

# PVC Piping Systems for HDD and Other Trenchless Applications



## TerraBrute™



M U N I C I P A L   S Y S T E M S

**AWWA C900 PRESSURE PIPE  
SYSTEMS FOR POTABLE WATER  
AND SEWER APPLICATIONS**

100mm – 300mm  
4" – 12"

**Tough Products for Tough Environments™**



**IPEX**  
Committed to Excellence

# TERRABRUTE™ TRENCHLESS:

## THE MISSING LINK IN YOUR TOTAL PVC PIPING SYSTEM

### IDEAL TERRABRUTE APPLICATIONS

#### BRIDGE CROSSINGS

TerraBrute's unique "steel ring-and-pin" joint design provides for easy installation in non-HDD applications where traditional butt fusion techniques would be difficult, such as this span of suspended pressure pipe installed beneath a busy roadway bridge.



#### ROAD CROSSINGS

TerraBrute is ideally suited for short drilling projects where existing structures cannot be disturbed – such as under busy highways, roads and intersections where you connect to PVC pipes.

#### URBAN CENTERS

Because TerraBrute can be assembled segmentally just before entering the borehole, projects take up less space in restricted urban areas, compared to the long strings of pipe typical with conventional PVC and HDPE installations.

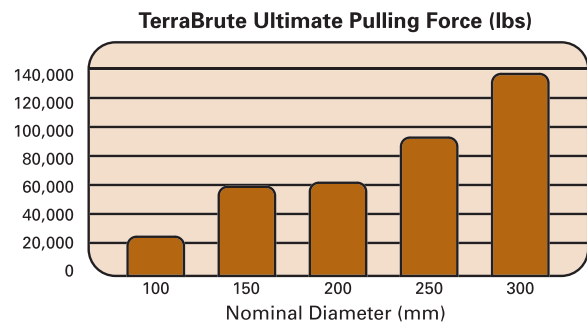
### FIRST ENGINEERED PVC PIPING SYSTEM FOR HDD

Introducing TerraBrute™ – the first AWWA C900 PVC pressure pipe system specifically engineered for Horizontal Directional Drilling (HDD) and other trenchless applications. Now you can standardize on PVC throughout your potable water and sewer infrastructure, whether you're using open-cut or trenchless methods. No more problems matching materials and couplings. No more butt fusion equipment headaches. No more surprises.

### HIGHEST PULL STRENGTH AVAILABLE

Developed in consultation with leading trenchless technology research experts, and rigorously tested in the field for two years, TerraBrute trenchless PVC pressure pipe easily withstands the high tensile and bending forces that occur during HDD and other types of trenchless installation.

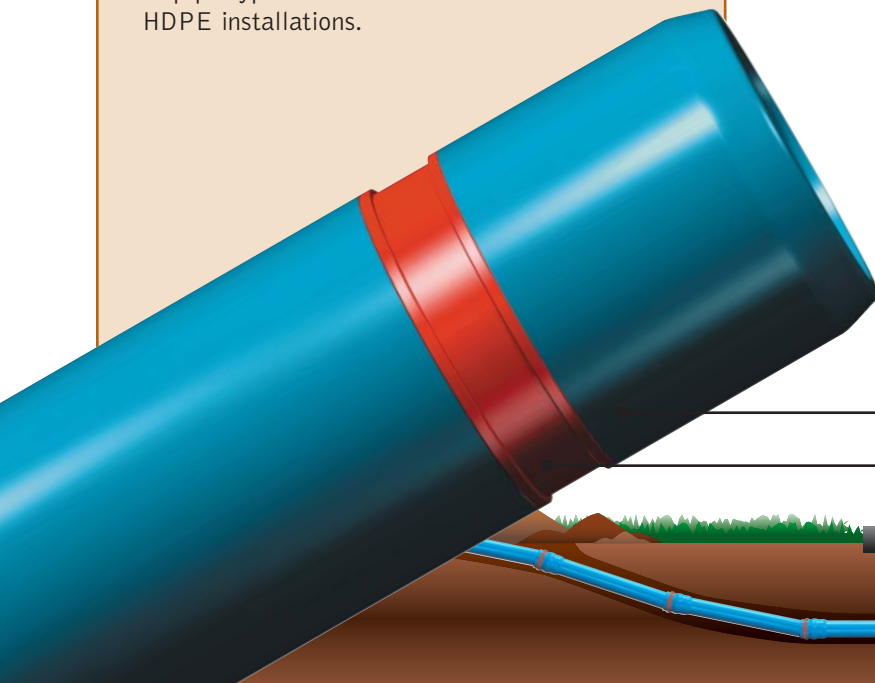
TerraBrute's "steel ring-and-pin" gasketed joint design (patent pending) outperforms all other restrained PVC pipe joints on the market, providing more than twice the pull strength of other HDD systems – up to 120,000 lbs. for 12" pipe. Unlike competing square-shoulder designs, TerraBrute's rounded bell shoulders slide by roots, rocks and other debris that can protrude into the borehole. And unlike HDPE, TerraBrute requires no relaxation time before installation of fittings or services.



*These ultimate load values were calculated using a semi-empirical design method derived at the University of Western Ontario and verified by laboratory testing. A safety factor of 2:1 should be applied to account for the combined tensile and bending loads associated with HDD applications.*

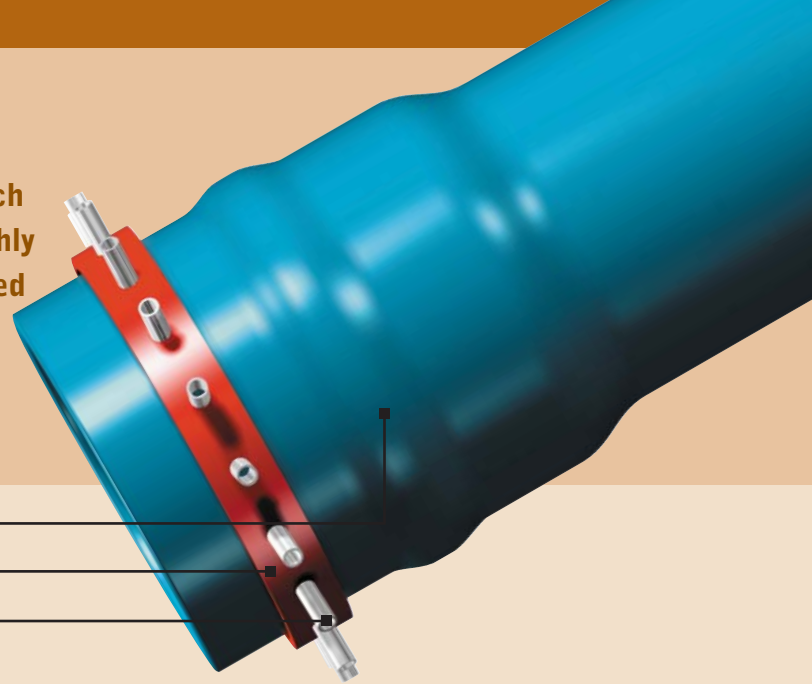
Grooved & thickened spigot

Inner steel ring



The TerraBrute™ locking joint represents three years of research and testing work by our research team. In my opinion it is one of the most thoroughly researched and tested pipe products ever designed for the directional drilling industry.

Dr. Erez Allouche, University of Western Ontario



Drill extended lip bell  
Outer steel ring with holes for pins  
Steel spring pins



Assembly of the TerraBrute joint is fast and easy – simply insert the grooved spigot end into the “steel ring-and-pin” bell up to the insertion line, and tap in the pins. No special training for crews is required.

#### Dimensions of TerraBrute Pipe

Nominal Size	Pressure Rating (2:1 safety factor)	Maximum Outside Diameter (external ring)	Average Internal Diameter
100	305 psi	160 mm	104 mm
150	305 psi	230 mm	149 mm
200	235 psi	290 mm	204 mm
250	235 psi	350 mm	250 mm
300	235 psi	415 mm	297 mm

TerraBrute's higher internal diameters, compared to HDPE pipe, provide the same hydraulic performance usually with one size smaller pipe, saving on material costs.

### PROVEN PERFORMANCE

Pressure rated in excess of 200 psi TerraBrute delivers the superior strength and corrosion resistance you've come to expect from our Blue Brute pressure pipe, along with the ability to absorb the underground shear and flexure stresses that occur in buried applications.

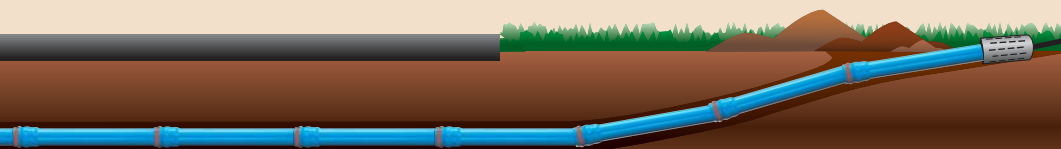
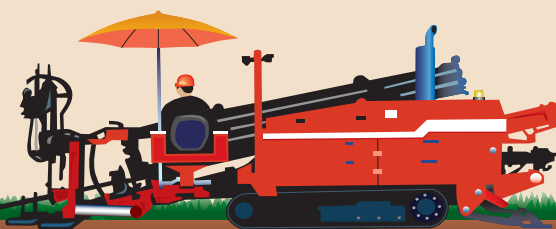
### PROVEN COMPATIBILITY

TerraBrute trenchless PVC pipe is designed for total compatibility with your municipal system. Connections can be made with standard PVC CIOD fittings, direct tapped couplings or standard service saddles. Repair and handling techniques are the same as for any AWWA PVC pressure pipe.

### PROVEN JOINING SYSTEM

Based on our gasketed bell and spigot design, proven through years of service in the field, the TerraBrute joint is rated at many times the pressure rating of the pipe. And unlike competing coupling joints, the TerraBrute joint has been specially engineered to deliver the highest pull strength safety factors in the industry for HDD applications.

TerraBrute™ is manufactured from pipe certified to the following standards:



Complete this card and fax it back to us at (905) 403-1124.

Name

Title

Dept.

Company

Address

City

State/Province

ZIP/Postal Code

Phone

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**Company classification:**

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- Builder/Developer
- Operator/Plant Maintenance
- Contractor
- Distributor/Wholesaler
- Engineering Firm
- Government
- OEM - Product(s) Manufactured: \_\_\_\_\_
- Utility
- Other: \_\_\_\_\_

**Product interests:**

- PVC Pressure Systems
- PVC Sewer Systems
- Irrigation Systems
- Piping Systems for Water and Waste Water Treatment Plants
- Sewage Force Mains
- Service Pipe and Compression Fittings

**I would like:**

- PVC Pressure System Design
- PVC Sewer System Design
- Surge Pressures in PVC
- Installation Guide
- Longevity of PVC
- Hydraulics of PVC Pipe
- How PVC compares to other materials

**I would also like to know about other IPEX products:**

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- Industrial piping systems
- Hydronic radiant heating systems

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## FAST AND EASY JOINT ASSEMBLY

Unlike butt fusion or electrofusion joining methods used with HDPE pipe, TerraBrute requires no expensive equipment or special installer training. Because pipe segments are assembled during pullback operations, pipe stringing is eliminated. Assembly time for a 300 mm TerraBrute joint is typically less than five minutes.

1



*Step 1 – Place the steel outer ring over the bell, without tapping any of the pins into the holes, so that it can move freely. Lubricate and assemble the joint as for standard PVC pressure pipe, inserting the spigot up to the insertion line. This will align the internal ring and the pin holes.*

2



*Step 2 – Once the inner ring and holes are aligned, line up the outer ring with the pin holes and tap in two pins on opposite sides of the pipe. When both pins can be tapped in until they are flush, the joint is properly aligned.*

3



*Step 3 – Tap in all the remaining pins, and the joint is ready to be pulled.*

## SALES AND CUSTOMER SERVICE

Canadian Customers call Pacific, Mountain and Central Time Customers  
**Toll free: (866) 473-9462** Phone: **(306) 933-4650**

U.S. Customers call  
**Toll free: (800) 463-9572**

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### About IPEX

IPEX is a leading supplier of thermoplastic piping systems. We provide our customers with one of the world's largest and most comprehensive product lines. All IPEX products are backed by over 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, the IPEX name is synonymous with quality and performance.

Our products and systems have been designed for a broad range of customers and markets. Contact us for information on:

- Municipal pressure and gravity piping systems
- Plumbing and mechanical piping systems
- Industrial process piping systems
- Electrical systems
- Telecommunications and utility piping systems
- Irrigation systems
- Radiant heating systems
- Industrial, plumbing and electrical cements
- PVC, CPVC, PP, FR-PVDF, ABS, PEX and PE pipe and fittings (1/4" to 48")

**WARRANTY:** All IPEX products are guaranteed against defects resulting from faulty workmanship or materials. If any such product is found to be defective by reason of faulty workmanship or materials, upon written notice and return of the product, the defective product will be replaced by IPEX free of charge, including shipping charges for the replacement product. Claims for labour costs and other expenses required to replace such defective product or to repair any damage resulting from the use thereof will not be allowed by IPEX. Our liability is limited to the price paid for the defective product. IPEX will not be bound by any warranty, other than above set forth, unless such warranty is in writing.

This literature is published in good faith and is believed to be reliable. However IPEX does not represent and/or warrant in any manner the information and suggestions contained in this brochure. Data presented is the result of laboratory tests and field experience.

IPEX maintains a policy of ongoing product improvement. This may result in modifications of features and/or specifications without notice.

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