



## **Handbook of Construction Details** (Suggested Guidelines Only)

DPS Series 500 Panels For:

- Storage Freezers
- Coolers
- Food Processing Plants
- Beverage Plants

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Diversified Panel Systems

## INTRODUCTION

The details contained in the following pages are merely suggestions / guidelines for installation of Diversified Panel Systems, Inc. (DPS) materials. We believe all information presented is accurate but is not intended to cover all instances, building requirements, designs or codes. Since each project is unique, the details may require some change, revision or adaptation to fit the specific application.

DPS wall and ceiling panels and related components must be installed in compliance with applicable codes, regulations, and good engineering and construction practices and in accordance with the project's installation drawings and the applicable portions of this installation guide.

The installer shall familiarize himself with all erection instructions and panel drawings before starting work. Before receiving the materials and before starting the panel installation, the panel installer must ensure that the proper equipment and tools are on hand. Before beginning erection of the panels, the installer shall examine the substrate to ensure that all supporting members are straight, level, plumb and true in accordance with minimum tolerances. Do not start work until unsatisfactory conditions have been corrected.

Fastening systems shown are for general information only. They do not constitute fitness for end use. Contractor to verify that the fastening system and load data used has been approved by architect or engineer of record and is in accordance with all local codes and conditions.

Good construction practices, safety procedures together with the following information and project drawings are intended to produce a high quality installation. The installer may utilize the details provided and procedures recommended for the installation of materials. Some field cutting and fitting of panels and flashings is expected. Minor field corrections of materials are a part of the normal installation process. Oil canning in the flat areas of the panels is common to the industry and shall not be the cause for product refusal. Experienced metal craftsmen and carpenters should be utilized to achieve the best standards for installations.

## GENERAL INSTALLATION PROCEDURE

### HANDLING INSTRUCTIONS:

DPS panels are carefully bundled and wrapped to prevent damage during shipping. The transportation company is responsible for delivering these components undamaged.

When shipment is received, check each item against the proper shipping document for quantity, length, transit damage, etc. If a shortage or damage is found, make sure notation of it is made on the bill of lading and signed by the driver. It is your responsibility to make any damage claim.

DPS panels will generally arrive in large wrapped bundles on flat bed trailers. Bundles are typically unloaded by mechanical means. When using forklifts, carefully pick up bundles one at a time. Extreme care should be taken to avoid bumping and jostling the panels when lifting and maneuvering. Bundles are less than 48" wide. Over engagement of forks will cause damage to materials positioned on the opposite side of the bundle being lifted. Do not lift or unload more than one bundle at a time.

If unloading by hand, glove and eye protection must be worn at all times. To prevent damage, never lift the panel from the flat position by the side joint. When handling a panel, care must be taken to prevent the panel from flexing. Flexing can rupture the panel's core and permanently distort its' face. It is recommended that whenever a panel is handled, picked up, moved or carried, it should be turned on edge first. Under no circumstances should a panel be handled while flat. Once a panel has been turned on edge, it should be completely lifted from the bottom by a person at each end. Always lift panels when removing them from a bundle, never drag. Never lift the panels by the top sheet.

### STORAGE INSTRUCTIONS:

Inspect bundles carefully. Any visual damage should be noted on the carrier's freight bill. Damage claims should be filed directly with the carrier. If the bundles are to be used immediately, they should be placed at strategic locations around the work perimeter. Consult the panel layout drawings to determine these locations. Store bundles on firm, dry, level ground using the factory provided foam "stickers" under the panels. If panels are not to be used immediately, care should be exercised as to location and conditions for long-term storage. For long-term storage, measures need to be taken to ensure that moisture is not trapped between panels, possibly causing corrosion.

Care should be taken in the unloading and storage of small items – trim, flashings, fasteners, sealants, and etc. that arrive on site. Cover all pallets, crates or boxes to protect materials from the weather but allow for ventilation to prevent condensation.

## PANEL CUTTING:

Panels may be cut prior to installation or in the final installed position. Proper eye and hearing safety protection must be worn at all times while cutting panels. When cutting across panel joints, it is preferable to cut the panels before installing them. If field cutting is required, use extreme care to avoid delamination. Do not use cutting disks or other high heat producing methods for cutting as hot filings may damage the painted surface. Avoid cutting equipment and techniques that may delaminate the panel facing skins. Procedure for full depth cuts:

- Measure the distance or area to cut and mark a line on the face of the panel.
- To protect the panel surface, apply masking tape adjacent to the area to be cut.
- Recheck measurements and proceed with the cutting operation.
- Sweep or clean off any metal fragments left on panel after cutting.
- Flip panel over and repeat above steps.
- Cut foam in between panel skins using a sharp knife, wire or a reciprocating saw with a blade to match the foam thickness.
- File or sand off any metal burrs or rough spots resulting from the cutting operation.

After cutting or drilling of panels, always remove metal chips that have fallen onto panels or flashings to preclude later damage.

## THERMAL BREAKS:

When cutting thermal breaks for cold storage applications, a horizontal saw cut of at least  $\frac{3}{4}$ " is necessary to avoid thermal transfer. Consult DPS representative or factory for thermal break details.

## BUTYL CAULKING:

Apply butyl caulking to female groove of the panel edges to provide an additional vapor and air infiltration barrier when panels are engaged. Butyl caulk must marry sealant tape / vapor barrier running perpendicular to the panel joint at panel end conditions. Caulking is best applied while panels are lying flat.

Caulking to be applied to the warm / exterior side of the panel joint (see details) immediately prior to engaging of panels.

## BUTYL SEALANT TAPE / VAPOR BARRIER MATERIALS:

To provide an effective vapor seal in some freezer applications, a butyl sealant tape and /or other vapor barrier materials may need to be applied to all exposed foam insulation and joints, on the warm side of panel, prior to installation of flashing. Sealant tape may also be used between base channel and floor / vapor barrier. All fasteners penetrating flashing must be inserted through sealant tape. Sealant tape applied to ends of panels must marry butyl caulk in panel joint. The selection and procurement of the appropriate vapor barrier materials, sealant tape and adhesives is the responsibility of the building designer and installer. These materials are not provided by DPS.

## PANEL INSTALLATION:

Place bottom end of panel on base and tilt to vertical position. Longer panels may require the use of a hoist or other lifting equipment. Slide panel firmly into groove of the preceding panel using firm, gradual pressure to draw the panels together. Do not pound panels into place or use localized forces that may damage the panels. Plumb and square each panel before installing fasteners.

Trim materials to be located as per project drawings. See drawings for appropriate fastener size, type and spacing. Always refer to the fasteners manufacturer's instructions for specific requirements. Before starting a screw, the materials to be joined must be pressed firmly together to ensure that there are no gaps between the materials. Screws must always be installed perpendicular to the surface of the material being secured. A tilted screw causes eccentric bearing under the screw's head, which may result in the break off of the screw head. Tilted screws can cause lateral drifting between the materials being secured. Do not over tighten fasteners. Overdriving the screws causes strip-out and dimpling of the panel or flashing surface.

See project drawings for special conditions requiring additional support or fastening of panels.

## TOUCH UP PAINT:

Panel installer to touch up all exposed field cut edges with touch up paint.

## CLEANING AND MAINTENANCE OF PANELS:

The embossed, painted finish of the DPS panel faces provides an attractive appearance. It is important that the panel surfaces are protected from damage during handling and throughout the installation process. Do not allow the panels to be struck by other construction, materials or equipment.

Proper installation and maintenance are extremely important in obtaining the best service and appearance from pre-painted metal panels. All dirt, oil, fingerprints or other possible contaminants should be removed after installation to assure proper life of the paint film.

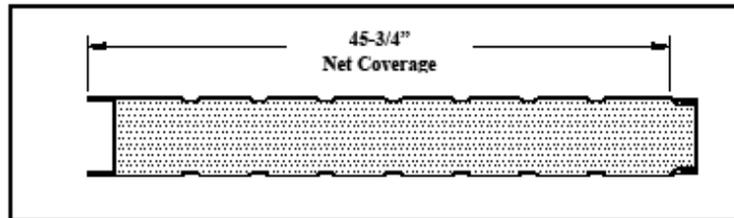
In many cases, a simple washing of the panels with plain water using light pressure spray will adequately clean the panels. In areas of heavy dirt deposits, a solution of water and detergent (1/3 cup of detergent per gallon of water) may be used with a rag, sponge or soft bristle brush. A clear water rinse should follow. Wire brushing or any abrasive material may damage the painted surface and should not be used. Warning: Strong solvent and abrasive cleaners should not be used. Such use will void warranty.

## INSTALLATION DETAILS:

The following details are provided as suggested procedures in installing the wall and ceiling panels and associated flashing materials. The details are generic, showing typical conditions that may vary from the project's actual conditions. Refer to the project's installation drawings for specific requirements.

## SLIP LOCK PANEL

**SL-504**



### DESCRIPTION

A versatile insulated building panel with a tongue and groove joining system roll-formed along the edge.

### RECOMMENDED USES

Architectural, Cold-rooms, Clean-rooms, Caravan Annexes, Roofs, Partitioning, Portable Buildings.

### SPECIFICATIONS

Width: 45-3/4"

Thickness: 2" - 12"

Length: To Order.

**Skin:** 26 Gauge G-90 hot dipped galvanized (ASTM 446) with Epoxy Primer and acrylic polyester topcoat over a properly cleaned and pretreated substrate.  
24 gauge available upon request.

**Color:** USDA White. Custom colors and finishes available upon request.

**Core:** Minimum 1.0 Lb. Per cubic foot density expanded polystyrene (ASTM C578) CFC free. Fire retardant added. Extruded polystyrene and Isocyanurate available upon request.

**Thermal properties:** EPS at a mean temperature of 25°F R-value 4.35 per inch. EPS at a mean temperature of 40°F, R-value 4.1 per inch.

**Weight:** 2'- 1.99, 3'- 2.05, 4'- 2.15, 5'- 2.24, 6'- 2.37, 7'- 2.40, 8'- 2.49, 9'- 2.57, 10'- 2.65, 11'- 2.73, 12'- 2.81.

**Adhesive:** Polyurethane, CFC free.

#### Flammability Properties of 500 Series Panels:

ASTM E84-95 Flame Spread Index = 5.

ASTM E84-95 Smoke Development Index = 80.

Based on 4" Thick.

ASTM tests are used solely to measure and describe properties in response to heat and flame under controlled laboratory conditions. Flame spread and smoke development ratings derived are not intended to reflect hazards under actual fire conditions. Values are reported by Omega Point Laboratories Report No. 15600-100475.

**Span Chart:** See other side.

**Surface Finish:** Plain or ribbed.

**Variation:** Most of the above specifications can be altered to suit particular applications. Common variations include color, core type or density and skin material.

Diversified Panel Systems uses only the highest quality materials and offers customers a variety of panel colors, skins, cores and profiles from which to choose.

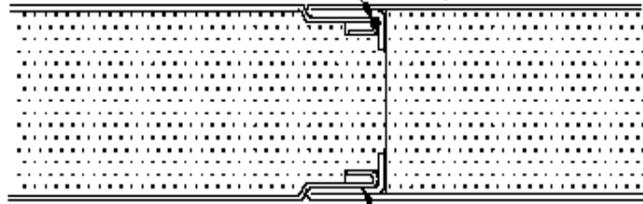
DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.

2345 Statham Blvd., Oxnard CA 93033  
(805) 988-5070 Fax: (805) 988-4630  
[www.dpspanels.com](http://www.dpspanels.com)

DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.

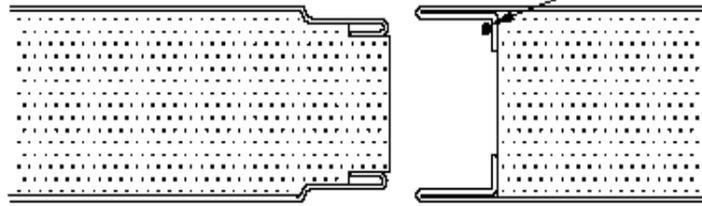
SLIP LOCK CONNECTION  
W/CONTINUOUS  
SEALANT WARM SIDE

DPS SL-504  
SLIP LOCK PANEL



SLIP LOCK  
CONNECTION

SEALANT



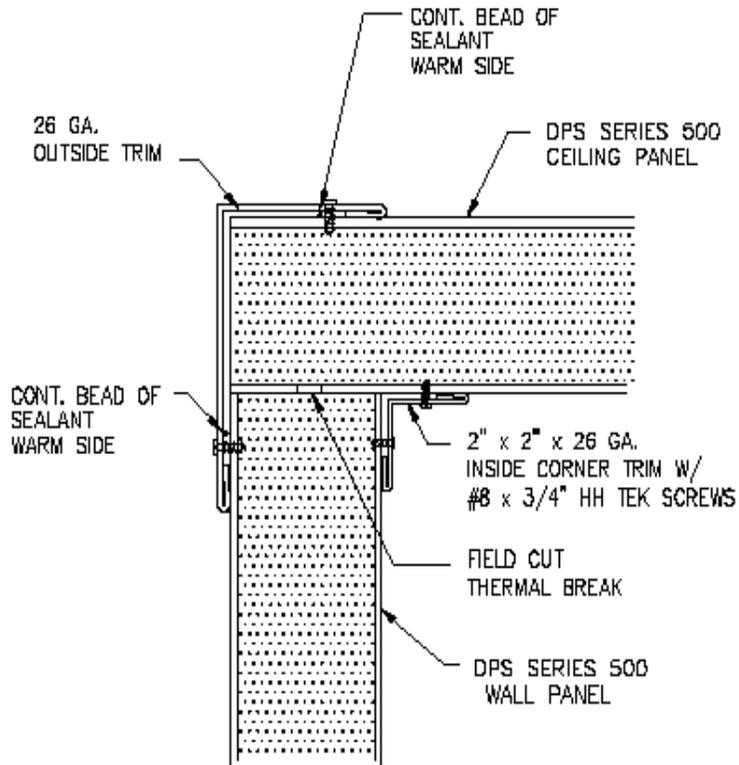
DPS SL-504  
SLIP LOCK PANEL

SLIP LOCK  
CONNECTION

SL-504 SLIP LOCK  
WALL & CEILING  
CONNECTION

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

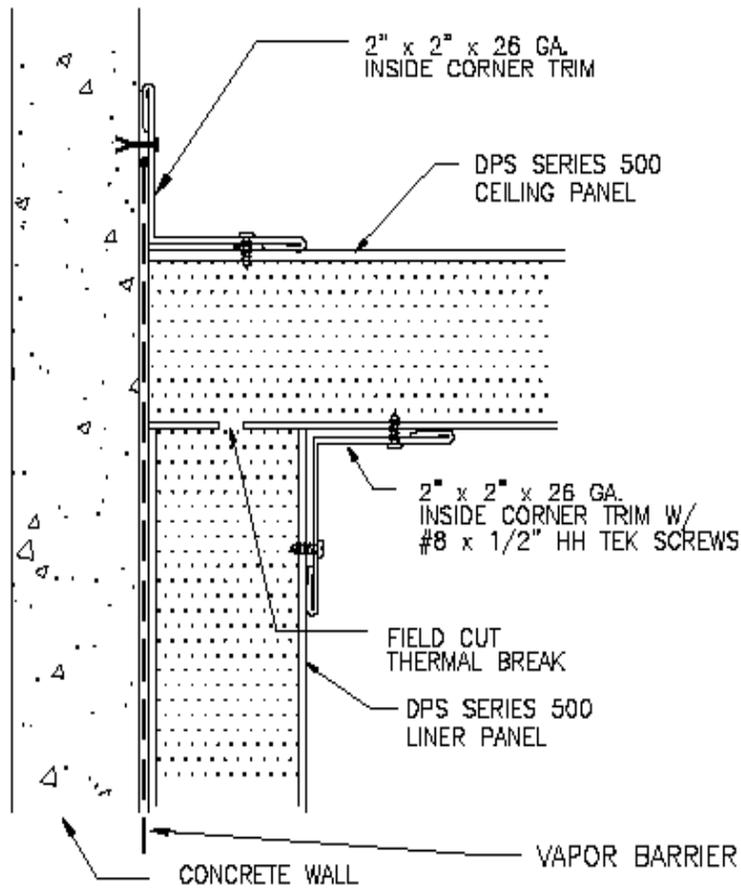
DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.



WALL/CEILING  
CORNER DETAIL

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

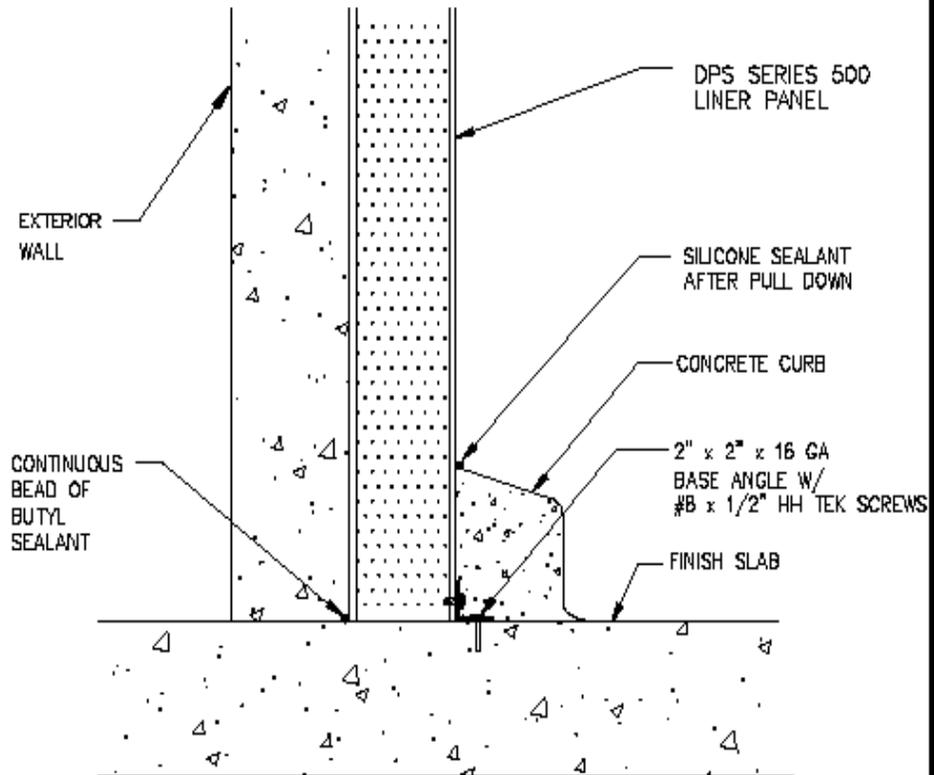
DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.



WALL/CEILING  
CORNER DETAIL 2

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

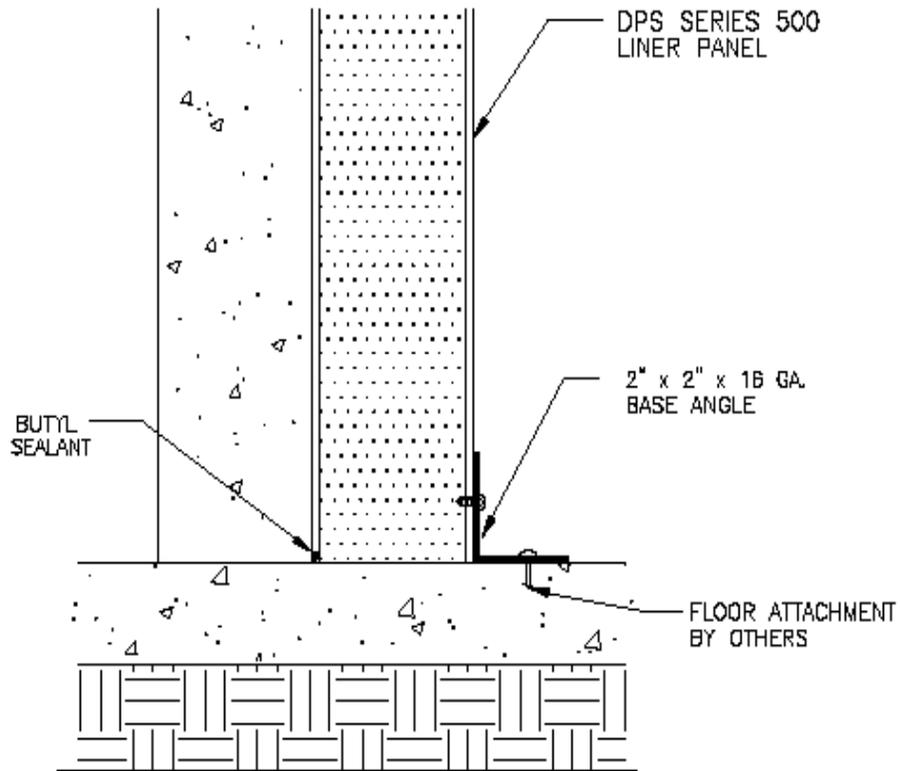
DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.



COOLER LINER  
BASE DETAIL

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

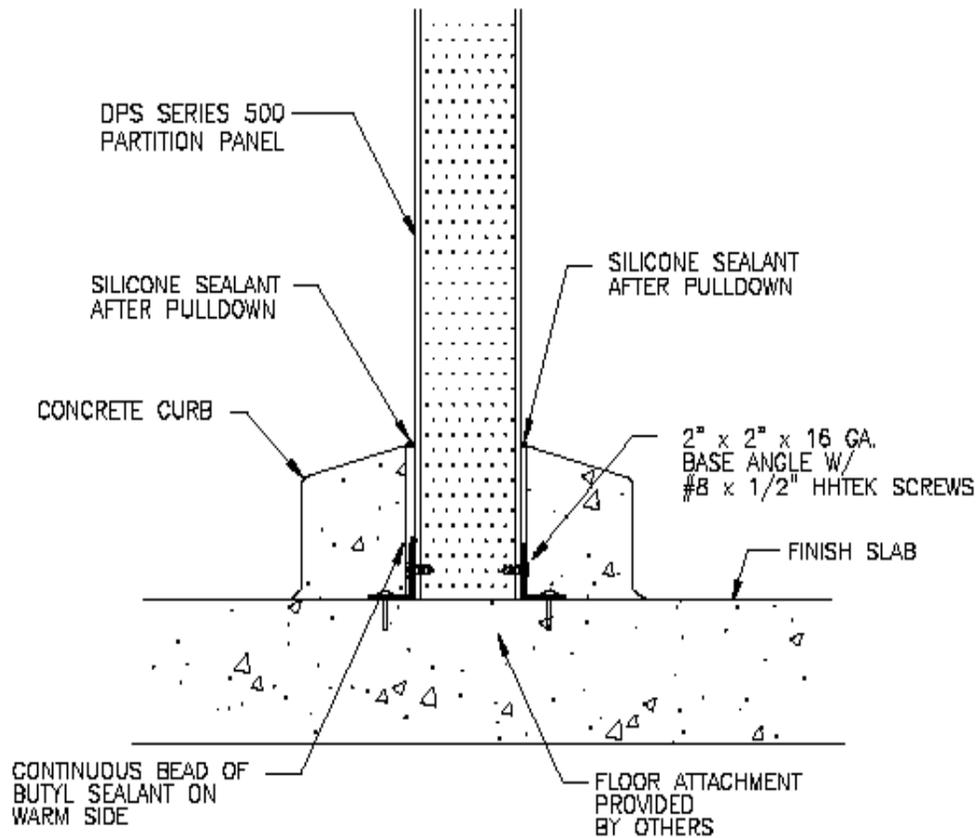
DIVERSIFIED PANEL  
**DPS**  
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COOLER LINER  
BASE DETAIL 3

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

DIVERSIFIED PANEL  
**DPS**  
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COOLER PARTITION  
BASE DETAIL

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

DIVERSIFIED PANEL

**DPS**  
SYSTEMS, INC.

DPS SERIES 500  
PARTITION PANEL

FINISH SLAB

#8 x 1/2"  
H.H. TEK SCREW

2" x 2" x 16 GA.  
BASE ANGLE

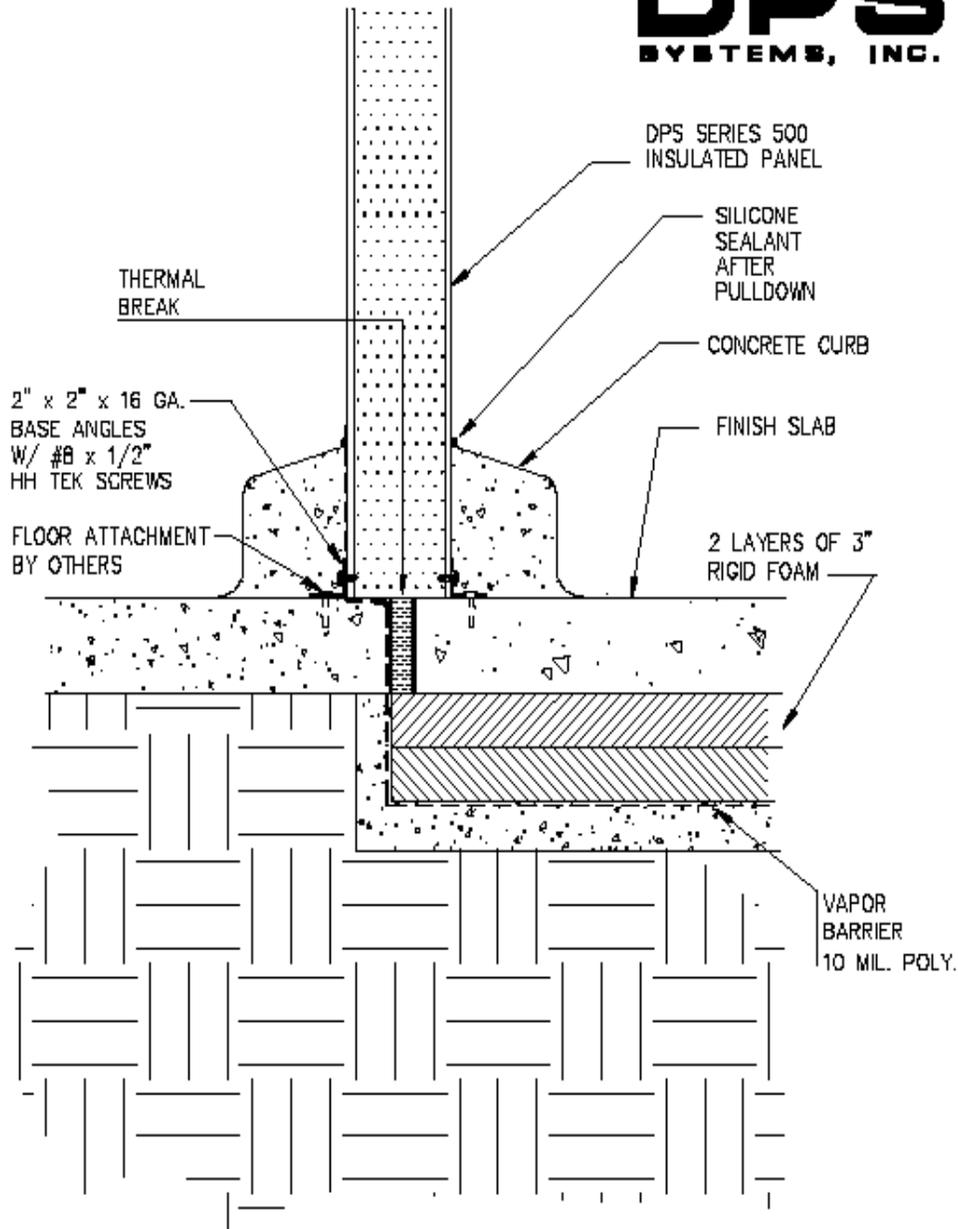
FLOOR ATTACHMENT  
PROVIDED  
BY OTHERS

CONTINUOUS BEAD OF  
BUTYL SEALANT ON  
WARM SIDE

COOLER PARTITION  
BASE DETAIL 4

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

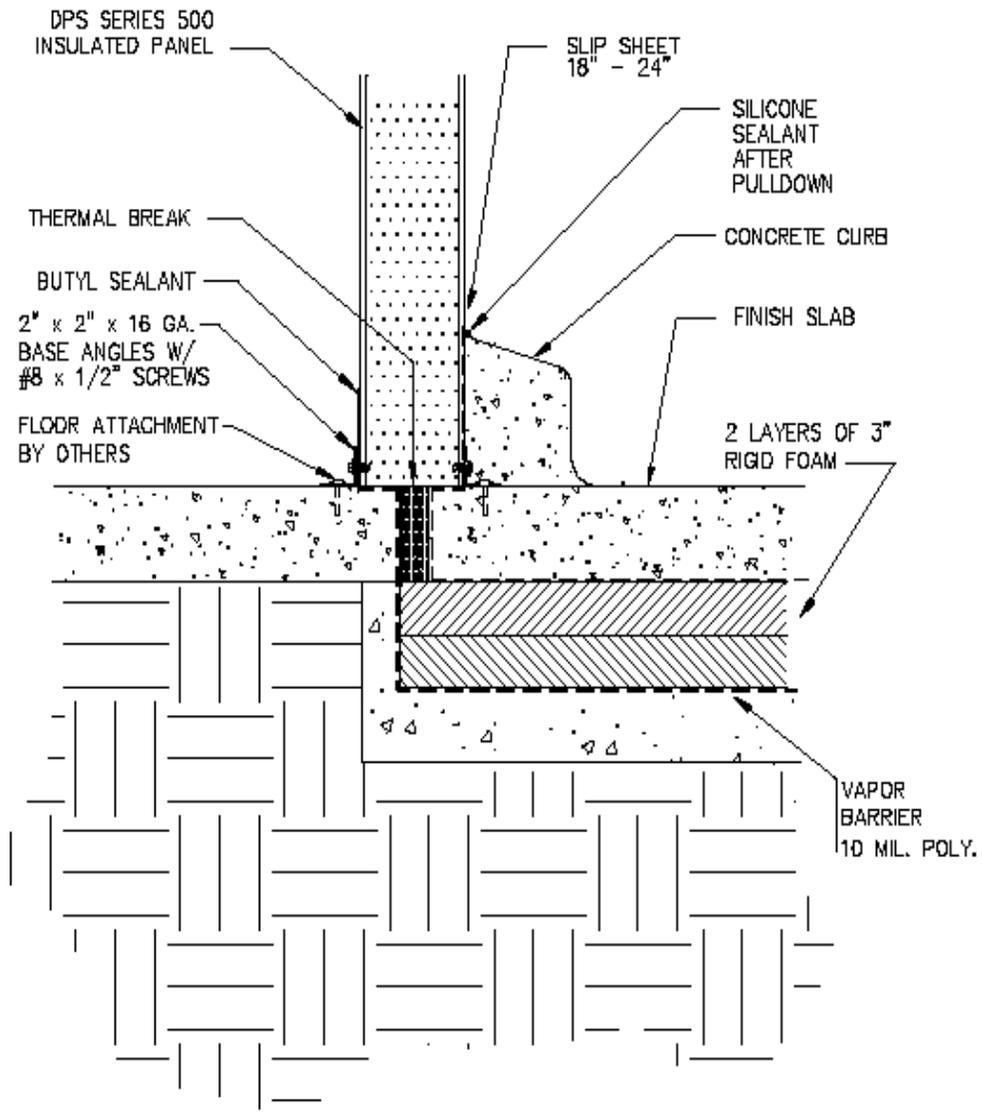
DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.



FREEZER PARTITION  
BASE DETAIL

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

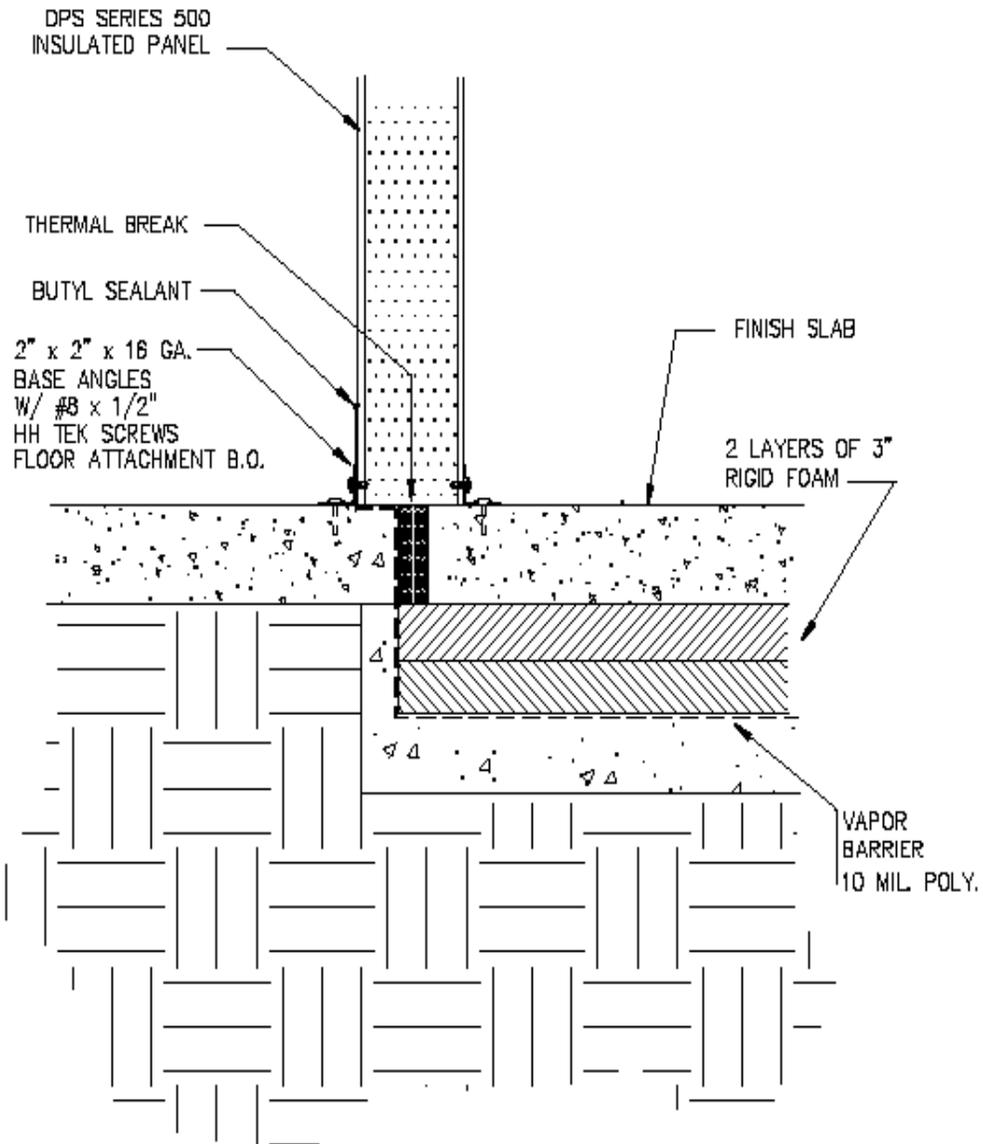
DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.



FREEZER WALL  
BASE DETAIL

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

DIVERSIFIED PANEL  
**DPS**  
SYSTEMS, INC.



DPS SERIES 500  
INSULATED PANEL

THERMAL BREAK

BUTYL SEALANT

2" x 2" x 16 GA.  
BASE ANGLES  
W/ #8 x 1/2"  
HH TEK SCREWS  
FLOOR ATTACHMENT B.O.

FINISH SLAB

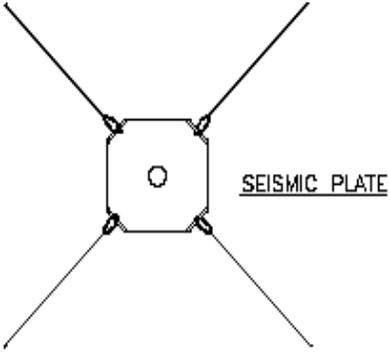
2 LAYERS OF 3"  
RIGID FOAM

VAPOR  
BARRIER  
10 MIL. POLY.

FREEZER WALL  
BASE DETAIL  
WITHOUT CURB

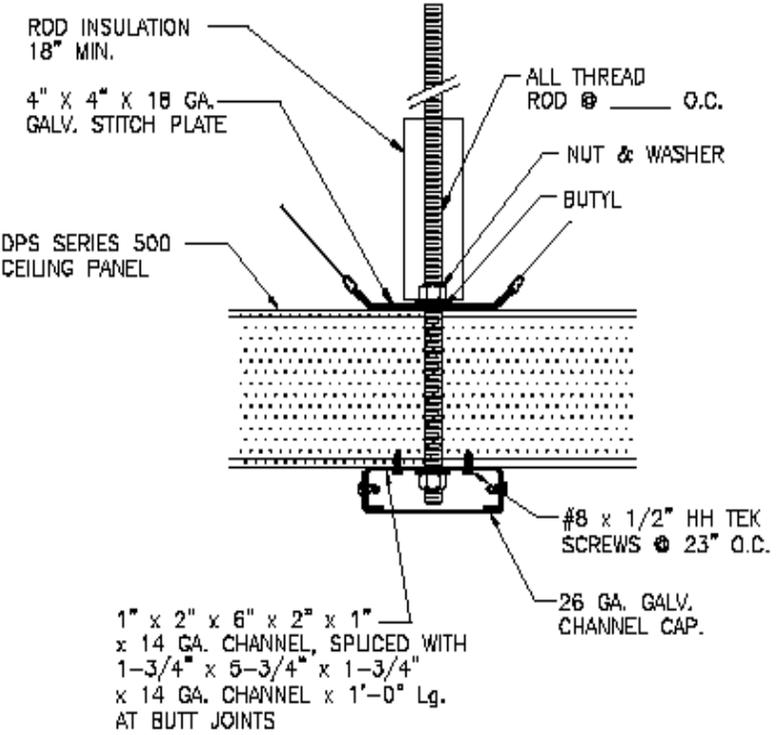
THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

**DIVERSIFIED PANEL**  
**DPS**  
**SYSTEMS, INC.**



SEISMIC PLATE

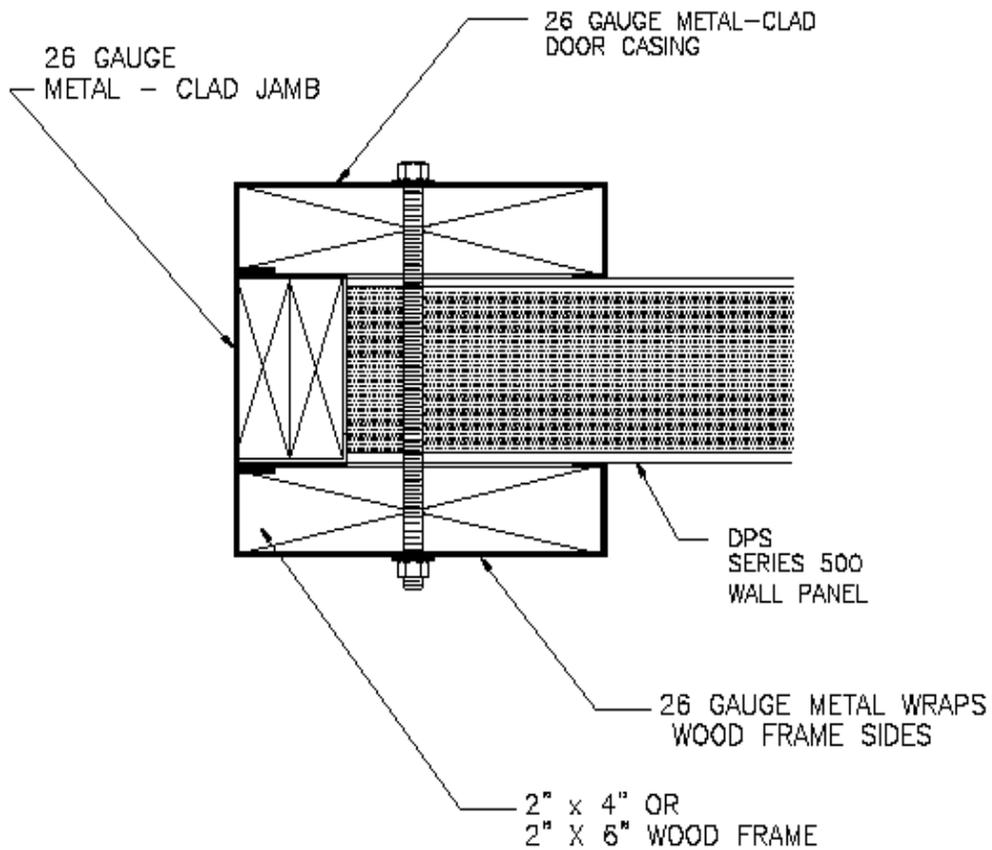
ATTACHMENT TO BUILDING ROOF STRUCTURE BY OTHERS



SUSPENDED CEILING PANEL DETAIL  
 WITH SEISMIC RESTRAINT

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS

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**DPS**  
SYSTEMS, INC.



DOOR JAMB DETAIL

THE ULTIMATE IN COLD STORAGE CONSTRUCTION MATERIALS