DuroMaxx®
STEEL REINFORCED PE TECHNOLOGY

CONTECH®
ENGINEERED SOLUTIONS
A QUIKRETE® COMPANY

DuroMaxx® SRPE Technology





9 Case Studies that Demonstrate the Benefits of DuroMaxx SRPE

DuroMaxx® Steel Reinforced Polyethylene

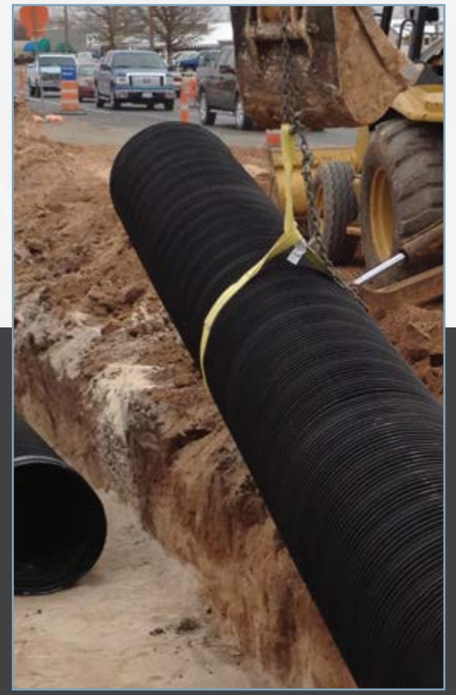
DuroMaxx steel reinforced polyethylene (SRPE) represents a revolution in pipe construction that was pioneered in Australia and recognized by Contech Engineered Solutions as a having all of the strength of steel, with the durability of plastic. In 2010, Contech retained the exclusive rights to manufacture Steel Reinforced Polyethylene pipe, and we have never looked back. By encapsulating structural steel within polyethylene, DuroMaxx sets the standard in durability, flexibility and hydraulic capacity. Joints are fitted easily and achieve a level of watertight performance that sets DuroMaxx apart from more convention pipes.

DuroMaxx consumes 35% less of the natural resources required to produce AASHTO M294 pipe. Steel reinforcing ribs in the profile wall provide the structural integrity for the pipe. These ribs are made out of steel with recycled content levels ranging from 55-80%. DuroMaxx pipe is eligible for LEED credits in a variety of the U.S. Green Building Council's categories for sustainable sites, water efficiency and landscaping, and materials and resources.

DuroMaxx®
STEEL REINFORCED PE TECHNOLOGY

DuroMaxx is far more than JUST a pipe! Take a moment to flip through these key case studies outlining the benefits of DuroMaxx in the following applications:

- Sanitary Sewers
- Irrigation
- Watertight Detention
- Storm Sewers
- Culverts
- Storage Vaults » CSO/SSO, Glycol Containment
- Yard Piping
- Reline » DuroMaxx® Liner Pipe

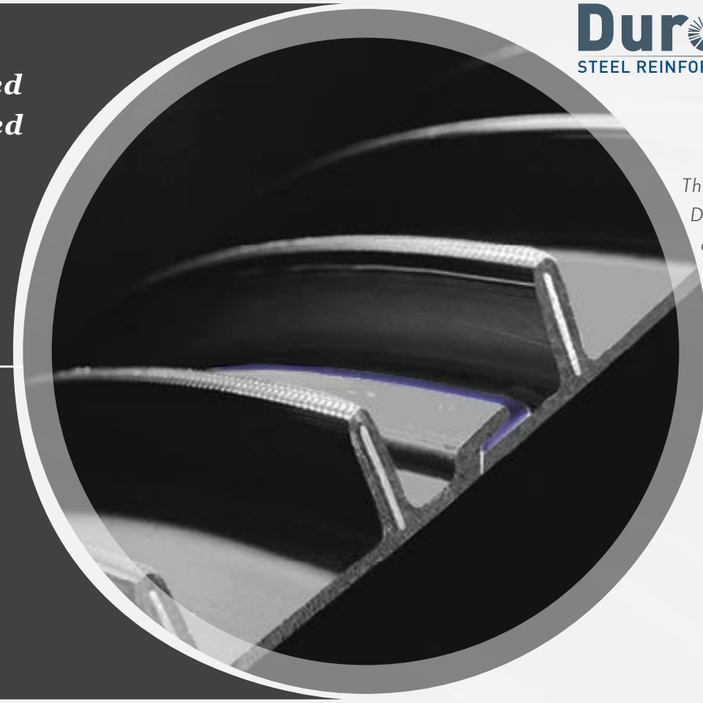


Multiple jointing options are available for DuroMaxx to meet your specific project requirements from Soil Tight (ST) joints to QuikJoint® UHP bell and spigot joints capable of 10.8 psi to watertight Welded Coupler (WC) joints.



Contech Engineered Solutions pioneered the way with this revolutionary product » DuroMaxx® SRPE Technology.

Manufactured in accordance with ASTM F2562 and AASHTO MP-20.



DuroMaxx®
STEEL REINFORCED PE TECHNOLOGY

The basic idea behind DuroMaxx is to construct a pipe that enhances the best qualities of two proven pipe construction materials; polyethylene and steel.

Sanitary Sewer Solutions



Eastern Idaho Sanitary Interceptor

Shelley, Idaho

Owner: Eastern Idaho Regional Wastewater Authority (EIRWWA)
Engineer: Forsgren Associates
Contractor: DePatco (Pilot), Bonniford (Phase I)
Technical Description: DuroMaxx® SRPE
4 miles of 36-in. dia., 2.5 miles of 42-in. dia. & 7 miles of 48-in. dia.

The first phase of the Eastern Idaho Regional Wastewater Authority's (EIRWWA) Regional Wastewater Treatment Plant, with a price tag of approximately $21 million, was completed during 2009. The facility, located in Shelley, ID, was designed to handle up to 2 million gallons of sewage per day with the possibility of expanding to 8 million gallons per day. A large diameter sanitary interceptor line was run from Bingham to Bonneville counties, connecting Shelley with the City of Ammon.

During their search for the appropriate sanitary sewer pipe, the EIRWWA and the engineer on the project, Forsgren Associates, allowed DuroMaxx to perform a pilot installation to fully test the product before being considered. Upon the successful pilot evaluation, DuroMaxx was then included in the evaluation process for the 14-mile interceptor.

After the comprehensive material evaluation, which included seven technologies, DuroMaxx steel reinforced polyethylene pipe was chosen. Because of the high strength and exceptional joint tightness, DuroMaxx provides outstanding value. Not only did it meet the initial testing requirements, but it was able to provide the long-term infiltration and exfiltration needs. DuroMaxx is also extremely resistant to corrosive effluent and met the hydraulic efficiencies to allow for the minimum slope and longer runs.

The pilot project installation included 600 LF of 42-in. diameter and 600 LF of 48-in. diameter DuroMaxx sanitary sewer pipe at depths ranging from 12 to 20 feet. In-situ sieved materials were used for bedding and backfill. The pipe was inspected for shape control, and the joints were subjected to a low-pressure air test.

The entire project consisted of 4 Miles of 36-in. diameter, 2.25 Miles of 42-in. diameter and 7 Miles of 48-in. diameter DuroMaxx steel reinforced polyethylene pipe. Phase I construction began in fall of 2009 with a projected completion by spring 2011. This project will provide for economic development by protecting precious groundwater resources within the region and allow for community growth along the interceptor line. Partnering with neighboring communities on projects like these improves public health and safety, protects natural resources and infuses funds into the local economy.

DuroMaxx Results:



- Joints subjected to low-pressure air test for successful pilot evaluation.

Irrigation Solutions



Barker Ranch Irrigation Canal Piping

West Richland, Washington

Owner: Barker Ranch Ltd
Engineer: J-U-B ENGINEERS, Inc.
Contractor: Apollo Inc.
Technical Description: DuroMaxx® SRPE
3 miles of 54-in. and 60-in.
1,500 LF of 30-in. dia.

The Barker Ranch Irrigation Canal Piping is part of the Columbia River Basin Water Management Program and replaced three miles of an open-earth irrigation canal with a closed pipe system. Funded with a $5.6 million grant by the Washington State Department of Ecology Office of Columbia River, the pipe system increases water delivery efficiency with leak and evaporation reductions.

Barker Ranch Ltd worked with J-U-B ENGINEERS, Inc. to find a pipe product that could handle 9 psi of seasonal pressure for the new pipe system. It also had to maintain the existing footprint of the canal – which runs along the banks of the Yakima River – with joint deflection, elbows and have access risers every 500 LF.

DuroMaxx steel reinforced polyethylene (SRPE) pipe from Contech Engineered Solution was chosen because it met these needs and also increased the installation production rate inherent with a bell and spigot pipe versus a solid wall welded pipe.

"Barker Ranch Ltd elected to use DuroMaxx pipe to reduce project costs and meet their budget, realizing the pipe was a new product," said Gary Weatherly, P.E., with J-U-B ENGINEERS, Inc. "The project also had a very aggressive completion schedule."

Apollo Inc. installed over 3 miles of 54 -in. and 60 -in. diameter DuroMaxx pipe with HDB pressure rated polyethylene resins. An additional 1,500 LF of 30 -in. diameter DuroMaxx was installed to provide additional water to the ranch. DuroMaxx provided superior performance and proved an effective and economical solution for low head water transmission.

The increased efficiency of the closed pipe system allowed Barker Ranch to divert less water from the Yakima River, adding 6,436 ac-ft of water to stream flows, benefiting local fish and wildlife. The new pipeline also delivers water to restored wetlands at Barker Ranch to support 175 different bird species and other animals.

"The Barker Ranch project represents the kind of conservation we need in the Greater Columbia Basin to best make use of a finite resource," explained Tom Tebb, Ecology's regional director for Central Washington.

DuroMaxx Results:



- Able to handle 9 psi of seasonal pressure while maintaining the existing footprint.

Detention Solutions



Kent County Waste-to-Energy

Grand Rapids, Michigan
Owner: Covanta Energy
Engineer: AECOM
Contractor: Diversco Construction
Technical Description: DuroMaxx® SRPE
475 ft. of 96-in. dia.

Covanta Energy is one of the world's largest owners and operators of infrastructure for the conversion of waste-to- energy. Covanta operates and/or has ownership positions in 44 energy-from-waste facilities, primarily located in North America, and 20 additional energy generation facilities, including other renewable energy production facilities in North America. Covanta-operated facilities convert 20 million tons of trash annually into 9 million megawatt-hours of clean, renewable energy and more than 9 billion pounds of steam sold to a variety of industries.

Covanta Energy's Grand Rapids location has a unique situation where waste haul trucks entering and leaving the site spread contaminated stormwater during wet periods. Contaminated stormwater is collected in an open basin and slowly released into the adjacent Grand River. Since 2006, the Michigan Department of Environmental Quality (MDEQ) has targeted specific outfalls to the Grand River monitoring the Total Maximum Daily Loads (TMDLs) for pathogens, metals and other pollutants. The site's stormwater would often exceed the maximum allowable TMDLs creating a risk to the river and greater watershed. The MDEQ and the Kent County Department of Public Works requested Covanta develop a long-term solution to protect the river and meet the established water quality standards.

Engineering firm AECOM and Covanta proposed a long-term solution of creating an underground storage system for a 25-year event. AECOM designed a new stormwater system for the entire 2 acre site directing all stormwater into a 96-inch diameter DuroMaxx SRPE system with welded-coupler joints providing 22,844 CF of storage. The final piece of the puzzle involved the Kent County DPW and the City of Grand Rapids which allowed Covanta to tap into an adjacent city sewer trunk line. Once the DuroMaxx system is near capacity, Covanta can release the contaminated stormwater for treatment at the local wastewater treatment plant. DuroMaxx was the ideal solution for the site because it provided the required storage capacity in limited space with long-term durability and significantly low leakage; less than 88 gallons over 24 hours.

DuroMaxx Results:

- The ideal solution for the site because it provided the required storage capacity in limited space with long-term durability and significantly low leakage; less than 88 gallons over 24 hours.

Storm Sewer Solutions



Zachary High School

Zachary, Louisiana
Owner: Zachary School Board
Engineer: Watson Ricks Engineering Group LLC
Contractor: Bendale Farms
Technical Description: DuroMaxx® SRPE
1600 LF total including 42, 48, 54 and 60-in. dia.
A-2000™ PVC Pipe

The Zachary School Board was in search of a drainage pipe product to help drain the football field at Zachary High School in Louisiana.

Reinforced concrete pipe was originally considered for the project but DuroMaxx steel reinforced polyethylene pipe was a suggested alternative. DuroMaxx offers the strength of steel reinforcing ribs and the durability of High-Density Polyethylene Resin HDPE. This, coupled with watertight (WT) joint performance tested up to 15 psi and long available lay lengths, set DuroMaxx apart from conventional pipe products. It is also lightweight, ensuring easy handling and a quick installation.

Because of these advantages, Watson Ricks Engineering Group LLC and the School Board decided to use approximately 1600 LF of DuroMaxx polyethylene pipe in 42, 48, 54 and 60-in. diameters for the football field. A-2000 PVC pipe was also used in smaller diameters.

The installation went smoothly and the School Board was happy with the drainage solution for the football field.

DuroMaxx Results:

- Watertight joint performance tested up to 15 psi and long lay lengths.



Sunshine Road Emergency Repair

Fort Benning, Georgia

Owner: Fort Benning Directorate of Public Works
Engineer: Fort Benning Directorate of Public Works
Contractor: Circle S Industries
Technical Description: DuroMaxx® SRPE
Triple barrel 300 LF (total) of 48-in. dia.

At Fort Benning, Georgia, severe rains and flooding washed out several roadways. Sunshine Road was in need of an emergency repair and the Fort Benning Directorate of Public Works (DPW) searched for a culvert solution that could accommodate the swampy area and 28 feet of cover.

DuroMaxx steel reinforced polyethylene (SRPE) pipe and reinforced concrete pipe (RCP) were the only two options that could accommodate the site requirements and DuroMaxx was chosen over RCP due to installation cost and time savings.

Circle S Industries - the contractor on the project - could only work during certain hours on certain days of the week as there were periodic live fire exercises that closed the roadway, making a fast installation crucial. The DuroMaxx pipe was precut at the plant and arrived on site ready for a speedy installation.

A triple barreled 48-in. diameter DuroMaxx system - each 100 feet in length - was installed on the site. Crushed stone was used to the spring-line due to the poor subgrade and the pipe was buried under 30 feet of cover. Most of the material on base was sand or sandy clay and jumping jack tampers were utilized to pack the clay.

DuroMaxx in 24-in. and 36-in. diameters was also used on storm drain applications in several additional Fort Benning locations where native soil was used for bedding and backfill.

DuroMaxx Results:

- Beat out the competition due to installation cost and time-savings!



Bryan's Lift Station Improvements

Monticello, Indiana

Owner: City of Monticello, Indiana
Engineer: Wessler Engineering
Contractor: F&K Construction
Technical Description: DuroMaxx® SRPE
CSO detention system with 395,000 gallons of storage

After a combined sewer overflow detention system was installed for the City of Monticello, Indiana, innovation was the only thing overflowing. Evidence of this is that this project is a recipient of the Indiana ACEC 2012 Engineering Excellence Honor Award.

Nestled between Lake Shafer and Lake Freeman in north central Indiana, the city of Monticello is a Midwest summer vacation destination. The City has 5,400 year-round residents and operates a combined sewer collection system and Class II wastewater treatment plant with a design average flow of 1.1 MGD and peak capacity of 2.4 MGD. This system has six combined sewer overflow (CSO) outfalls that discharge to the Tippecanoe River and the downstream Lake Freeman. To comply with the federal Clean Water Act, the City's long-term control plan (LTCP) included the reduction and elimination of CSOs. The Bryan's Lift Station Improvements project was created to increase the lift station's pumping capacity to 2.5 MGD and provide 500,000 gallons of detention.

Bryan's Lift Station originally was constructed in the 1950s and served combined sanitary and storm sewers. During peak water events, the lift station was overwhelmed and unable to handle the full flow resulting combined sewer overflow events.

The site location presented unique challenges of limited space, a high water table and tight hydraulic limitations on the existing sewer systems. With the site layout challenges and its visible public location, traditional storage structure options quickly were eliminated. Open-concrete tanks would be difficult and expensive to build onsite. Steel tanks would have required an additional pump station to convey the incoming wet weather flows to the storage structures. A large-diameter tunnel did not appear financially or geographically practical.

With sewer pipe technology innovations, creation of a steel reinforced polyethylene (SRPE) CSO storage system was economical and practical. This optimal solution modeled an underground, high-performance detention system by using a grid of buried pipe to store combined sewage below grade. Contech's DuroMaxx® SRPE technology was engineered into a CSO detention and drainage system that met the challenges of having a small footprint, watertight joint performance and long-term durability.

DuroMaxx Results:

- Met the challenges of a small footprint, watertight joint performance and long-term durability.

Storage Vault Solutions » Glycol Containment



MacArthur Airport Glycol Containment

Long Island, New York

Owner: Fort Benning Directorate of Public Works
Engineer: Fort Benning Directorate of Public Works
Contractor: Circle S Industries
Technical Description: DuroMaxx® SRPE
432 LF of 96-in. dia. and 384 LF of 84-in. dia.

The "clean-airplane" concept was derived by the U.S. Federal Aviation Administration (FAA) Federal Aviation Regulation (FAR) 121.629, which states "No person may take off an aircraft when frost, ice or snow is adhering to the wings, control surfaces, propellers, engine inlets, or other critical surfaces of the aircraft or when the takeoff would not be in compliance with paragraph (c) of this section."

Safe winter operations require special procedures by airline maintenance, engineering and flight operations. As part of those procedures, a deicing solution is often used that will remove accumulated frost, ice or snow from an airplane. These fluids must be transported, stored and handled properly to be effective. While airplane deicing requirements have made air travel in winter months safer, there are new regulations arising as the environmental impacts of the practice have come under regulatory scrutiny. One of the key chemicals used in the deicing process is glycol – a potentially harmful chemical if left untreated or improperly stored. Therefore, it is critical that the resulting, contaminated runoff from the tarmac also be properly stored and treated.

In response to these concerns, the MacArthur Airport in Long Island, New York, was in need of an efficient and cost-effective solution to properly store stormwater contaminated with deicing fluid prior to being treated. MacArthur Airport worked closely with L. K. McLean Associates to select an ideal glycol pre-treatment and collection system. They wanted a solution that would have a smaller footprint and allow them to maximize their available land space for continued use as runway and taxiways. Ultimately, they selected a solution by Contech Engineered Solutions LLC which utilized DuroMaxx® steel reinforced polyethylene (SRPE) tanks. This system would serve as an underground storage chamber from which the runoff would be pumped to a treatment system constructed above. The complete system consisted of 384 LF of 84-in. diameter pipe and 432 LF of 96-inch diameter pipe resulting in 35,739 CF storage volume. DuroMaxx is a reinforced polyethylene pipe with a smooth waterway wall and exterior profile that is reinforced with high strength galvanized steel ribs. While DuroMaxx provides a completely structural solution, it is also lightweight and installation was quick, which meant less expense and fewer dewatering issues – a pleasant surprise to both the airport and the contractor. Given the sensitivity of the chemicals being stored here, it was also crucial that the joints be leak-free. The DuroMaxx system was designed with welded coupler (WC) joints for a true symbiotic connection. The system can be put through either an air test or vacuum test to ensure that joints are properly sealed.

DuroMaxx Results:



- Provided a completely structural solution that was lightweight and installation was quick.

Reline » DuroMaxx® Liner Pipe



Mobile Regional Airport - Runway 14/32

Mobile, Alabama

Owner: Mobile Regional Airport
Engineer: Volkert & Associates, Inc.
Contractor: John G. Walton Construction Co., Inc. & Indiana Reline, Inc.
Technical Description: DuroMaxx® SRPE
1500 LF of 120-in. dia.

Locally owned and operated, the Mobile Regional Airport is located in southern Alabama and boasts over ten years of operations. It is the second airport in the country to have a federalized screening workforce. The airport is also home to the U.S. Coast Guard Aviation Training Center where advanced training is provided to U.S. Coast Guard pilots and aircrew.

In February 2013, the Mobile Airport Authority filed an application with the Federal Aviation Administration to garner a small stipend intended for continued development and rehabilitation for the airport. Part of that involved the rehabilitation of a single 1,740′ long, 132″ diameter culvert that ran under Runway 14/32.

Given the location, replacement was completely out of the question. The Airport did not want to have to shut down operations while construction was underway.

Ultimately, they turned to a 120" diameter DuroMaxx® steel reinforced polyethylene (SRPE) liner pipe supplied by Contech Engineered Solutions to slipline into the existing culvert.

There were several things that had to be considered during the structural and hydraulic design. One of the most important considerations was the varying heights of cover (some areas carrying almost 35 feet of cover). The design also incorporated an existing junction box with a grade change of 0.2% to 1.04%. The entire installed length was 1,740 linear feet – the reline segments totaled 1,500 linear feet while an additional 240 linear feet were direct buried.

Owner of Indiana Reline, Inc., Chris Wisehart stated, "Our company has installed a wide variety of both small and large diameter liner pipe products over the years. This was our first time installing DuroMaxx steel reinforced polyethylene pipe for large diameter pipeline rehabilitation and we were pleased with the pipe's performance and ease of handling. DuroMaxx was strong enough to maintain its shape against flotation forces, while also providing necessary buckling resistance to the grouting operation. The special 40 foot lengths reduced the number of pieces we had to handle and minimized the amount of joint welding we had to perform. We will gladly use DuroMaxx again."

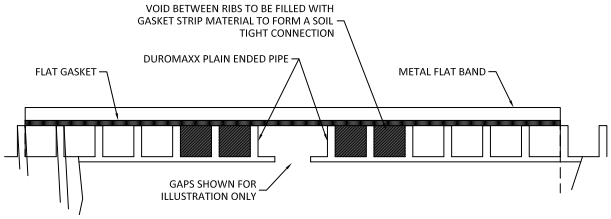
DuroMaxx Results:



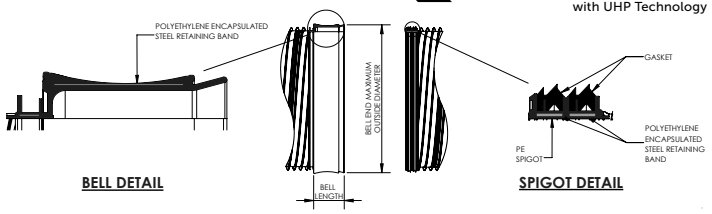
- Large diameter reline for a fully structural solution that was cost-effective and time-efficient.

The Design Behind the Performance

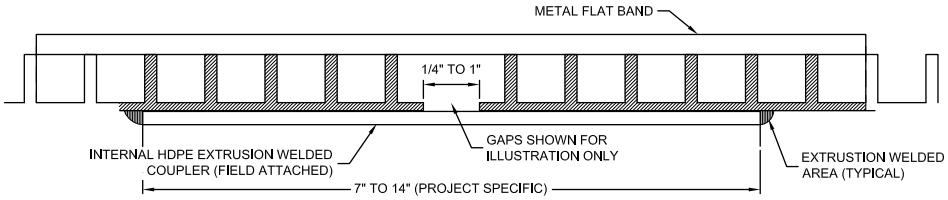
Soil Tight (ST) Joint Detail



QuikJoint® UHP Joint Details



Welded Coupler (WC) Joint Detail



OWNERS, ENGINEERS, AND AGENCIES CHOOSE DUROMAXX® SRPE.

CONTECH® ENGINEERED SOLUTIONS
A QUIKRETE® COMPANY

MANUFACTURING AMERICA'S INFRASTRUCTURE™

Contech® Engineered Solutions manufactures civil infrastructure products that add lasting value to every project.

We work alongside owners, engineers, and customers to provide guidance, design support, and installation assistance, helping you build with confidence.

We look forward to working with you on your next project.

PIPE SOLUTIONS | STORMWATER SOLUTIONS | STRUCTURE SOLUTIONS

For more information, we have representatives for all 50 states.
Please call 800-338-1122 or visit www.conteches.com.

NOTHING IN THIS CATALOG SHOULD BE CONSTRUED AS A WARRANTY. APPLICATIONS SUGGESTED HEREIN ARE DESCRIBED ONLY TO HELP READERS MAKE THEIR OWN EVALUATIONS AND DECISIONS, AND ARE NEITHER GUARANTEES NOR WARRANTIES OF SUITABILITY FOR ANY APPLICATION. CONTECH MAKES NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, RELATED TO THE APPLICATIONS, MATERIALS, COATINGS, OR PRODUCTS DISCUSSED HEREIN. ALL IMPLIED WARRANTIES OF MERCHANTABILITY AND ALL IMPLIED WARRANTIES OF FITNESS FOR ANY PARTICULAR PURPOSE ARE DISCLAIMED BY CONTECH. SEE CONTECH'S CONDITIONS OF SALE (AVAILABLE AT WWW.CONTECHES.COM/COS) FOR MORE INFORMATION.

© 2026 Contech Engineered Solutions LLC , a QUIKRETE Company
All rights reserved. Printed in USA.