



Change  
**Channels**

go with the  
**FLOW**



SECTION A-A

12" width

**POLYCAST**



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# WHO WE ARE

## Unpredictable Environments. Damaging Conditions.

### Our Competitive Edge

Through its distinguished POLYCAST® brand, Hubbell has harnessed one of its competitive strengths and offers a full line of trench drain systems to meet customer needs.

Well versed in delivering the utility industry with reliable solutions for unpredictable, damaging environments, Hubbell brings that same level of expertise to the civil construction and transportation industries with a superior drain system – POLYCAST®.

Hubbell Power Systems employs over 3300 people worldwide and leads the way in the production of products and components for the utility industry,

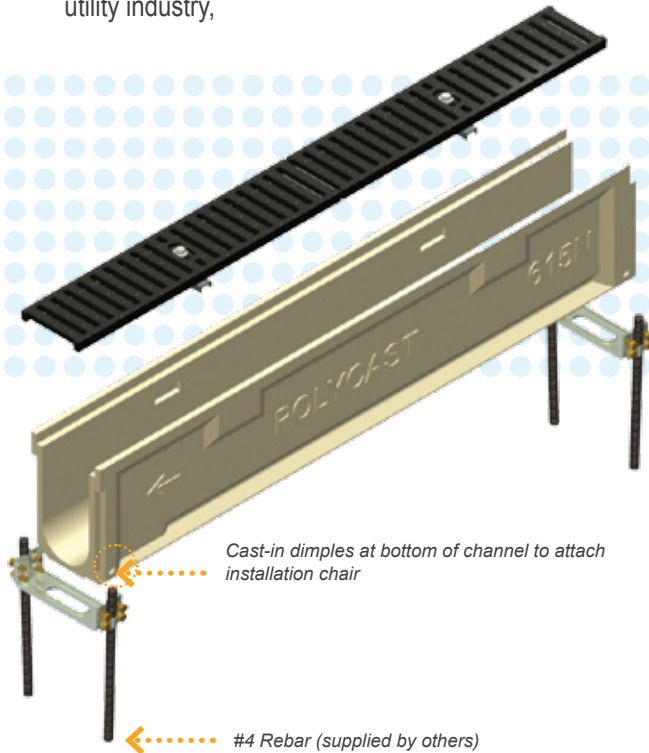
### The 20% Advantage

48" vs. 1 Meter Channel Lengths

- Fewer Channels
- Fewer Joints
- Faster Installation
- Fewer Problems

### A Superior Drain System

Based in Lenoir City, TN, Polycast was formed in 1981 and specializes in polymer concrete and fiberglass drainage systems for a variety of both indoor and outdoor applications. As the system of choice, Polycast installations include professional sports stadiums, airports and numerous industrial facilities around the country.



The smooth interior finish of Polycast drains assures complete drainage

### Polycast. Proven Superior.

Made of a high strength, chemical resistant, composite material, Polycast drains offer a high degree of chemical resistance and have a water absorption value of less than one percent (ASTM C140). In short, Polycast Polymer Concrete is more than four times stronger than ordinary Portland Cement Concrete, simplifies installation and lowers overall costs.

- Ideal for indoor and outdoor applications
- Rapid drainage and durability
- Resistant to freeze/thaw cycles (ASTM C666)
- Offers superior versatility with 24" and 48" components
- Polycast FP Series and 3000 Series fiberglass drains are made of lightweight channels and offer flow rates of 3000 GPM to 6800 GPM

### Applications

#### COMMERCIAL

- Vehicle Maintenance
- Airports
- Highway, Roads, Curbs
- Schools

#### INDUSTRIAL

- Manufacturing
- Chemical Plants
- Bottling
- Food Processing (USDA Approved)

# CHOOSING A SYSTEM

## Choosing A Drain System

### For Your Application...

There are a multitude of applications that warrant a trench drain system and it's often difficult to determine the best product for a given application. Although seemingly insignificant, choosing components for your drain system deserves careful consideration as they can determine the life and effectiveness of your linear drain. We can help with your product selection.

The following section will help determine which POLYCAST® Trench Drain System best meets your specific needs and includes such factors as rainwater run-off, grade, wheel loadings and pedestrian traffic. Many of the topics discussed in this section relate to all modular and pour-in-place systems.

### Hydraulic Capacity

Determine the amount of liquid that will be flowing through the trench drain in a given time period.

- /// Calculate Flow
- /// Site Conditions
- /// Fluid Characteristics



### Application

Choose a load rating for the area for which the grate will be installed. Environmental factors and types of traffic should be considered to ensure long life of the trench drain system.

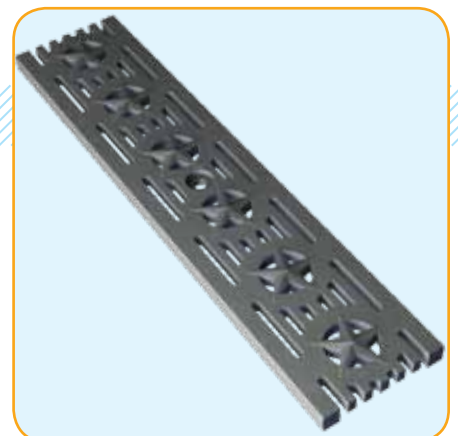
- /// Load Rating
- /// Wheel Types / Edge Protection
- /// Material Properties



### Job Specific

Specific job requirements will often play a role in channel and grate selection. This could include everything from decorative grating options to grate lockdowns and legal requirements.

- /// Aesthetics
- /// ADA & Pedestrian Safety
- /// Country of Origin Requirements

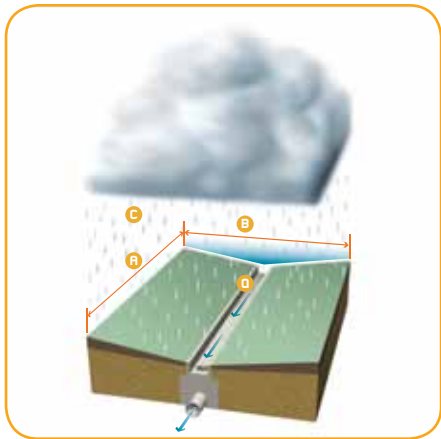


HOW TO CHOOSE

# CHOOSING A SYSTEM

## Hydraulic Capacity

To ensure that the correct trench drain is selected for each site, several factors should be evaluated. The most important of these is hydraulic performance, or the ability of the drain to evacuate water without flooding.



### Calculate Flow

The catch basin or drain outlet must be sized to meet the maximum amount of water to be evacuated from the site.

This model is designed for rainfall run-off, but can be easily converted to industrial or overflow drainage.

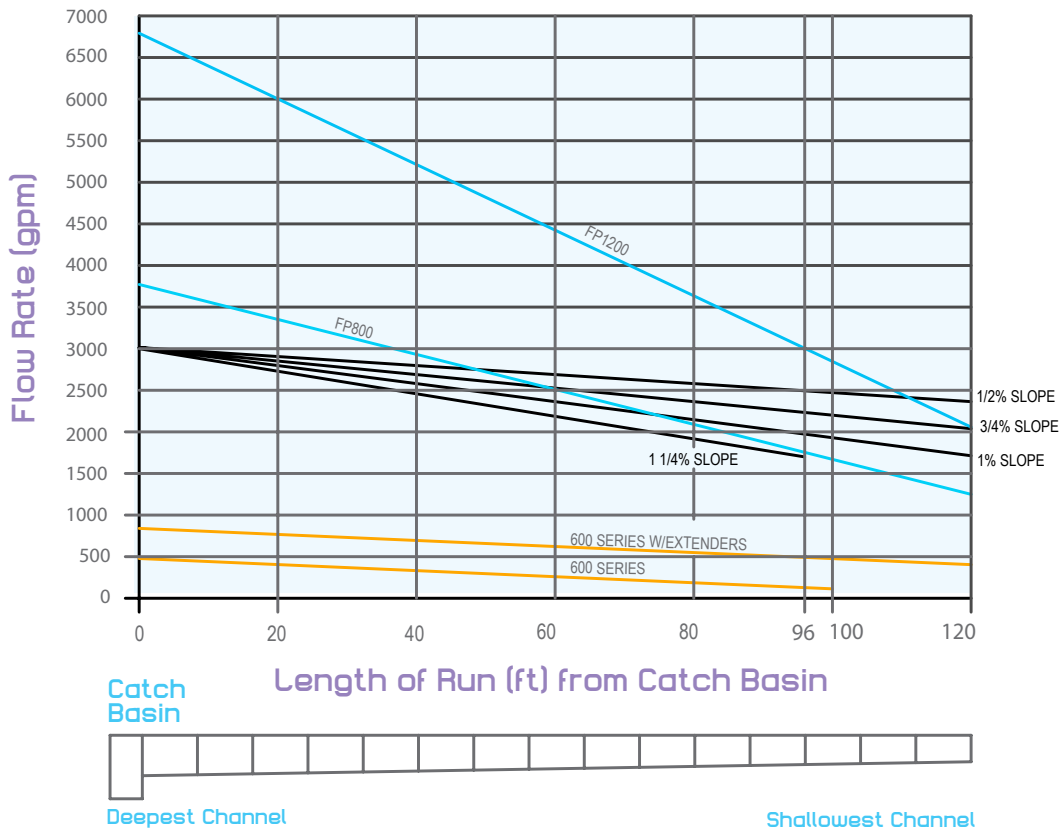
To calculate flow (Q) in gpm, the following parameters are needed:

Drainage area = length x width (A x B)

Rainfall intensity in inches per hour (C)

$$Q \text{ (GPM)} = \frac{\text{Area (AxB)} \times \text{Rainfall (C)}}{60 \text{ (minutes)} \times 1.6 \text{ (conversion to gallons)}}$$

### Flow capacity for POLYCAST® drains



# CHOOSING A SYSTEM

## Site Conditions

The specific conditions of each site will affect the performance of a drain system. These factors should be taken into account on a case-by-case basis and may include complex slopes, interference with underground structures, piping types, and landscaping.

## Grade & Slope

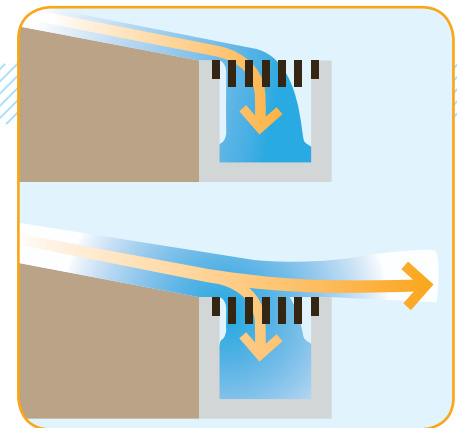
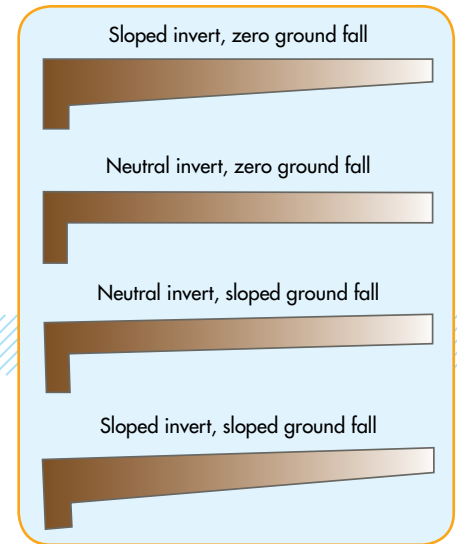
POLYCAST® Trench Drains are available in both sloped and non-sloped designs.

When the trench drain is installed in an area where slope already exists, a neutral or smaller drain design may be used to net similar performance. If too much slope is present, flooding may occur due to the wave effect or drain outlet limitations.

## Sheeting

Sheeting over drain grates occurs when there is too much liquid or when the liquid is at too high of a velocity to fully enter the drain grate. Generally the trench drain will reach its maximum capacity before sheeting over the grates becomes an issue. This can be an important factor to consider when using perforated or intricate decorative grate designs.

Grate flow inlet charts are located in the technical section of this catalog starting on page 29.



HYDRAULIC CAPACITY

## GR8 TIPS

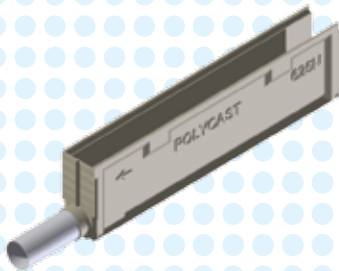
We Take the Guesswork Out

Rainfall: Rainfall frequency and intensity charts can be found at: [www.noaa.gov](http://www.noaa.gov).

# CHOOSING A SYSTEM

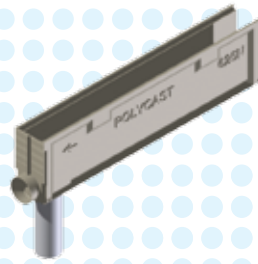
## Outlet Type

The type of outlet for a drain will greatly affect the drain's performance. Whether using a pipe outlet or a catch basin, the outlet should be sized to handle greater or equal flow capacity of the trench drain. This will ensure that flooding does not occur.



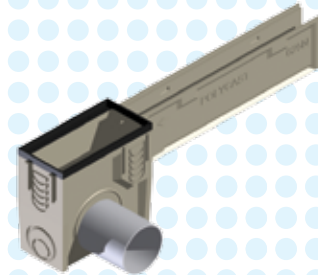
**End Pipe Outlet**

Standard end pipe outlet. Lowest capacity.



**Bottom Pipe Outlet**

Vertical pipe outlet. Offers more capacity due to gravity.



**Catch Basin Outlet**

Catch basins allow trash baskets to collect debris and offer the most capacity as larger pipes can be used.

## Fluid Characteristics

Not all trench drains carry run-off water. When used in chemical plants or industrial facilities, special care should be taken to ensure that the trench drain is appropriate for the specific application.

## Chemical Resistance

For highly corrosive drainage situations, POLYCAST® manufactures drainage components with DERAKANE® 470 Vinyl Ester resin. Trench drains may also be ordered with Vinyl Ester fiberglass grating and corrosion resistant locking devices.

Vinyl Ester drain systems are ideally suited for handling most highly corrosive fluids. These are ideal for use in areas where EPA pollution control requirements dictate that manufacturers concentrate and collect these corrosive materials.

A full chemical application guide is available in the technical section of this catalog starting on page 66.

## Temperature

Certain applications require a liquid at elevated temperatures be drained into containment areas. These applications may include industrial plants, breweries, and food processing facilities. All POLYCAST drain systems are rated for 120°F continuous service. When higher temperatures are required, vinyl ester channels may be substituted which are rated for 180°F continuous service.

## GR8 TIPS

### We Take the Guesswork Out

**Choke Points:** Outlet pipes must be capable of more flow capacity than the trench drain system or the whole system can back up.

# CHOOSING A SYSTEM

## Applications

The types of traffic a drain will be subjected to determines the style of grating and edge protection to be used. Trench drains are subjected to forces in various directions once installed, which can make grate selection challenging. POLYCAST® products adhere to third party application standards to provide peace of mind to every customer.

### Load Ratings

POLYCAST grates are designed to meet load ratings as defined by DIN 19580. This well recognized, international standard classifies potential drainage applications into 6 classes. These classes take into account both proof loading and catastrophic loads to ensure the user's product is selected correctly and is reliable.

#### LOAD RATINGS

- DIN Class A - 3,372 lbs - 15 kN**  
Residential, pedestrian, and cyclist traffic
- DIN Class B - 28,100 lbs - 125 kN**  
Sidewalks, parking lots, and car parking decks
- DIN Class C - 56,200 lbs - 250 kN**  
Curb sides, highway shoulders, and parking areas
- DIN Class D - 89,920 lbs - 400 kN**  
Trafficked sections of roads and highways
- DIN Class E - 134,800 lbs - 600 kN**  
Industrial areas, forklifts traffic, ports, and dock sides
- DIN Class F - 202,320 lbs - 900 kN**  
Aircraft runways, docks, and high impact wheel loads



### Wheel Types / Edge Protection

Hard wheel traffic such as forklifts can cause unprotected drain edges to deteriorate. This exposed edge helps hold grates in position and transfers the loads into the surrounding concrete. If this edge fails, the grate can be allowed to move, causing channel cracking and eventually failure.

### Material Properties

POLYCAST offers both metal and plastic edge options. These edge rails form a mechanical bond into the surrounding concrete and are designed to withstand the long term abuse of traffic, snow plows, and forklifts. Edge protection is recommended for any application of Load Class D or greater.

# CHOOSING A SYSTEM

## Job Specific

### /// Aesthetics

The grate is the most visible portion of any trench drain system. POLYCAST decorative grates can be used to mimic or even enhance the surrounding landscape. Use stainless steel edge rails to gain an even more dramatic border.

### /// ADA & Pedestrian Safety



#### ADA Grates

The Americans with Disabilities Act of 1990: Section 4.5.4

“Where grates are used within walking surfaces, the open slots should be no greater than 0.5 inches (12.7mm) wide in one direction. Where the length of the slot is greater than 0.5 inches, the opening should run perpendicular to the main direction of traffic.”



#### Heel Resistant Grates

ASME A112.6.3: Section 7.12 Heel Resistant Strainers and Grates

“A grate designed to resist entry of high-heeled shoes, in which the maximum grate hole size in least direction shall be 5/16 in. (8mm).”



#### Bicycle Safe Grates

Australian Standard AS 3996 – 2006 Clause 3.3.6

Defines maximum slot dimensions for “Bicycle Tire Penetration Resistant” grates.

### /// Country of Origin Requirements

Certain construction projects require that some materials be manufactured within the United States. If country of origin certification is required, details must be noted and discussed at the time of order.