

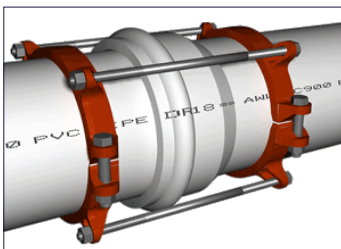
TECHNICAL BULLETIN

ADVANTAGES OF USING CERTA-LOK® IN YOUR SYSTEM

Historical External Joint Restraint Options

For years metallic external mechanical joint restraints have been the standard external joint restraint option. Brand names such as EBAA Iron, Sigma, Star and others manufacture quality joint restraint options.

External Joint Restraint Example:

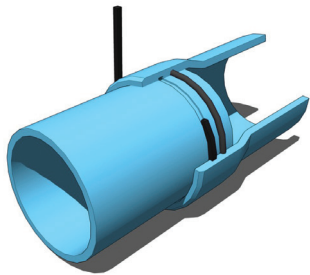


An Alternate Solution – Certa-Lok® Restrained Joints

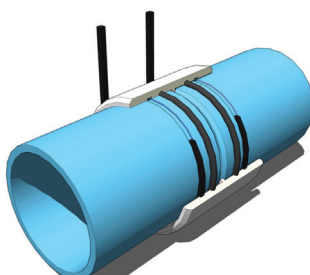
Westlake Pipe & Fittings' Certa-Lok PVC joints are an internally restraining, non-metallic joint that is an outstanding joint restraint option for PVC pipe and fitting joints. Certa-Lok is offered in two different joint styles across multiple product lines.

Certa-Lok joints rely on splines that are inserted into the joint via the spline hole(s). When properly assembled all Certa-Lok joints will have identical performance characteristics across the entire pipeline.

Restrained Joint Integral Bell (RJIB)
Bell and spigot with internal groove and spline locking system



Restrained Joint (RJ) Coupling
Two pipes joined by one coupling with internal groove and spline locking systems on each side



What are the Advantages of Certa-Lok Joints?

Westlake's Certa-Lok PVC pipe joints offer multiple advantages



REPEATABILITY

- The Certa-Lok splines are made of a durable nylon material which can be forcefully inserted until the end of the spline is bottomed out in the spline groove. Certa-Lok joint performance does not rely on metal harnesses and properly torqued bolts. Where as external restraints require multiple harnesses, tie-rods, and bolts to properly aligned, and installed in order to achieve the advertised joint performance.



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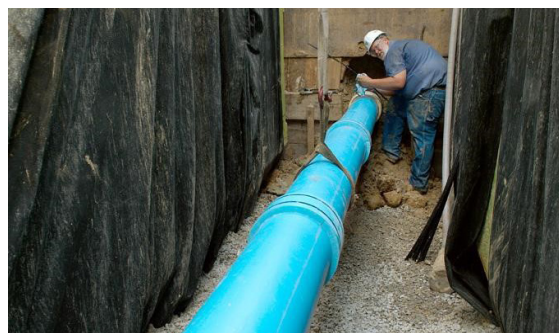
EASE OF ACCESS

- Certa-Lok only requires access to the spline hole for assembly.



FULLY NON-METALLIC SYSTEM

- Certa-Lok joints are a non-metallic joint system and will not rust or corrode over time. Therefore, no additional cathodic or corrosion protection systems are required, such as wrapping.



SAFER INSTALLATIONS

- Certa-Lok only requires access to the spline hole location on the pipe. Typical external restraints require 360° of access with at least 1-2' of clearance while the pipe is in a trench.
- Insert spline before or after pipe installation in trench



Spline insertion after installation



Spline insertion before installation

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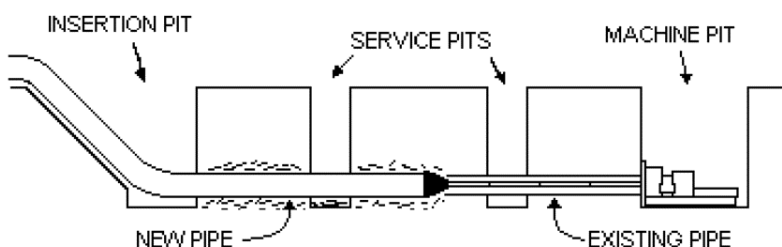
PUSH AND PULL CAPABILITIES

Certa-Lok products can be used in the following trenchless installations:

- Horizontal Directional Drilling (HDD)



- Static Pipe Bursting



SLIP-LINING INSTALLATIONS



COST EFFECTIVE INSTALLATIONS

Refer to the Installation Advantages of Westlake's Certa-Lok Technical Bulletin for a more detailed analysis of installation and project cost savings. Below are some of the reasons Westlake Pipe & Fittings' Certa-Lok joints are cost effective:



- Minimal Material Storage and Handling
 - Certa-Lok RJIB is built into the pipe and is not a separate line item; therefore, no additional shipping, storage or handling charges are incurred.

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Examples of storage requirements of external pipe and fitting restraints:



- Certa-Lok RJ Couplings are sold and delivered with the pipe. No need to buy from separate company.

LESS LABOR REQUIRED

- Certa-Lok installations are less labor intensive than typical external restraint installations.
- Certa-Lok typically requires no more than two laborers.
- Typical external joint restraints require as many as four laborers.

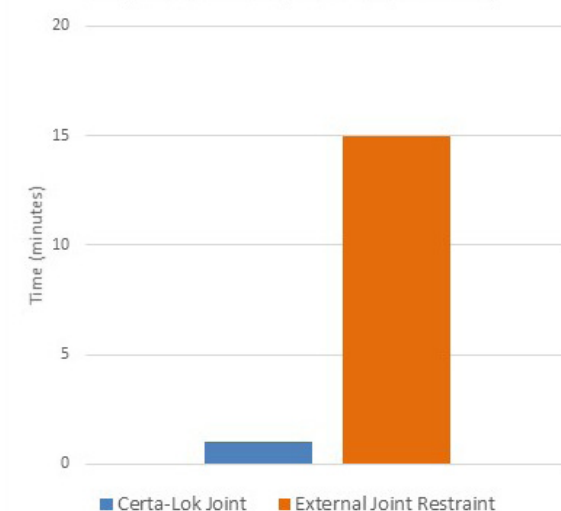


LESS INSTALLATION TIME

- Average Certa-Lok installation time is under 2 minutes, allowing for significantly efficient installation times.



Avg. Install Time per Joint (<14" dia.)



Note: In the time it takes to install the average external joint restraint, the average human can walk about a mile.

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LESS EQUIPMENT REQUIRED

- The only additional optional tool Certa-Lok joints is the spline insertion tool.

Spline
Insertion
Tool



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