

ZG 551 Padvault—Three-Phase Fusing Cabinet

1. Scope

This specification outlines the minimum requirements for padvaults to be used in conjunction with company-owned, three-phase fusing cabinets. The specification applies whether the padvault is to be installed by company personnel, contractor, customer, or the supplier.

2. Applicable Documents

The latest revisions of the documents, standards, codes and requirements listed in 2.1, Company Material Specifications, and 2.2, Codes and Standards, in effect on the date of invitation to bid apply to the extent specified herein.

2.1. Company Material Specifications

ZG 301 *General Equipment Base and Enclosure Requirements*

ZG 311 *Concrete Requirements*

ZG 621 *Concrete Requirements*

ZG 562 *Padvault—7' × 12' (94" × 155")*, for 600-Amp, Dead-Front Switchgear

ZG 811 *Full Traffic Cover and Frame Assembly*

2.2. Codes and Standards

ANSI/SCTE 77 2007, Tier 8

3. General

This specification states material and construction requirements that are applicable only to all three-phase fusing cabinet padvaults.

4. Applicable Stock Item Numbers

Materials being submitted for the following company stock item numbers are subject to evaluation in accordance with the requirements in this specification.

4.1. Stock Item Numbers

7992604, PADVAULT, FUSE CABINET, 3-PHASE, 15/25 KV, 3-4 POSITION

7992881, PADVAULT, FUSE CABINET, 3-PHASE, 15/25 KV, 5 POSITION

5. Design and Manufacturing Requirements

The purpose of a three-phase fusing cabinet padvault is to support a three-phase fusing cabinet.

5.1. Padvault Layout

Unless otherwise approved by company engineering, all dimensions and placement of hardware shall conform to those shown in Figure 1 or Figure 2, shown below. The pads found in this specification are unique to the fusing cabinets used by the company.

5.2. Inserts and Mounting Hardware

For three- or four-position fusing cabinet padvaults, the supplier shall provide:

- two 2" × 4" × 78" composite boards, cast flush with the top of the padvault lid, at the locations specified in Figure 2.

For five-position fusing cabinet padvaults, the supplier shall provide:

- two 2" × 4" × 114" composite boards, cast flush with the top of the padvault lid, at the locations specified in Figure 1.

Hardware to fasten the fusing cabinet to the composite boards shall be provided:

by the company:

- six ½" × 2" hot-dip galvanized lag screws (SI# 7992810)
- six ½" stainless steel belleville washers

by the supplier:

- six 1¼" × 2½" stainless steel hold-down cleats with ¼" lift and $\frac{9}{16}$ " × 1½" holes.

All loose hardware shall be packaged, and the package shall be attached to one of the padvault walls.

5.3. Pulling Attachments

Descriptions of cable-pulling attachments are found in ZG 621 and ZG 711. Pulling attachments shall be rated for 4000 lbs. of pulling tension.

5.4. Conduit Entrances

Term-A-Ducts are used for the conduit entrances. The layout of Term-A-Ducts can be found in ZG 621 and ZG 562.

5.5. Lifting Attachments

Enough lifting attachments shall be provided to ensure safe installation of all pieces at the site.

5.6. Grounding Grid

Each vault shall be constructed with an encased electrode meeting NESC 094.B.6. The $\frac{3}{8}$ " steel rebar shall be 20 continuous feet in length, embedded in concrete at least 24" below finished grade when the vault is set. The grounding system attaches to a connection insert of high-strength bronze alloy, threaded to $\frac{1}{2}$ " 13 UNC. The vertical rebar attaching to the bronze connection shall be welded or connected by a minimum of a copper clad $\frac{5}{8}$ " ground clamp.

Each padvault shall have five grounding inserts: two on opposite side walls and one at the cover. Two inserts on opposite side walls shall be available for connection on the inside and outside of the vault. The outside grounding inserts shall be centered on the side walls. The inside inserts shall be centered on the side wall or located no less than 6" from diagonal corners. The cover pad grounding insert shall be accessible from inside the vault.

The details of the grounding grid may be found in ZG 621 and ZG 562.

5.7. Access Panel

The access panel for the fusing cabinet padvaults may not be larger than 24" × 60". For a detailed outline of access panels, refer to ZG 811.

5.8. Installation

This unit shall be installed at the site by the supplier or contractor. There shall be a 6" base of $\frac{3}{4}$ "-minus gravel compacted to 90% of dry density under the padvault and leveled to within 2% slope before setting the padvault. All joints between concrete sections shall be sealed using tar or mastic. The top of the pad should be two to four inches above final grade, when installed in a non-pedestrian area. The pad shall be flush with final grade in pedestrian areas.

5.9. Grounding

The pad shall have one insert grounding as described in ZG 621 and ZG 562.

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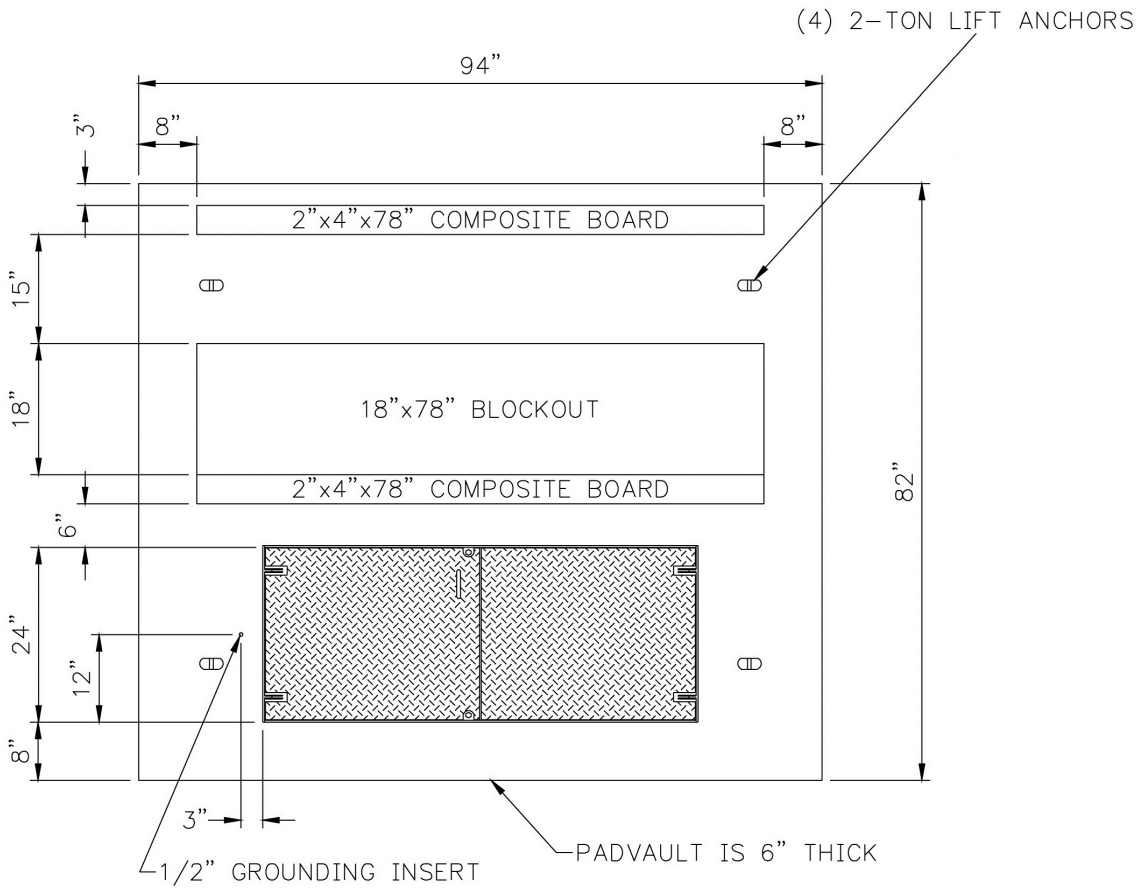


Figure I— Three- or Four-Position Three-Phase Fusing Cabinet Padvault (SI# 7992604)

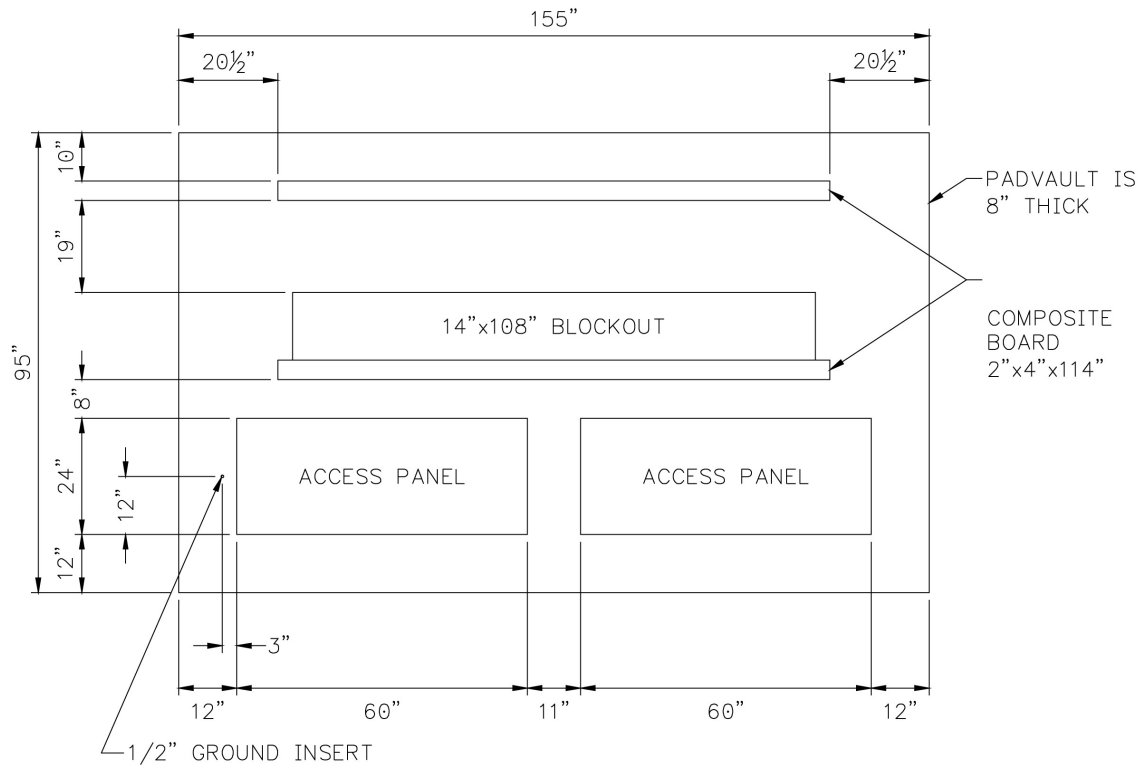


Figure 2— Five-Position Three-Phase Fusing Cabinet Padvault (SI# 7992881)

6. Testing

6.1. Test Compliance

Padvaults submitted under this specification shall meet all tests and requirements contained in ZG 301, General Equipment Base and Enclosure Requirements; ZG 311, *Concrete Requirements*; and this specification. Padvaults shall also comply with requirements in applicable national standards.

6.2. Security Test

Fusing cabinet padvaults must be designed and tested to ensure that padmount equipment is not compromised by uneven pad setting. And, with the appropriate fusing cabinet mounted, attempt to pass a #14 AWG soft-drawn copper wire through the interface between the cabinet and pad. If the wire can be passed through the interface, the padvault has failed the test and will be rejected by the company.

7. Issuing Department

The T&D standards engineering department of PacifiCorp published this material specification. This material specification shall be used and duplicated only in support of company projects.

Material Specification

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Published Date: 19 Mar 19

Last Reviewed: 19 Mar 19



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