



Technical Sheet and Installation Guide  
**Hebel® Fence Panels**  
**Autoclaved Aerated Concrete**

 German  
Technology

 **hebel®**



## About Hebel®

Hebel® is a registered trademark of Xella Group, a German technology. In the USA, we are now part of Bexel International Group, manufacturing Autoclaved Aerated Concrete products, following the highest quality standards of the industry. Hebel® offers the most efficient solution in construction systems, more than 80 years in the market support us. We have been present in America since 1994.

Hebel® is distinguished by being a high-quality, innovative option that combines various properties in a single material. The benefits are reflected from the construction phase, it is up to 5 times lighter than traditional concrete, and has a significant impact on reducing construction time, as well as generating great savings in steel, concrete and labor.

We promote sustainability with high energy efficiency in all types of buildings.

Our systems provide high thermal performance, maximum fire resistance, acoustic insulation and resistance to humidity.

Hebel® is committed to providing to the United States with environmentally responsible building solutions that conserve material and energy usage. We are members of the Green Building Council.

Hebel® Autoclaved Aerated Concrete offers to contractors with strong, easy-to-install blocks and reinforced panels that are one-third the weight of traditional concrete and replace traditional multi-step construction processes.

Our building systems offer low insurance and maintenance cost to the building owner. A wide range of projects can benefit from Hebel® blocks and reinforced panels, including those in the commercial, educational, hospitality, industrial, institutional, governmental and residential segments.

Due to the AAC qualities, Hebel® has national and international recognized certifications, their manufacturing process is carefully monitored at all

stages, in order to guarantee the best quality for our customers.

Its properties take any project to a higher category, managing to build a better quality life, comfort and savings for a lifetime. At Hebel® we care to offer a full experience with a 360 service for each project specification.

The Hebel® Plant is located in Nuevo León, México and its USA offices are located in San Antonio, TX., from where we serve the USA market.



# Aerated Concrete Hebel® : Unique properties in a single material.

## Benefits



### Thermal Insulation

Buildings constructed of HEBEL AAC provide substantial energy savings in both hot and cold climates. The unique closed cellular structure and the thermal mass contribute to a high R-value and air-tightness which reduce heating and cooling costs and improve indoor air quality. **Buildings have seen savings on air conditioning up to 35% by using HEBEL AAC.**



### Structural Performance

Resists wind pressures. High impact resistance.



### Fire Resistant

We are **certified** by Underwriters Laboratories (UL) with the **maximum fire-rating classification**. Our systems **withstand fire exposure up to 4 hours**, maintaining their structural integrity and **DO NOT emit toxic fumes** even under intense heat.



### Acoustic Insulation

Provides exceptional acoustic insulation. Its porous structure and high surface mass, coupled with its ability to dampen mechanical vibration energy, **greatly reduces sound transmission from exterior - interior and room-to-room.**



### Resistance to humidity

**Protects against moisture.** It allows the passage of water vapor, reducing condensation.



### Green Building

- Recyclable, inert & non-toxic
- Energy saving
- Durable
- LEED credits



### Easy treatment

Can be **easily cut, drilled and grooved** with manual or power tools.



### Lightweight

Its lightweight nature allows a **faster and more efficient construction.**



### Pest resistance

Not a food source for termites or vermin and no cavity construction. **Eliminates the chance of harbouring pests.**

## Physical Properties

The physical properties of HEBEL Autoclaved Aerated Concrete are unique to any other building material. Properties such as thermal insulation and fire resistance cannot be met by another product alone.

- Speed of Construction
- Thermal Insulation & Energy Savings
- Superior Fire Resistance
- Sustainable
- Relatively high strength for a low density
- Workability
- Acoustic Performance
- Precision

This product meets Standards and Evaluation issued by:



ACI  
530-13  
ACI  
523.4-R09



ASTM  
C 1693-11  
ASTM  
C 1660-09



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## Hebel® Fence Panels Autoclaved Aerated Concrete



### Uses and applications

Hebel fence can be used for fence construction on landscaping, providing privacy, protection and style. Decorative and creative ideas can be adapted to Hebel Fence such as ornamental moldings, openings, posts, etc.

### Construction Advantages

- Fast and easy to install.
- Lightweight.
- Fire Resistant.
- Strength and security.
- Versatile and affordable.
- Acoustic barrier.
- Low maintenance (Durability).

### Application:

- Commercial
- Residential
- Industrial

### Certifications:

UL, IAPMO, ACI, TDI.

This product is friendly to the environment, ecological, non-toxic and sustainable; And also grants LEED points.





Hebel® Fence Panels  
Autoclaved Aerated Concrete

German  
Technology 



# 1 Technical Sheet

## 1.1 General Features

### Description

Hebel® Fence is lightweight, fire resistant\*, water penetration resistant\*\*, pest resistant, fast and easy to install, versatile and affordable. Hebel® Fence Panel is an AAC, steel reinforced board with grade 70 steel covered with an anticorrosive coat. Hebel® Fence can be cut easily and drilled with conventional tools.

\*Under ASTM E119-95 UL

### Uses

Hebel® Fence can be used in landscaping, providing privacy, protection and style. Decorative and creative ideas can be adapted to Hebel® Fence such as ornamental moldings, openings, posts, etc.

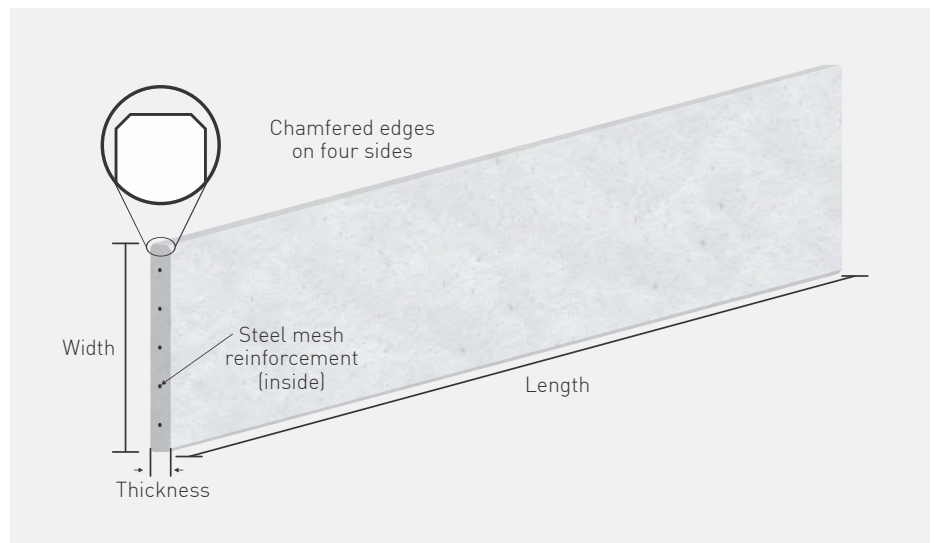


Fig. 1: Hebel® Fence Panel.

### Dimensions

**Length:** 8, 10 ft

**Width:** 24 in

**Nominal Thickness:** 2 and 3 in

## 2 Design Considerations

- Hebel® Fence Panels shall be designed in order to comply with safety and serviceability requirements as specified by ACI 523.4R09.
- Wind speed can be up to 80 mph for a 2" thick Hebel® Fence Panel and up to 100 mph for a 3" thick Hebel® Fence Panel.
- Nominal heights for Hebel® Fence System should be 6 ft and maximum 8 ft.
- Hebel® Fence system requires posts with grooves to insert Hebel® Fence Panels. The minimum depth of groove should be 1 1/2".
- Post must be designed according to Local Building Code (see Post for Hebel® Fence System).
- Posts, postcaps and concrete bases are not supplied by Hebel®.
- Backer rod and caulking must be applied between the post groove and the Hebel® Fence Panel.

Characteristic	Unit	AAC-4 Class
Minimum Compressive Strength ( $f'_{aac}$ )	lb/in <sup>2</sup>	580
Nominal Density ( $F'_{AAC}$ )	lb/ft <sup>3</sup>	31
Design Weight <sup>(1)</sup>	lb/ft <sup>3</sup>	37
Module of Elasticity	lb/in <sup>2</sup>	295,000
Drying Shrinkage	%	< 0.02
Thermal Expansion Coefficient	1/ <sup>(1)</sup> K	$8 \times 10^{-6}$

<sup>(1)</sup>Values consider material's moisture content.

Table 1. Design Properties.

Design Weight					
Thickness <sup>(1)</sup>		Length	Design Weight <sup>(2)</sup>		Area per Piece
in	in*		lb/ft <sup>2</sup>	lb/piece	
2	1.969	8	6.14	98.4	16
3	2.953	8	9.22	147.7	16
3	2.953	10	9.22	184.6	20

\* Exact dimension. <sup>(1)</sup> Nominal dimension. <sup>(2)</sup> Values consider material's moisture content.

Table 2. Hebel Fence Design Weight

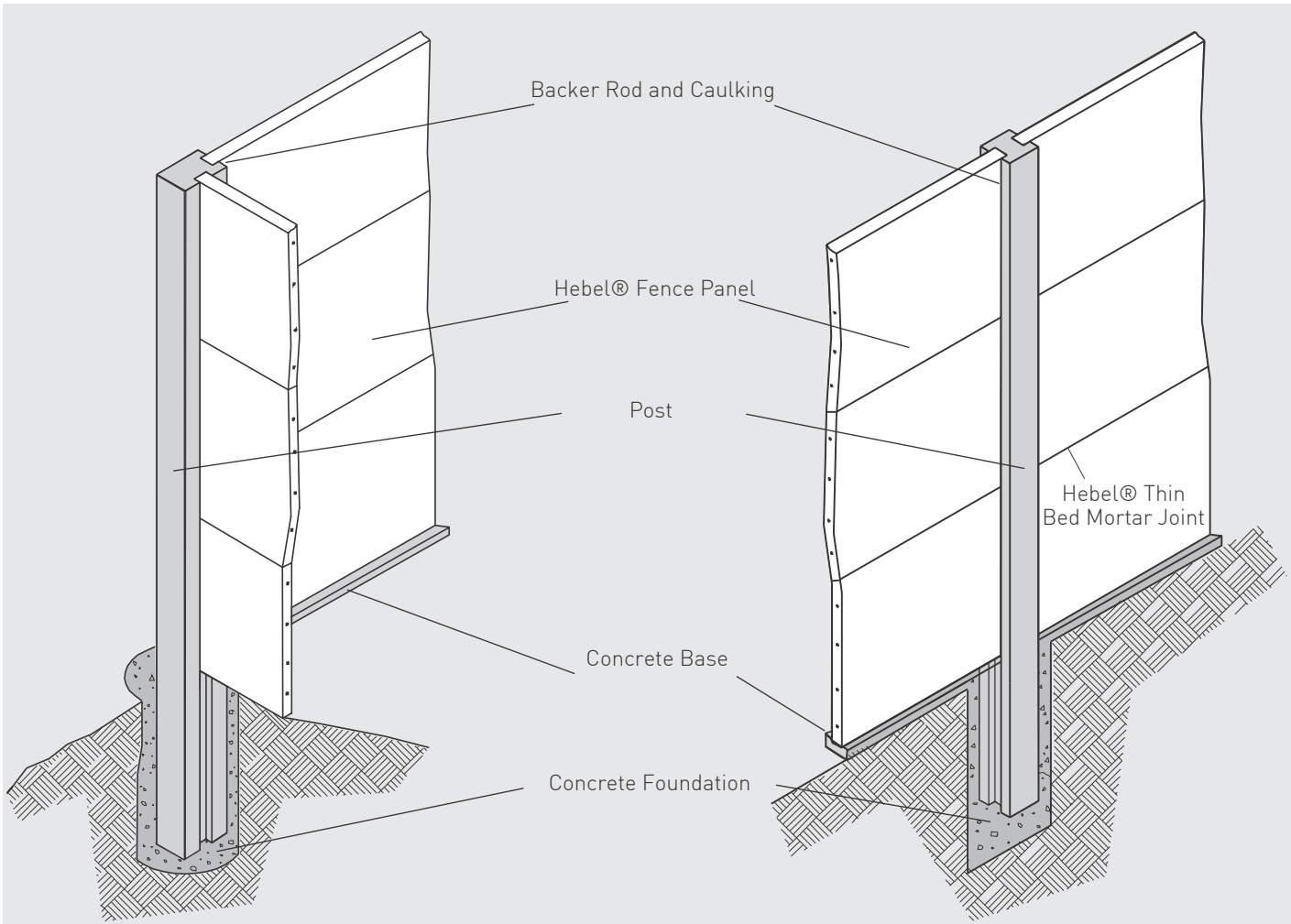


Fig. 2: Hebel® Fence System.

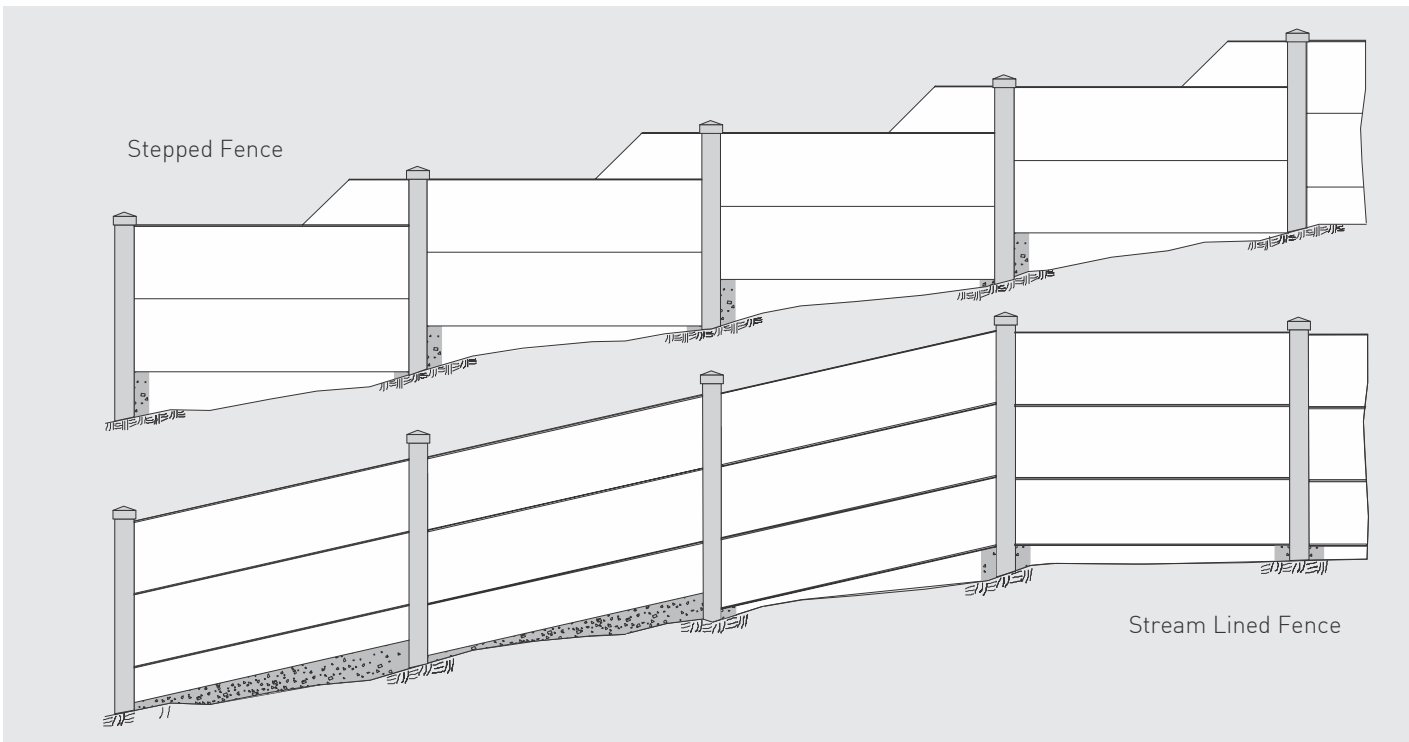


Fig. 3: Different Layouts Hebel® Fence Designs.





Fig. 4: Check Quantity of Hebel® Fence Panels and Post

## 3. Installation Guide

### 3.1 Previous Installation

Check fence layout and design. Decide, according to terrain slopes, if fence will be stepped following the contours of the land (see Fig.3).

Check if material quantity (Hebel® Fence Panels, posts and post caps) is correct (see Fig. 4).

Contact utility companies to insure that no underground utilities will be affected with fence construction.

Always follow on-site safety measures during construction.

### 3.2 Installation of Hebel® Fence

#### 1. Making of Hebel® Fence

Check for property marks. When property marks are not visible, you may call a surveyor. Mark location of the fence according to property marks.

When fence is to be located on a hillside with steep slopes or very irregular terrain, surveying equipment might be needed.

#### 2. Placing Posts

Identify level differences of terrain and determine the way that this will be compensated (stepped fence, etc.)

Posts must be plumbed (aligned vertically), and located exactly in-line.

#### Setting the Posts

Place posts into the ground and set them in concrete. Once post is in the hole concrete should be compacted using a tamping bar. Level and brace the post temporarily while concrete sets. Posts must have 1 1/2" height over fence to assure proper installation of postcaps.

#### Concrete Base - Optional

A concrete base may be installed before placing Fence panels. Drainage conditions should be assessed. Leave drainage paths if required.

#### 3. Preparation of Hebel® Thin Bed Mortar

Hebel® Thin Bed Mortar is mixed in a plastic bucket, adding water (see instructions on the bag) using a stirrer in a power drill. Use brush to clean the joint surface before mortar application.

#### 4. Ready to Install Hebel® Fence

a) While two people hold the panel on its sides, a third person helps, lifting it to slide it into post grooves.

b) When panel is inserted into posts, two people keep sliding the panel, holding it from its upper edge.

c) Once panel is in place, Hebel® Thin Bed mortar is applied on joint before installing second panel using a dull (large tip).

d) Wedge the panel temporarily with plastic or wood strips to adjust it into position (according to fence design).

e) Repeat procedure for subsequent rows of Hebel® Fence Panel. Care should be taken that panel joints are the same height throughout the fence.

f) Once all panels of one section have been placed, use dull (small tip) to place mortar on joints to make the appearance uniform.

g) Place bits of backer rod as wedges into joints between posts and panels and remove the plastic strips. Then apply mortar or stucco to cover wedges.

#### 5. Cutting of Hebel® Fence Panels on Site

If needed, for cutting Hebel® Fence Panels on-site, follow the procedure shown below:

a) Prepare a flat surface for site cutting.

b) Check for dimensions of cuts to be performed. Along its length, panel can be cut in half (1 ft wide) at most.

c) Proceed with panel cutting.

d) Place anticorrosive paint at reinforcing bars tips.

#### 6. Post Caps - Optional

Post caps are placed on top of posts (see posts for Hebel® Fence System).

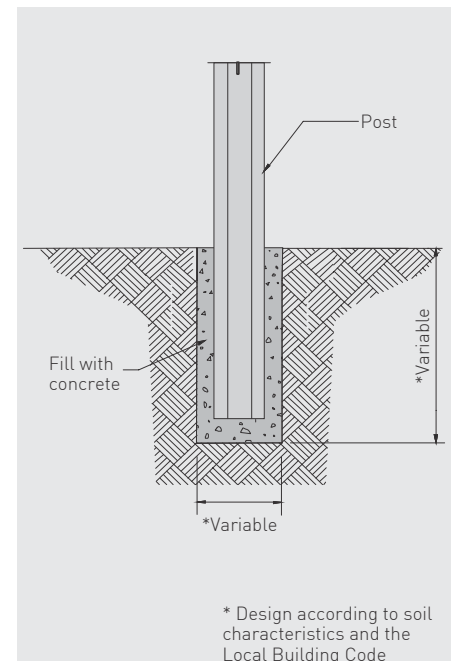


Fig. 5 Post Foundation Detail.



Cast in Place Base



Precast Base



Fig. 6 First Course of Fence Panels.

## 7. Gates, Ornaments and Other Fixtures

Gate installation must be made between gate posts. Gate posts have special preparations to attach gates. Fixtures like lamps, signs, etc. should be placed preferably over posts. For placing fixtures over Hebel® Fences, call Litecrete, Inc., for technical support.

## 8. Surface Patching

Use Hebel® Repair Mortar to patch chips, breaks and other imperfections on the surface of the Hebel® Fence Panels.

Hebel® Repair Mortar is mixed in a plastic bucket, adding water (see instructions on the bag) using a stirrer in a power drill or by manual means (depending on quantity to be used). It is applied using a spatula.

## 9. Finishes

Although Hebel AAC., has a very low water penetration rate, as with any concrete material it is recommended to apply a finish coat as elastomeric paint or acrylic based render. Stucco and other types of renders are available through Hebel.

## 10. Installation Requirements

### Tools:

- Plastic bucket
- Stirrer for power drill
- Shovel
- Mason's level
- Brush
- Tape measure (50-100 ft)
- Sanding float
- Plastic edger
- Hammer ax
- Scissors for unpacking
- Claw hammer
- Spatula
- Level line
- Plumb bob
- Chalk line
- String line



Fig. 7 Hebel® Fence Panel Installation.

### Equipment:

- 12" auger
- Posthole digger
- 2 stepladders (2 or 3 steps)
- Heavy digger bar
- Tamper bar
- Circular saw with 8 1/4" metal or diamond blade for Hebel® Fence Panel 3" thick and 7 1/4" metal or diamond blade for Hebel® Fence Panel 2" thick 1/2" power drill
- 2 saw horses
- Dull w/small and large tip
- Safety gear (belts, goggles, dust mask, gloves)

### Additional Materials Needed, Available Through Litecrete, Inc

Hebel® Thin Bed and Repair Mortar



Fig. 8 Stepped Fence Layout.



Fig. 9 Gate in Hebel® Fence System.

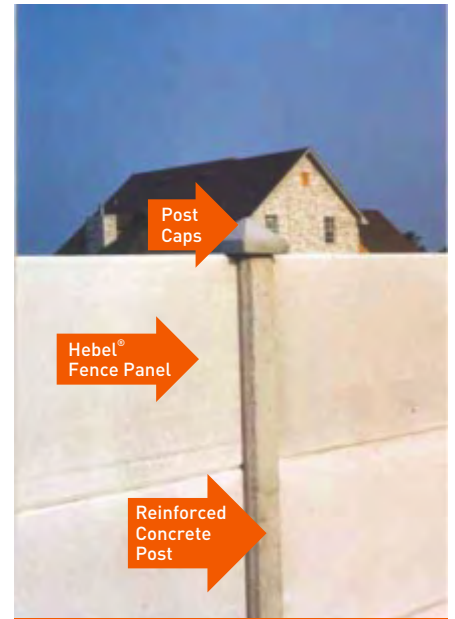


Fig. 11 Typical Post in Hebel® Fence Construction.

**Additional Materials Needed, Not Available Through Litecrete, Inc**

- Posts
- Post caps
- Concrete Base
- Backer rod
- Chalk
- Anticorrosive paint
- Plain concrete (f2 or 3 ksi)
- 1/16" and 1/4" acrylic sheet

Use design methods, in accordance with nationally recognized organizations (American Concrete Institute, ACI; American Society of Civil Engineers, ASCE).

Concrete posts or steel posts can be used for Hebel® Fence System. Fig. 12 shows typical concrete post sections.

## 4 Posts for Hebel® Fence

### 4.1 General Considerations

Posts are used to provide support for Hebel® Fences and must be capable of withstanding wind loads applied upon them; while satisfying local, regional and national codes, such as International Building Code, local Building Code, etc.

### 4.2 Post Caps

Used as a decorative element over posts (see Fig. 13).

The post cap should be fixed or glued, as determined by the post material.

**Note:** For more technical information about posts and bases, call Litecrete, Inc.

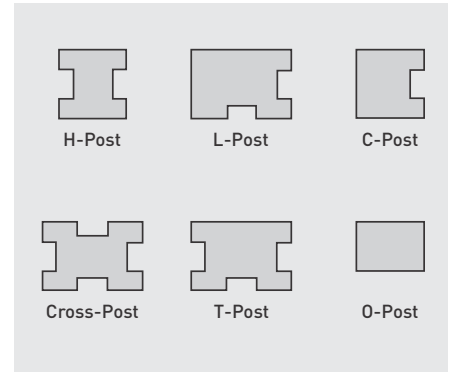


Fig. 12 Typical Concrete Post Sections.

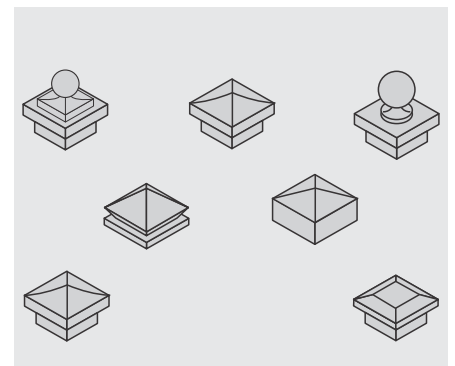


Fig. 13 Different Types of Post Caps.



Fig. 10 Finished Hebel® Fence System.

"Please refer to our SDS for further information":

Caution: Use safety gear: Hard hat, gloves, dust mask and goggles to avoid excessive inhalation of dust and protection of the eyes when handling Hebel® Fence Panels.



# Contact us

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