



# NPC External Joint Seal

## Technical Specifications

### 1. Scope

This specification describes the function of the NPC External Seal, its principle of operation, and the component materials that constitute the External Seal and their physical properties.

### 2. Product Application

NPC External Joint Seals are designed to seal leaking pipe joints in most types of pipe including concrete, reinforced concrete, cast iron, ductile iron, steel, vitrified clay, PVC and HDPE. They are designed to withstand external head pressure of 70 feet (30 psi) and internal head pressure of 34 feet (15psi).

### 3. Principle of Operation

NPC External Joint Seals stop leaking joints by bridging the joint with a flexible rubber seal and compressing the rubber seal against the inside diameter of the pipe on either side of the joint with expansion bands. Unlike the internal seal, installation requires a break in the line to slide the seal into place. They are frequently used in new installations and repair where new sections are spliced into place.

The Compressive force providing the seal on either side of the joint is the result of decreasing the effective diameter of the stainless steel hose clamp bands. The diameter of the compression bands are decreased by tightening the screw housings. Depending on the diameter of the pipe joint

being sealed, there will be between one or six take-up assemblies on each hose clamp band to ensure an even distribution of force on the rubber seal.

Reference NPC External Seal Recommended Installation Procedure for a detailed explanation of the preparation, assembly, and installation of the External Seal.

### 4. Materials

The NPC External Joint Seal is manufactured in compliance with the material requirement of ASTM C923, consisting of a high quality flexible rubber seal, 300 series stainless steel compression bands with take-up assemblies.

**Flexible Rubber Seal** - The seal is extruded from a high grade rubber compound to the required length, and the ends are joined using a high strength vulcanized splice. Physical properties of the rubber are listed in the table below.

**Stainless Steel Compression Bands** - The hose clamp bands are made from 304 stainless steel. Conforms to ASTM A240, ASTM A666, ASTM C923.

# NPC External Joint Seal

## Technical Specifications

### ASTM C-923 MATERIAL PROPERTIES

Physical Property	ASTM Specification	Test Requirement	Rubber Performance
Chemical Resistance 1N Hydrochloric Acid 1N Sulfuric Acid	D543, at 22 °C for 48 Hours	No weight loss	No weight loss
Tensile Strength	D412	1200 psi	1580 psi
Elongation at Break	N/A	350% minimum	500%
Hardness	D2240 (Shore A Durometer)	+/- 5 from manufacturer's specified hardness	48 +/- 5
Accelerated Aging	D573 70 °C for 7 days	Maximum Decrease: 15% tensile, 20% elongation	10.1% tensile decrease, 14.0% elongation decrease
Water Absorption	D471, immerse 0.75 by 2 inch specimen in distilled water at 70 °C for 48 hours.	10% weight increase maximum	0.8% weight increase maximum
Ozone Resistance	D1171	Rating 0	Rating 0
Low Temp. Brittle Point	D746	No fracture at -40 °C	No fracture at -40 °C
Tear Resistance	D624, method B	200 lbf/in.	Greater than 210 lbf/in.



## PRIMELINE PRODUCTS, INC.

*"Your Prime Source for Solutions, Products, and Training"*

309 Altamonte Commerce Blvd #1514  
 Altamonte Springs, FL 32714  
 Office: [407-772-8131](tel:407-772-8131)  
 Cell: [321-439-8306](tel:321-439-8306)  
 Fax: [407-786-8131](tel:407-786-8131)  
 Web: [www.PrimeLineProducts.com](http://www.PrimeLineProducts.com)  
 Email: [Paul@PrimeLineProducts.com](mailto:Paul@PrimeLineProducts.com)



PrimeLine Products, Inc. is a full service distributor for products related to the collection system maintenance and rehabilitation industry. Specializing in trenchless technologies. We sell Pipeline Plugs, Cleaning Nozzles, Chemical Grouts, Manhole Rehabilitation Products, as well as Cured in Place Lining Materials and Equipment.

We offer FREE training on all of our product lines! Call us today for a quote!