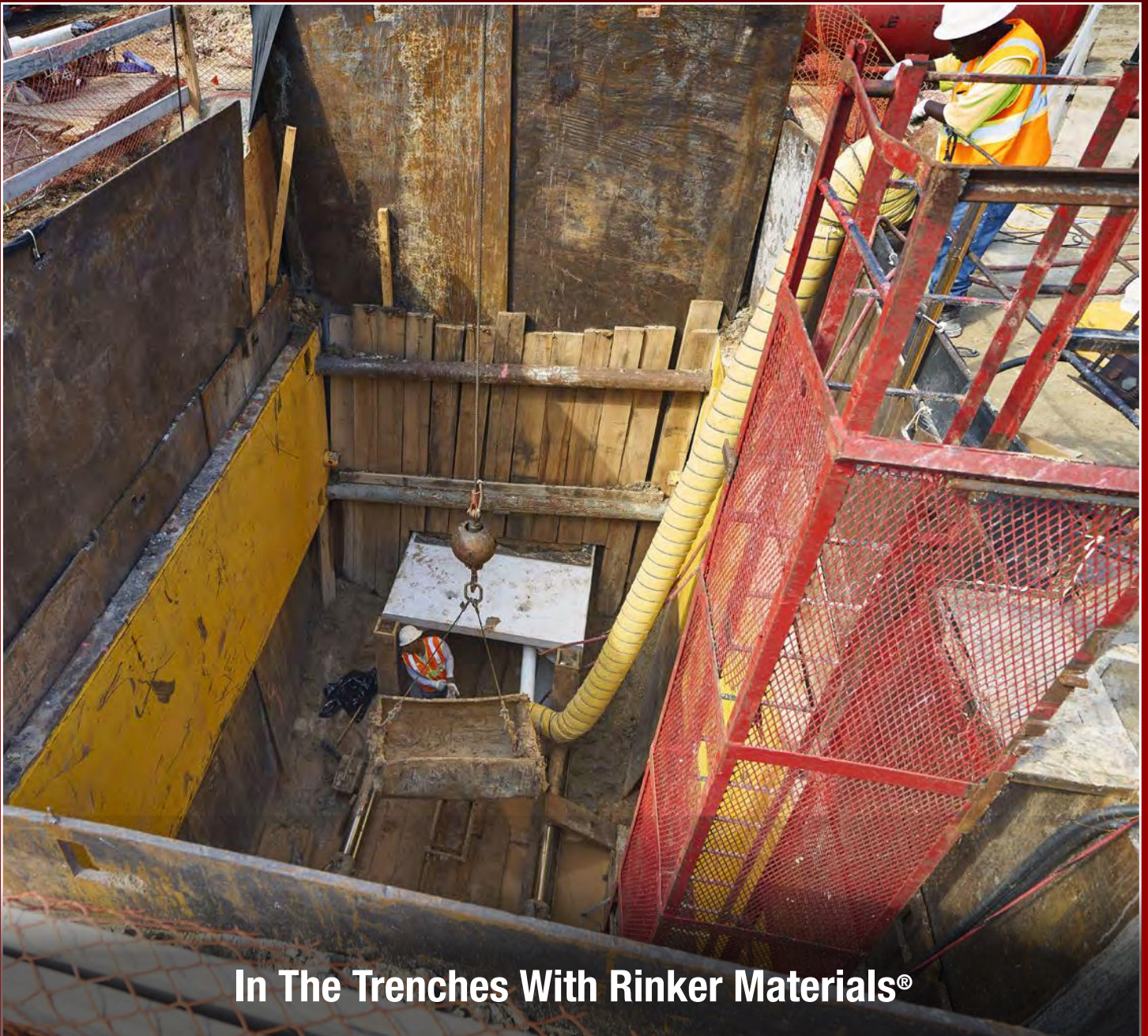


Rinker

MATERIALS®

A QUIKRETE® COMPANY

Trenchless Technology



In The Trenches With Rinker Materials®

www.rinkerpipe.com

IN THE TRENCHES WITH RINKER MATERIALS®

The railroad industry was the first to employ trenchless technology starting in the late nineteenth century with Rinker Materials® contributing high-quality, structural concrete pipe and box culverts to the practice for the past six decades. Since its founding in the early 1960s, Rinker Materials® has collaborated with engineers, specifiers, contractors and DOTs across the country to design and deliver millions of lineal feet of reinforced concrete pipe (RCP) and box culverts for stormwater systems installed using trenchless technology.

A process that does not require any excavation, public and private project owners appreciate the minimal disruption caused when constructing or rehabilitating a stormwater system with trenchless technology. Understanding this growing demand, Rinker Materials® stays on the cutting-edge of trenchless technology product innovation, project specifications and design best-practices.



WHY TRENCHLESS TECHNOLOGY

Unlike traditional stormwater system installations where cutting a trench closes roads and forces traffic diversions, the trenchless technology approach allows RCP and box culverts to be placed without disrupting traffic. Arguably the most popular trenchless technology method today is jacking or microtunneling, which involves pushing RCP and box culvert with powerful hydraulic jacks through the ground behind a cutter head with the excavated material removed from the shaft manually or mechanically within a tunneling shield. Jacking of RCP and box culverts provides many advantages to traditional stormwater system installations.



Environmental Benefits:

- Less soils removed
- Surface facilities protected
- Less quarried material trucking
- Minimized volumes of contaminated soil disposal
- Surface defacement is avoided or minimized (grass, trees, wetlands)
- Less consumption of carbon-based fuels from reduced transportation and excavation activities



Safety Benefits:

- Fewer utility strikes
- Reduced maintenance of traffic personnel
- Reduced traffic diversion resulting in fewer accidents involving the public
- Eliminated dangers associated with open trenches



Economic Impact:

- Traffic rerouting is avoided or minimized
- Pavement cutting is minimized, which may significantly reduce pavement life
- Reduced disruption to local businesses
- Completion time is typically much shorter than open trench installations
- Owner's tax revenue impact is minimized when trenchless installation is used (due to businesses uninterrupted operation, metered parking revenue when applicable)

WHY RINKER MATERIALS®

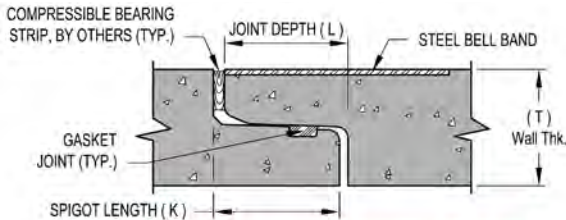
Rinker Materials® designs RCP and box culverts that withstand the jacking forces generated during installation and manufactured to tighter tolerances than standard RCP for open cut installations, particularly pipe end squareness at the joints. Unlike open cut pipe, the pipe joints transmit axial loads from one pipe section to another. The pipe joints must be designed to resist those axial loads and flush with the outside diameter of the pipe to minimize soil resistance.

Rinker Materials® total pipe systems are precisely engineered to meet these rigid design standards required for culverts, storm drains or sanitary sewer jacking applications, even in tough conditions. Rinker Materials® offers a variety of concrete pipe sizes and joint types to suit any specific project requirements. Whether installing under a roadway, airport, railway, river or stream, you can depend on Rinker Materials® technical expertise and high-quality products for your trenchless projects.



RINKER MATERIALS® RCP

R.C. Pipe Diameters (30"Ø - 96"Ø)*



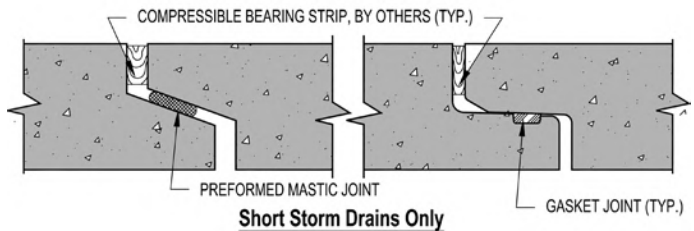
Pipe I.D. (Nom.)	T	L	K	RCP Section Length
30" Ø	4 1/4"	4 5/8"	4 3/4"	8'
36" Ø	4 3/4"	4 7/8"	5"	8'
42" Ø	5 1/4"	5 1/4"	5 3/8"	8'
48" Ø	5 3/4"	5 1/2"	5 5/8"	8'
54" Ø	6 1/4"	5 1/2"	5 5/8"	8'
60" Ø	6 3/4"	5 1/2"	5 5/8"	8'
66" Ø	7 1/4"	5 1/2"	5 5/8"	8'
72" Ø	7 3/4"	5 1/2"	5 5/8"	8'
78" Ø	8 1/4"	5 1/2"	5 5/8"	8'
84" Ø	8 3/4"	5 1/2"	5 1/2"	8'
90" Ø	9 1/4"	6 1/8"	6 1/4"	8'
96" Ø	9 3/4"	6 5/8"	6 3/4"	8'

Notes:

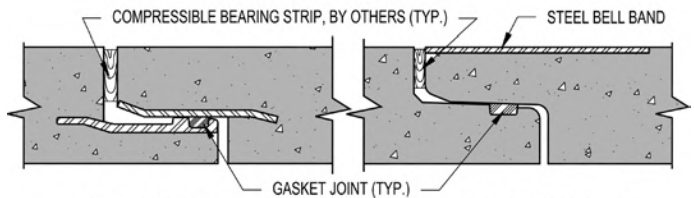
1. RCP strength classification requirements to be determined by a qualified engineer.
2. Product data subject to change without notice. Pipe dimensions & joint type may vary depending upon equipment availability.
3. Pipe produced to meet ASTM / AASHTO specification(s).
4. Steel reinforcement not shown for clarity.

* Additional pipe diameters not shown in tables maybe available upon request. Consult Rinker Materials™ representative.

Jacking R.C. Pipe Joint Types



Short Storm Drains Only



Steel Bell & Spigot

External Steel Bell Band

Notes:

1. RCP strength classification requirements to be determined by a qualified engineer.
2. Additional information available upon request. Consult Rinker Materials™ representative.
3. Product data subject to change without notice.
4. Steel reinforcement not shown for clarity.

PARTNER WITH RINKER MATERIALS®

Rinker Materials® staff of experienced design professionals and state-of-the-art manufacturing facilities have established a rich track record of success when it comes to producing RCP and box culverts for trenchless installations. From private cooperative utilities in rural areas of the country to public mass transit in large metropolitan cities, contact Rinker Materials® to partner on your next trenchless technology stormwater system installation project today.



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