

# Trench Former<sup>®</sup> MD200<sup>™</sup> / 300<sup>™</sup>

## Trench Drain Forming System



**ROADS AND  
HIGHWAYS**



**COMMERCIAL AND  
INDUSTRIAL**



**SITES AND  
LOADING DOCKS**

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Today's Hydraulic Solutions

**ABT<sup>®</sup>, INC.**

Advanced Building Technologies

# The MD200™/300™ Technology

*The revolutionary MD200 and MD300 Grated Line Drain System provides technology needed but previously unavailable to satisfy today's trench drain requirements.*

## ***Engineering Design Flexibility***

The System can be configured for the Engineer's special flow and depth requirements. A large range of trench depths, slopes, and configurations provides the Engineer with greater flexibility for challenging projects. Additionally, the system is pre-engineered and factory fabricated reducing the potential for construction error in the field.

## ***High Strength Ductile Iron Grates***

Not only is the MD 200/300 advanced grate design attractive, it also provides strength and performance. MD grates provide the largest inflow area available in cast grates for 8 inch and 12 inch trenches. While lightweight, they exceed ***all*** AASHTO load ratings.

## ***Superior Rail Support Design***

MD200/300 does not utilize dissimilar materials (plastic, fiberglass, etc.) between the rails and concrete thus avoiding the potential for failure due to thermal expansion and contraction.



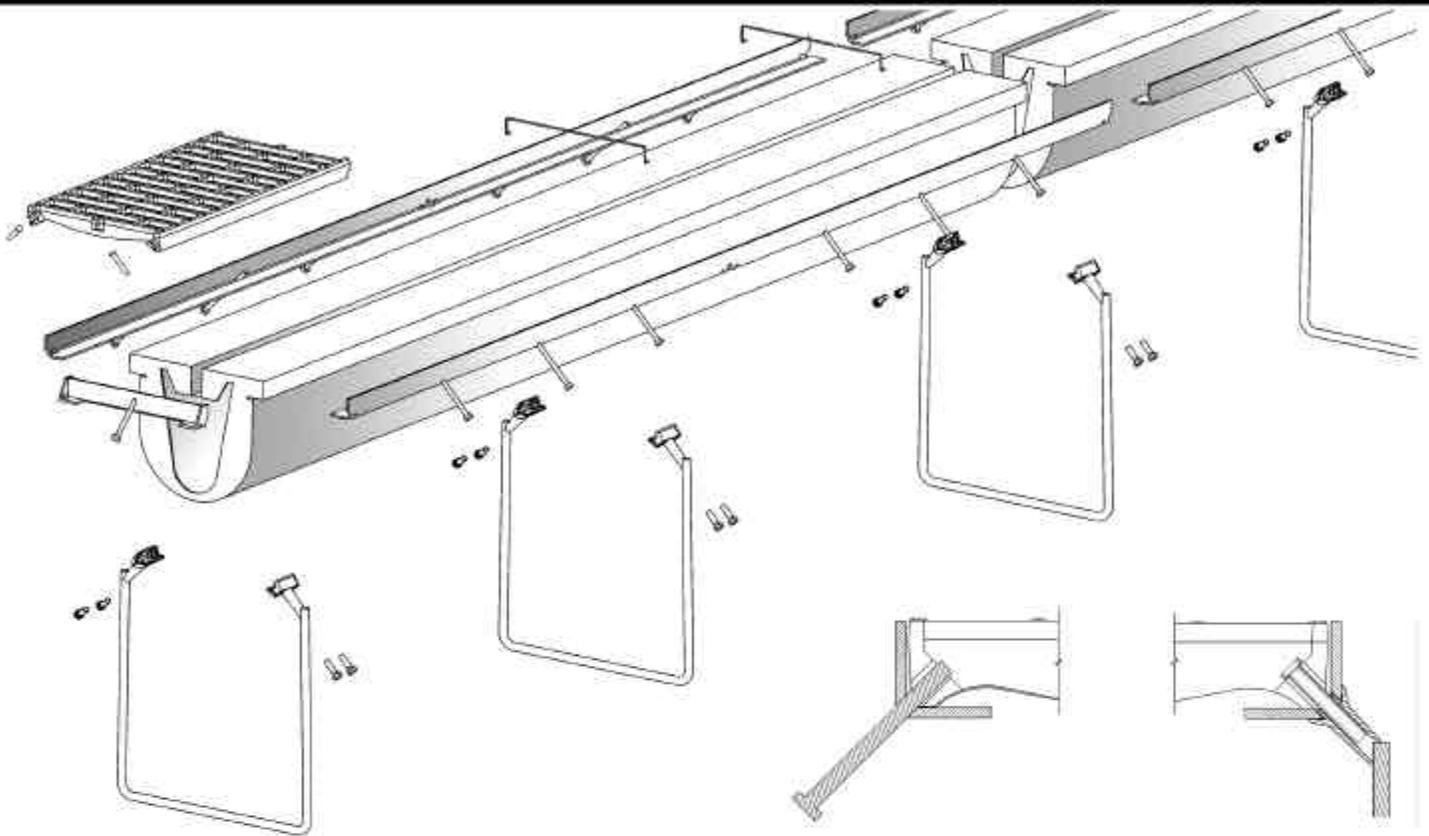
## ***Lower Cost per Q***

The MD200/300's lower Manning's roughness coefficient(n) increases trench hydraulic capacity and self-cleaning velocity which reduces trench size and cost.

## ***Improved Grate Retainer System***

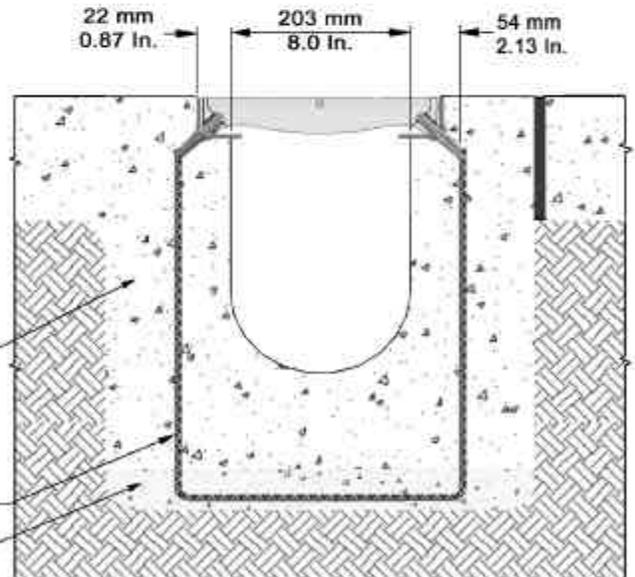
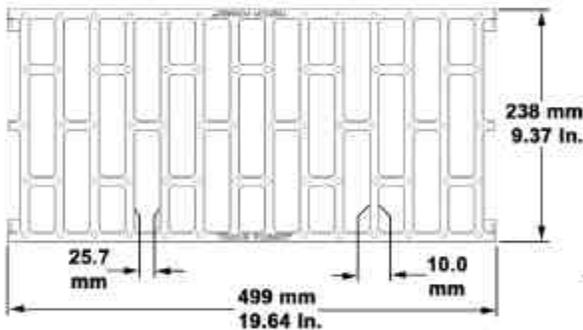
The MD200/300 patented system utilizes two removable stainless steel pins plus two fixed pins for every two grates providing both longitudinal and vertical grate retention. An average of only one pin must be removed per grate for easier construction and trench maintenance. Crossbars that interfere with trench access are not required. Additionally, this system eliminates concrete cracking from tensile stress caused by constrained thermal expansion and contraction in a rigid four-bolt system.

# MD200™ Technical Data



**GRATE RETAINER  
PIN - FIXED  
Galvanized**

**GRATE RETAINER  
PIN - REMOVABLE  
Stainless**



Concrete thickness, specifications, and reinforcement per structural engineer's design. (By other)

No Float Leg

No Float Anchor Slab

**TRENCH SECTION**

## DATA

- Grate Proof Strength - 40,000 Lbs.
- Grate Open Area - 0.47 Ft<sup>2</sup> / L. Ft. (60%)
- Vertical Grate Restraint - 1,000 Lbs.
- Longitudinal Grate Restraint - 6,000 Lbs.
- Rails - 1.25" x 1.25" x 0.125" A-36 Steel Angle
- Rail Bearing Area - 0.87 In.<sup>2</sup> / L. In. per rail
- For Hydraulic Capacity for specific conditions, Drawings, Specifications, and other information, go to [www.abtdrains.com](http://www.abtdrains.com)

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# **ABT<sup>®</sup>, INC. MD200 Series Trench Former**

## **Pre-Engineered Surface Drain Forming System**

### **Specification**

#### **SYSTEM**

##### Description:

1. A system of pre-engineered components for forming concrete cast-in-place surface drainage trenches, catch basins and utility chases.
2. System: consists of non-CFC expanded polystyrene (EPS) forms; embedded steel inlay rails; legs for alignment and float control; and grates with a non-rigid, longitudinal restrained, grate retention system.

#### **PRODUCT**

##### Components:

##### Forms:

1. Forming system: Pre-manufactured using non-CFC EPS foam.
2. Forms: pre-sloped or non-sloped form segments with 2.0 M (6.56 Ft) length standard and 1.0 M (3.28 Ft), or 0.5 M (1.64 Ft) lengths available.
3. Each segment is 203mm (8 In) wide trench with radius bottom and 241.5mm (9 1/2 In) grate seat width. Invert slope is per application requirement.

##### Rails:

1. Steel components: Post fabrication hot dipped galvanized or powder coated 31.75 mm x 31.75 mm x 3.18 mm (1.25 In x 1.25 In x 1/8 In) A-36 steel angle rails. Rail length 2.0 M (6.56 Ft) standard with 1.0 M (3.28 Ft), and 0.5 M (1.64 Ft) long available.  
No-float leg / alignment / grate retainer anchor lugs are located on 1.0 M (3.28 Ft) centers along the rails bisected by non-removable grate retaining / rail anchoring studs also on 1.0 M (3.28 Ft) centers.  
Standard headed concrete anchor studs bisect these members providing a rail-anchoring device every 250 mm (9.84 In).
2. Grate rails to provide a minimum of 0.87 square inches concrete bearing area per inch of trench length each side.
3. Grate retainers and rails to withstand the following loads:
  - a. Vertical up – 1,000 lbs
  - b. Transverse - 6,000 lbs
  - c. Longitudinal - 6,000 lbs
4. Grate retainer performance is not to degrade with service loads or thermal cycling.
5. Galvanizing: ASTM A123-89a
6. Steel: ASTM A 36/A36M-93a

##### Grates:

1. Ductile iron: ASTM A 536-84 (1993).
2. Grates to have a minimum of 0.47Ft<sup>2</sup> /L Ft open area and be flush with top of rails.
3. Grates to meet AASHTO M306-9 Grate/Manhole Proof Test.
4. Allowable tolerances: Setting plus/minus 1.5mm (1/16 In)

##### Form release:

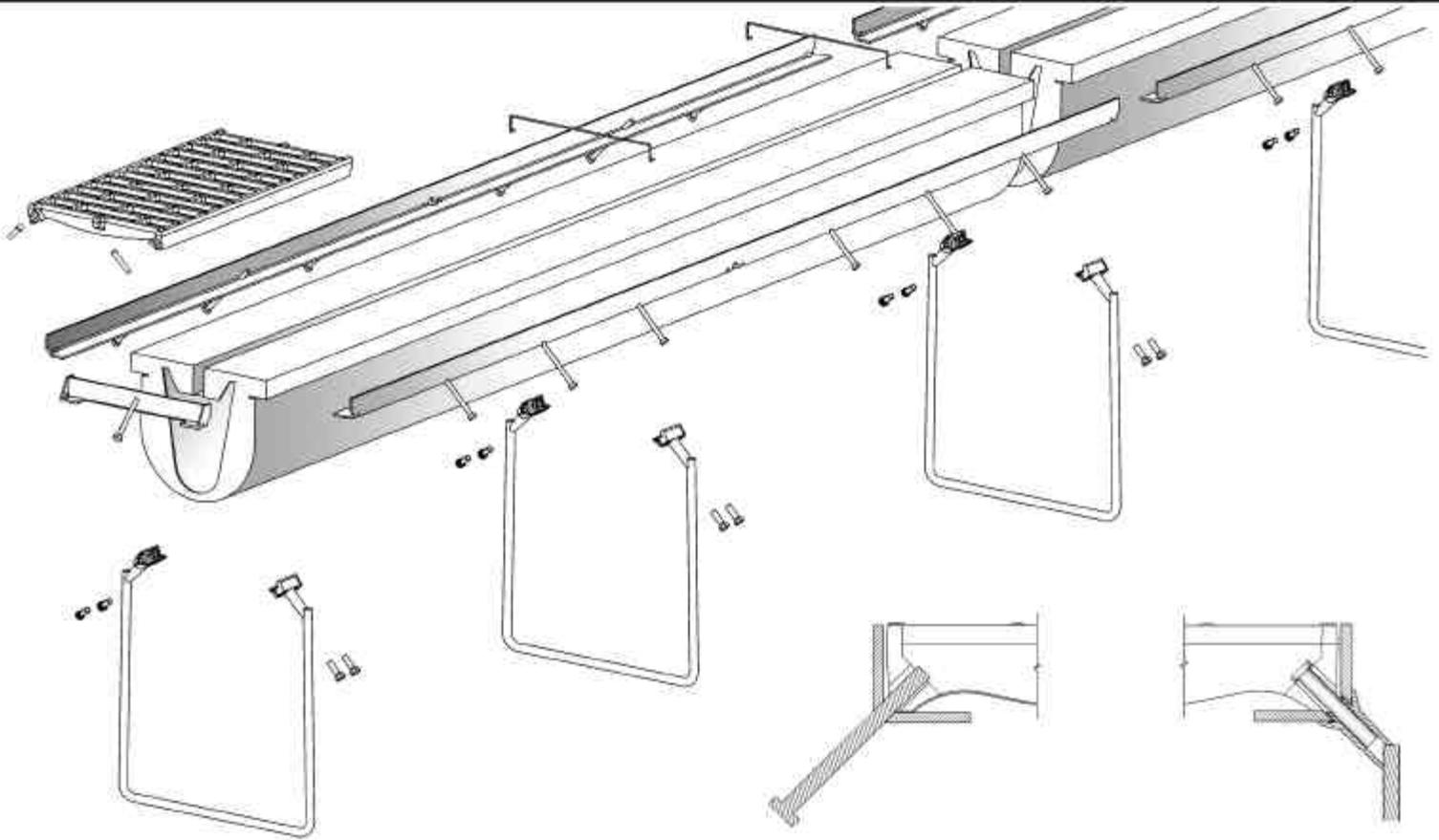
1. Non-petroleum based, which will not attack EPS.

#### **Acceptable manufacturers:**

##### Surface drain system:

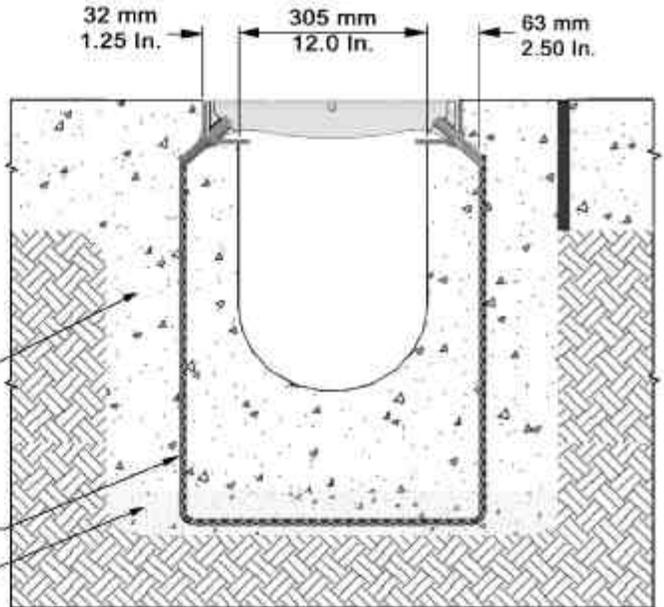
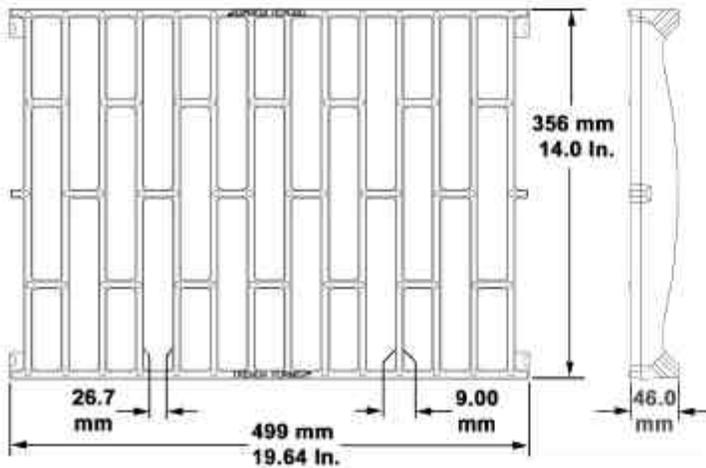
1. Trench Former MD-200: manufactured by ABT Inc, PO Box 837, 259 Murdock Rd. Troutman, NC 28166 800-438-6057.

# MD300™ Technical Data



**GRATE RETAINER  
PIN - FIXED  
Galvanized**

**GRATE RETAINER  
PIN - REMOVABLE  
Stainless**



**TRENCH SECTION**

## DATA

- Grate Proof Strength - 40,000 Lbs.
- Grate Open Area - 0.79 Ft<sup>2</sup> / L. Ft. (68%)
- Vertical Grate Restraint - 1000 Lbs.
- Longitudinal Grate Restraint - 6,000 Lbs.
- Rails - 2.0" x 2.0" x 0.188" A-36 Steel Angle
- Rail Bearing Area - 1.25 In.<sup>2</sup> / L. In. per rail
- For Hydraulic Capacity for specific conditions, Drawings, Specifications, and other information, go to [www.abtdrains.com](http://www.abtdrains.com)

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# ABT<sup>®</sup>, INC. MD300 Series Trench Former

## Pre-Engineered Surface Drain Forming System Specification

### SYSTEM

Description:

1. A system of pre-engineered components for forming concrete cast-in-place surface drainage trenches, catch basins and utility chases.
2. System: consists of non-CFC expanded polystyrene (EPS) forms; embedded steel inlay rails; legs for alignment and float control; and grates with a non-rigid, longitudinal restrained, grate retention system.

### PRODUCT

Components:

Forms:

1. Forming system: Pre-manufactured using non-CFC EPS foam.
2. Forms: pre-sloped or non-sloped form segments with 2.0 M (6.56 Ft) length standard and 1.0 M (3.28 Ft), or 0.5 M (1.64 Ft) lengths available.
3. Each segment is 305mm (12 In) wide trench with radius bottom and 356mm (14 In) grate seat width. Invert slope is per application requirement.

Rails:

1. Steel components: Post fabrication hot dipped galvanized or powder coated 50.8 mm x 50.8 mm x 4.76 mm (2.0 In x 2.0 In x 3/16 In) A-36 steel angle rails. Rail length 2.0 M (6.56 Ft) standard with 1.0 M (3.28 Ft), and 0.5 M (1.64 Ft) long available.  
No-float leg / alignment / grate retainer anchor lugs are located on 1.0 M (3.28 Ft) centers along the rails bisected by non-removable grate retaining / rail anchoring studs also on 1.0 M (3.28 Ft) centers. Standard headed concrete anchor studs bisect these members providing a rail-anchoring device every 250 mm (9.84 In).

Grate rails to provide a minimum of 1.25 square inches concrete bearing area per inch of trench length each side.

3. Grate retainers and rails to withstand the following loads:
  - a. Vertical up - 1,000 lbs
  - b. Transverse - 6,000 lbs
  - c. Longitudinal - 6,000 lbs
4. Grate retainer performance is not to degrade with service loads or thermal cycling.
5. Galvanizing: ASTM A123-89a
6. Steel: ASTM A 36/A36M-93a

Grates:

1. Ductile iron: ASTM A 536-84 (1993).
2. Grates to have a minimum of  $0.80 \text{ Ft}^2 / \text{L Ft}$  open area and be flush with top of rails.  
Grates to meet AASHTO M306-9 Grate/Manhole Proof Test.
3. Allowable tolerances: Setting plus/minus 1.5mm (1/16 In)

Form release:

1. Non-petroleum based, which will not attack EPS.

### Acceptable manufacturers:

Surface drain system:

Trench Former MD300: manufactured by  
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Troutman, NC 28166 800-438-6057.

Other quality drainage  
products by ABT, Inc.



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P. O. Box 837, 259 Murdock Road, Troutman, NC 28166  
800-438-6057 \* 704-528-9806 \* Fax: 704-528-5478  
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