifications. Provide a composite panel that complies with **TABLE 1725-3**.

Table 1725-3: REQUIREMENTS FOR COMPOSITE PANELS		
Property	Test Method	Requirement
Water Absorption	ASTM D 570	≤ 0.50%
Accelerated Weathering	ASTM G 155	No visible change (2000 hrs)
Flexural Strength	ASTM D 790, Procedure A	≥ 15,000 psi
Slip Resistance	ASTM C 1028	≥ 0.75 wet , ≥ 0.80 dry
Abrasion Resistance	ASTM C 501	I _w > 130
Salt Spray	ASTM B 117	No visible change (120 hrs)
Freeze/Thaw/Heat	ASTM C 1026	No chipping, cracking, or peeling
Accelerated Aging	ASTM D 1037	No change in color or gloss, no delamination
Waste Classification	RCRA-C	Non-Hazardous

1725.3 TEST METHODS

Perform all test methods as specified in **subsection 1725.2** for the given product.

1725.4 PREQUALIFICATION

To prequalify concrete panels, send a single 6 x 6 inch sample of each color to be prequalified to the Engineer of Tests along with test results from a certified laboratory (CCRL, A2LA or NVLP).

To prequalify composite panels, send a single 1 x 1 foot panel (w/installed anchors) of any color and a single 6 x 6 inch sample of each color to be prequalified to the Bureau Chief of Materials & Research along with test results from an approved laboratory. In addition, provide detailed product information, including all dimensional information, and step-by-step procedures covering original installation and panel removal/re-installation. Consideration of alternate anchors shapes will require additional information as described in **subsection 1725.2d.(4)**. Material or physical changes to panels or anchors requires re-prequalification. Changes in panel size or additions to the number of standard panel sizes does not require re-prequalification as long as the spacing and edge distance requirements of **subsection 1725.2d.(4)** continue to be satisfied.

Panels must be able to comply with the general and product specific requirements of **subsection 1725.2**.

The Bureau of Materials and Research will maintain a prequalified list of all complying manufacturers. Products will remain on the prequalified list as long as performance in the field is satisfactory.

1725.5 BASIS OF ACCEPTANCE

The manufacturer must be currently prequalified as specified in **subsection 1725.4**.

Receipt and approval of a Type C certification as specified in **DIVISION 2600**

Visual inspection for cracked or damaged panels.