POLYCAST®
3621 Industrial Park Drive
Lenoir City, TN 37771
Phone: 800-346-3061
Fax: 865-986-0585
Email: hpsliterature@hubbell.com
www.polycastdrain.com

POLYCAST® Trench Drain Systems

600 Series Specification

Hubbell Specification 120111

December 2011

Notes:

This product specification is written according to the Construction Specifications Institute (CSI) 3-Part Format. The section must be carefully reviewed and edited by the project Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the drawings. “Specifier Notes” precede section content and should be deleted in the final copy of the specification. Optional text is indicated by brackets [ ]; delete optional text in final copy of specification as necessary.

This specification details precast trench drains systems marketed under the Polycast® trade name, including presloped and neutral channels, catch basins, grates, frames and accessories. These products are manufactured by Hubbell Power Systems, Inc.

Revise the section number and title below to suit project requirements, specification practices and content. Refer to CSI for other section numbers and titles.

SECTION 33 44 00

STORM UTILITY WATER DRAINS

(PRECAST TRENCH DRAIN SYSTEMS)

PART 1 GENERAL

1.01 SECTION INCLUDES

A. Selection, necessary work and installation of modular precast trench drain systems at locations shown on site drawings.

1.02 RELATED SECTIONS

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with direct references to this section.

A. Division 03 Section: Concrete Forming.

B. Division 05 Section: Metal Gratings.

C. Division 22 Section: Facility Storm Drainage.

D. Division 31 Section: Earthwork.

E. Division 33 Section: Storm Drainage Utilities.

F. Division 33 Section: Storm Drainage Structures.

1.03 SYSTEM DESCRIPTION

Specifier Notes: Edit the following list of related sections as required for the project. List other sections with direct references to this section.

A. System requirements: Provide a trench drain system of prefabricated modular components. The system can incorporate a frame when required to carry the specified load.

B. Gratings shall comply with the load requirements of AASHTO or DIN/EN loading specifications as required by the Engineer.

C. Integral frames which extend onto the concrete slab shall include consolidation vent ports which help minimize air entrapment under the frame when proper vibration techniques are used.

D. Frames which extend onto the concrete slab shall include anchoring studs which secure the frame into the surrounding concrete. Anchoring studs shall be a minimum of 0.5 in (6 mm) in

H. Fiberglass systems shall either include surface veil or gel coat on the media bearing surface with a UV inhibitor package.

1.04 REFERENCES

I. AASHTO M306 - Standard Specification for Drainage, Sewer, Utility and Related Castings.

J. American Society of Mechanical Engineers (ASME):
1. ASME A112.6.3, Section 7.12 Heel Resistant Strainers and Grates

K. The Americans with Disabilities Act (ADA) of 1990: Section 4.5.4 - Gratings

L. ASTM International (ASTM):
1. ASTM A 36 - Standard Specification for Carbon Structural Steel
2. ASTM A 48 - Standard Specification for Gray Iron Castings
3. ASTM D 536 - Standard Specification for Ductile Iron Castings
4. ASTM D 543-06 - Standard Practices for Evaluating the Resistance of Plastics to Chemical Reagents
5. ASTM D 570-05 - Standard Test Method for Water Absorption of Plastics
6. ASTM D 635-06 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning Plastics in a Horizontal Position
7. ASTM D 695 – Compressive Properties of Rigid Plastics
8. ASTM D 2444-05 - Standard Test Method for Determination of the Impact Resistance of Thermoplastic Pipe and Fittings by Means of a Tup (Falling Weight)

M. Australian Standard AS 3996 – 2006 Claus 3.3.6 - Access covers and grates

N. Deutsches Institut fur Normung e.V. (German Standards Institute) (DIN):
1. DIN EN 1433:2005, Section 9.1.3; Drainage channels for vehicular and pedestrian areas – Classification, design and testing, marking and evaluation of conformity

O. Federal Aviation Administration (FAA): 150-5320-6E – Airport Pavement Design & Evaluation, Appendix 3

1.05 SUBMITTALS

Specifier Notes: The section below includes submittal of data relevant to the trench drain system which is to be furnished by the Contractor. Edit this section as necessary to comply with project requirements.

A. Submittals are to comply with Conditions of the Contract and Section 01330 - Submittal Procedures.

B. Product Data: Submit product data and installation instructions including manufacturer’s data sheets for specified products.

C. Product Drawings: Submit shop drawings showing layout, profiles and product components, including anchorage, accessories, finish colors, patterns and textures.

A. Ordering: Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

B. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.

C. Storage and Protection: Store materials protected from exposure to harmful weather conditions and at temperature and humidity conditions recommended by manufacturer.

D. Handling: Protect materials and finish from damage during handling and installation

1.07 PROJECT CONDITIONS

A. Field Measurements: Verify actual measurements/openings by field measurements before fabrication; show recorded measurements on shop drawings.

1.08 WARRANTY

A. Project Warranty: Refer to Conditions of the Contract for project warranty provisions.

B. Manufacturer's Warranty: Upon request, submit for project acceptance, manufacturer's standard warranty document executed by authorized company official.

PART 2 PRODUCTS

2.01 MANUFACTURER

Specifier Note: Retain article below for proprietary method specification. Add product attributes, performance characteristics, material standards, and descriptions as applicable. Use of such phrases as "or equal" or "or approved equal" or similar phrases may cause ambiguity in specifications. Such phrases require verification (procedural, legal and regulatory) and assignment of responsibility for determining "or equal" products.

A. Manufacturer: Hubbell Power Systems, Inc.
3621 Industrial Park Drive
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Fax: (865) 986-0585
Website: www.polycastdrain.com

2.02 MATERIALS

Specifier Notes: Sections below describe Polycast Trench Drain Systems. Edit this section as necessary to suit project requirements and specifier practice.

[DG0675 polyethylene, longitudinal, ADA - Class A – per DIN / EN 1433.]
[DG0646 galvanized steel, perforated - Class A – per DIN / EN 1433.]
[DG0657 stainless steel, perforated - Class A – per DIN / EN 1433.]
[DG0645 galvanized steel, solid - Class A – per DIN / EN 1433.]
[DG0667 stainless steel, solid - Class A – per DIN / EN 1433.]
[DG0644 fiberglass bar grate - Class B – per DIN / EN 1433.]
[DG0644SP, fiberglass, bar grate - Class C – per DIN / EN 1433.]
[DG0646R galvanized steel, perforated - Class C – per DIN / EN 1433.]
[DG0657R stainless steel, slotted - Class C – per DIN / EN 1433.]
[DG0640R galvanized steel, slotted - Class C – per DIN / EN 1433.]
[DG0647R stainless steel, slotted - Class C – per DIN / EN 1433.]
[DG0641 gray iron, slotted - Class C – per DIN / EN 1433.]
[DG0692 ductile iron, deco, Patriot - Class C – per DIN / EN 1433.]
[DG0693 gray iron, deco, Abbott - Class C – per DIN / EN 1433.]
[DG0694 ductile iron, deco, Spiral - Class C – per DIN / EN 1433.]
[DG0695 ductile iron, deco, Cobblestone - Class C – per DIN / EN 1433.]
[DG0641D ductile iron, slotted - Class D – per DIN / EN 1433.]
[DG0675HD ductile iron, ADA - Class D – per DIN / EN 1433.]
[DG0641S gray iron, solid - Class D – per DIN / EN 1433.]

7. Grate Hold-Down Device: [DA0642 galvanized steel] [DA0642S stainless steel] [DA0642B galvanized steel] [DA0642F stainless steel].
8. Grate Load Class: [Class A – 3,372 lb (15 kN) per DIN / EN 1433.]
   [Class B – 28,100 lb (125 kN) per DIN / EN 1433.]
   [Class C - 56,200 lb (250 kN) per DIN / EN 1433.]
   [Class D - 89,920 lb (400 kN) per DIN / EN 1433.]
9. Catch Basins: [DP0650/DP0750] [DP0651/DP0751] [DP0653/DP0753].
10. Outlets: Channel bottom cut-out for 4 inch (100 mm) schedule 40 pipe.
11. Accessories: [Inlet/Outlet/Closing end cap with 4 inch (100 mm) schedule 40 outlet] [Inlet/Outlet end caps with 6 inch (150 mm) schedule 40 outlet] [DA0633 Channel Installation Alignment Chair].

2.03 PRODUCT SUBSTITUTIONS

Specifier Notes: Edit this section as necessary to suit project requirements. If substitutions are permitted, edit section.

A. Substitutions: No substitutions permitted.

A. Site Verification of Conditions: Verify substrate conditions, which have been previously installed under other sections, are acceptable for product installation in accordance with manufacturer's instructions.

B. Notify Architect and Engineer of conditions that would adversely affect installation or subsequent use. Do not proceed with installation until unsatisfactory conditions are corrected.

3.03 SITE PREPARATION

A. Surface Preparation: Ensure ground conditions are suitable. Poor site conditions require engineering advice.

B. Reinforcement: All reinforcement shall be in compliance with Concrete Reinforcing Steel Institute, as shown on the site drawings, and shall be firmly held in place during concrete placement.

C. The slab shall be designed to hold any applicable holds and shall be built with an appropriate factor of safety. The slab design and reinforcement shall be the sole responsibility of the Engineer and Contractor.

3.04 INSTALLATION

A. Install precast trench drain per manufacturer installation instructions at locations indicated on the site drawings.

B. Expansion, Construction and Control Joints: Site plans shall include the location of all concrete joints. The system shall not be used as an expansion, construction or control joint in the direction of flow. Expansion, construction and control joints oriented transverse to the direction of flow shall cross the system at a channel joint.

C. Precast Trench Drain System Installation: Ensure channels are surrounded on all sides by concrete of minimum 3000 psi (20,684 kPa) compressive strength. Check relevant installation section drawings for minimum suggested dimensions required.

D. Concrete Edge: Concrete shall be screeded and finished flush to the top surface of the trench drain system. No secondary edge-finishing tools shall be used.

E. Site Tolerances: [Specify applicable site tolerances for specified product(s) installation.].

F. Related Products Installation: Refer to other sections in Related Sections paragraph herein for related products installation.

3.05 FIELD QUALITY CONTROL

Specifier Note: Edit section below. Establish number and duration of periodic site visits with Owner and manufacturer and specify below. Consult manufacturer for services required. Delete section if field service not required.

3.06 CLEANING

A. Cleaning: Remove temporary coverings and protection of adjacent work areas. Repair or replace damaged installed products. Clean installed products in accordance with manufacturer's instructions prior to Owner's acceptance. Remove construction debris from project site and legally dispose of debris.

3.07 PROTECTION

A. Protection: Protect installed product and finish surfaces from damage during construction.

END OF SECTION