

BIONAX[®] **SR[™]**
SEISMIC WATER PIPE



MORE DURABLE, RESISTANT AND COST-EFFECTIVE.

INTRODUCING BIONAX SR WATER PIPE **DESIGNED FOR SEISMIC REGIONS**

Exceeds the
Japanese Seismic
Design Standard by
70%

Compatible with
NORTH AMERICAN
Manufactured Pipe
and Fittings
(CIOD)

**CORROSION
RESISTANCE**

6" TO 12"
DIAMETERS
(150 to 300 mm)

Aging Water Pipes Are Vulnerable To Earthquakes

In cities across North America, aging and corroding water pipe networks suffer pipe bursts daily. In the event of an earthquake the occurrence is multiplied to the extreme. For example, in 1994 when the Northridge Earthquake occurred in the San Fernando Valley California, 15 seconds of the earth shaking caused 1,100 pipe bursts – more than a typical year's worth and leaving many residents without water for over two weeks.

Bionax SR Is The Solution

Bionax SR – Seismic Water Pipe – combines the same strength, toughness and flexibility as standard Bionax pipe with the enhanced seismic-resistance benefits of an extended bell. The result is a municipal water transmission and distribution system which performs better than any pipe product available today. Bionax SR can improve absorption of lateral ground strain of seismic events and provides other performance benefits including product consistency, industry standard dimensions and corrosion-resistant attributes for North American jobsites.



Exceeds Strain Requirement By 70%

The biaxial orientation and the extended bell of Bionax SR pipe provide excellent pipe and joint flexibility – precisely what is required from a water pipe if it is to remain intact after a seismic event. In fact, Bionax SR exceeds the 1% piping system strain requirement of the Japanese Water Works Association Seismic Design Standard by a factor of 1.7.

The efficacy of biaxially oriented pipe was challenged at Cornell University where independent tests were conducted. Upon completion, Bionax pipe was deemed the best material to install in seismically-sensitive areas subject to permanent ground deformation, the most damaging type of earthquake destruction.

“ Restrained joint Bionax pipes’ axial tension abilities is large enough to accommodate the great majority of liquefaction-induced lateral ground strains measured after each of the four major earthquakes recently in Christchurch NZ. ”

Thomas O’Rourke, Cornell University

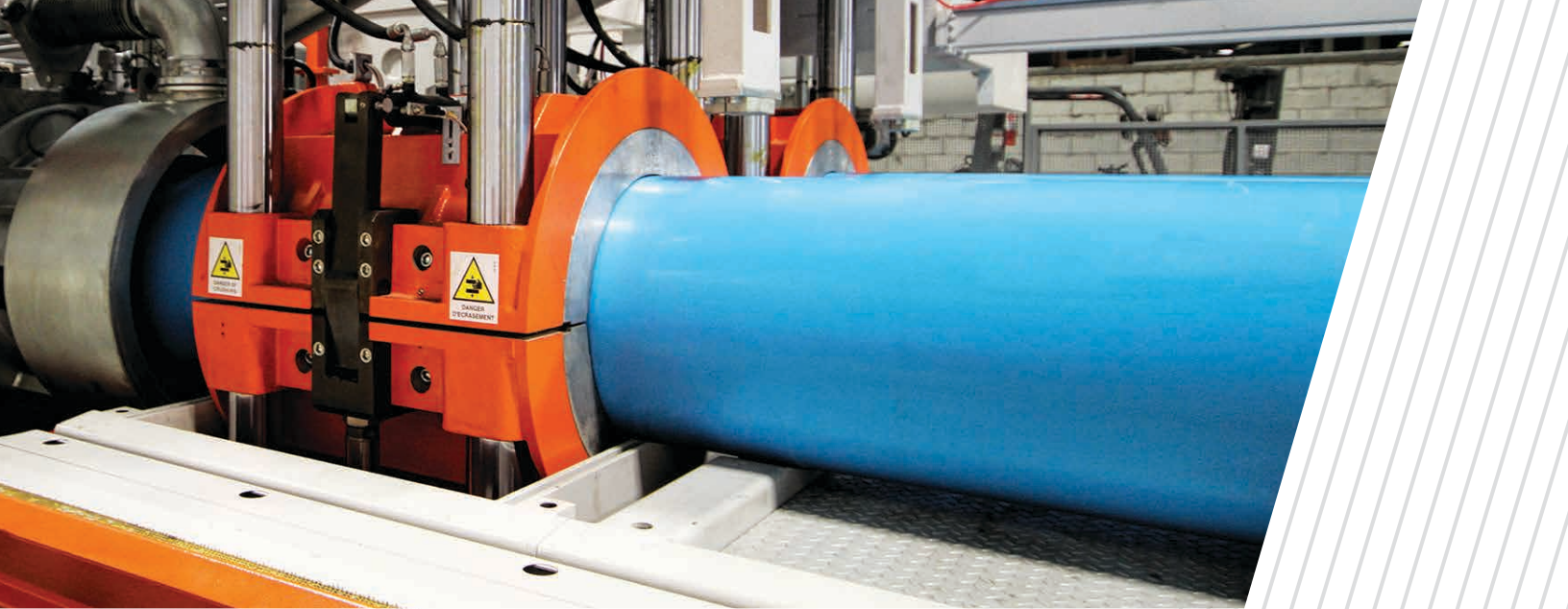


Bionax SR Advantages

Japan is one of the most susceptible areas to earthquakes. To counter possible earthquake damage to their water pipe networks, Japanese engineers rely on specifically designed ductile iron pipe. For over 40 years ductile iron pipe, with its extended bell design, has been a successful solution in Japan. However, in comparison, Bionax SR offers some distinct advantages for the North American market.

EARTHQUAKE-RESISTANT DUCTILE IRON PIPE	FEATURE	BIONAX SR PIPE
5.2m (14 additional joints for 500m)	Pipe lay length	6.1m (14 fewer joints per 500m)
New blade required every 50m of installation.	Cutting and bevelling	New blade required every 1,500m of installation.
Joint paint required after every cut.	Joint Paint	Not required.
True metric, inconsistent with all North American manufactured water pipe and fittings.	Diameter	Cast Iron Outside Diameter (CIOD), consistent with all North American manufactured water pipe and fittings.
Inconsistent outside diameter. Special order pipes required for hydrants and fittings.	Consistency	Consistent outside diameter.
HEAVY e.g. 300mm cl 52 = 1,031 lbs.	Weight (per length)	LIGHT WEIGHT e.g. 300mm PC 235 psi pipe = 236 lbs.
Pipe puller required.	Installation	No pipe puller required, all that's needed is a simple bar and block assembly with a pipe stop.
In Japan	Manufactured	North America and supported by local inventories.

STANDARD DUCTILE IRON PIPE	FEATURE	BIONAX SR PIPE
Required to be installed at regular intervals in order to achieve the 1% strain requirement.	Expansion Sleeves	Not required.
Requires poly-bagging.	Corrosion-proof	Yes



Tighter Tolerances Than Conventional Pipes

The manufacturing of Bionax SR's patent pending gasket system is both ID and OD controlled, so tolerances are much tighter than with conventional pipes. Joints are always bottle-tight.

Certified Third Party Tested

Every length of Bionax SR shipped to your site has been hydro tested to stringent AWWA standards. IPEX is third party certified by NSF to AWWA C909, your assurance that Bionax SR will perform as well in field as it does in our labs. Bionax SR is also third party certified to CSA B137.3.1 ASTM F1483, FM1612 and NQ 3660-950 standards, so it is truly certified tough.



Available In A Wide Range Of Diameter Sizes

SIZE RANGE	PRESSURE RATING	SOLD WHERE?
6" - 12"	235	NORTH AMERICA





THE IPEX ADVANTAGE



Seamless End-To-End Solutions

You can count on IPEX to provide you with an end-to-end solution that meets your specifications, integrates seamlessly and is fully compatible with your existing infrastructure.

A Leader In Piping Systems

IPEX has been manufacturing piping systems for more than 50 years and has earned a strong reputation for producing innovative products municipalities can rely on.

Peace Of Mind

When you deal with IPEX, you get everything you need to get the job done right including engineering expertise. And because your product is supplied by a single trusted source, you know we will stand behind you and your Bionax SR pipe every step of the way.



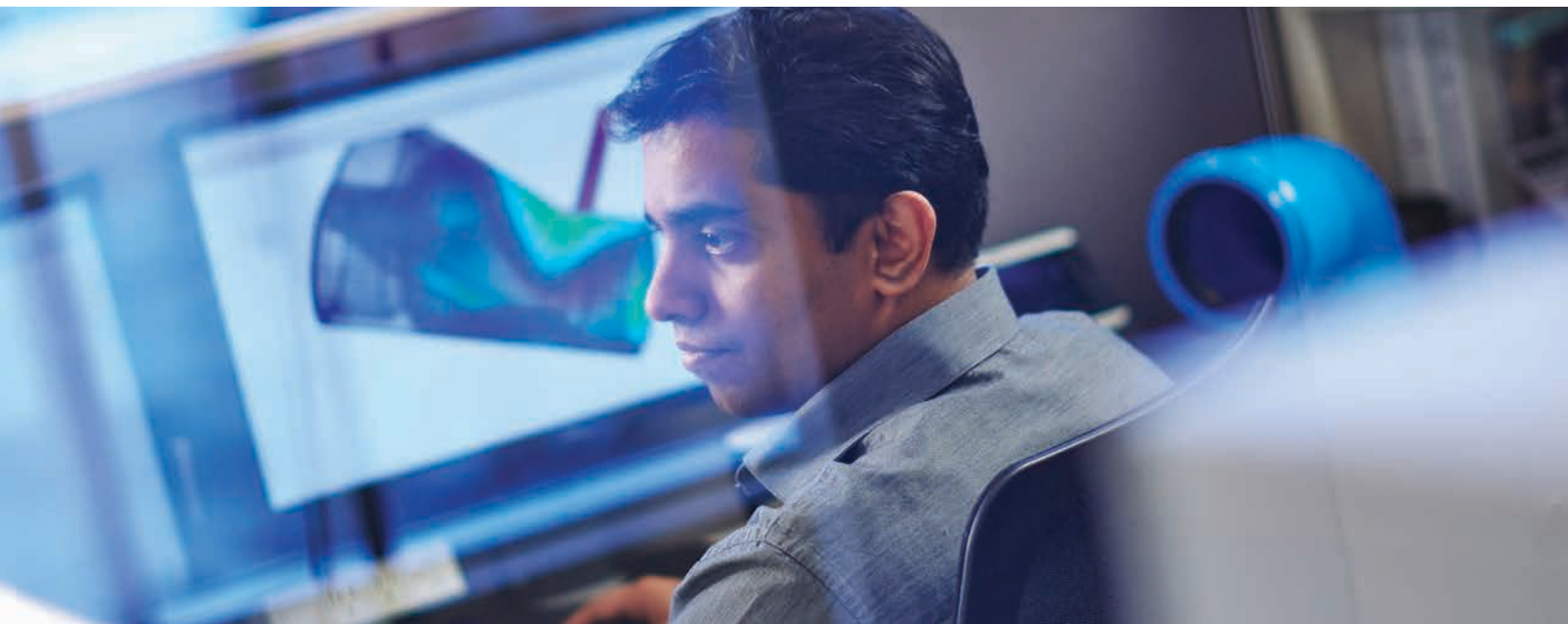


ABOUT THE IPEX GROUP OF COMPANIES

As leading suppliers of thermoplastic piping systems, the IPEX group of companies provides our customers with some of the world's largest and most comprehensive product lines. All IPEX products are backed by more than 50 years of experience. With state-of-the-art manufacturing facilities and distribution centers across North America, we have established a reputation for product innovation, quality, end-user focus and performance.

Markets served by IPEX group products are:

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





SALES AND CUSTOMER SERVICE

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