

## Survey Program

Garlock Sealing Technologies' engineers and surveyors will come to your location and perform on-site inspections of all elastomeric (non-metallic) expansion joints. This survey can be performed while at moor or at sea, and can include all shore based support facilities, including shipyards and dry-docks. While on-site Garlock surveyors inspect, evaluate and record pertinent data on each expansion joint utilized within your fleet; this includes all applicable inventory not currently in service. This inclusive service will provide the end-user with the following:

- Periodic inspection as mandated by the USCG and Code of Federal Regulations.
- Detailed listing of dimensional, physical and visual expansion joint data.
- Recommended replacement schedule with prioritization.
- System nomenclature and expansion joint identification information.

The compiled data helps engineering, maintenance and purchasing personnel formulate the necessary maintenance & replacement schedules and forecast repair budgets more accurately. This service, and its associated options, has proven to be a tremendous benefit to all of our clients serving the maritime sector; entities both public and private.

## Technical Support

Garlock Sealing Technologies offers on-site technical assistance of critical expansion joints, to ensure proper installation practices are followed. Proper installation plays a major role in the life expectancy of elastomeric expansion joints.

## Training

Garlock Sealing Technologies routinely provides Educational Training Seminars for customers at all levels. Engineering, maintenance and purchasing seminars can be provided at the customer's request.

## Customer Service

The Garlock Field Support Team consists of sixty-five (65) Sealing Specialists that are direct Garlock employees and are geographically deployed around the globe. These Garlock Specialists are supported by Regional Managers and Inside Sales Representatives, as well as Research & Development and Quality personnel. Garlock has over 200 full-line stocking Distributors throughout the world.

## Conformance

Garlock provides a variety of certifications and test results upon request. We are well versed and fully comply with ASTM F-1123 and applicable Code of Federal Regulations. Garlock routinely works with members of the International Association of Classification Societies (IACS); classification, design validation and/or third party witnessing can be facilitated. Garlock welcomes in-house audits and/or visits from our clients to tour our manufacturing facilities in Palmyra, New York.

For more information on how we can help with your marine application, please contact us:

**800-448-6688**  
**www.garlock.com**



**Garlock**  
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an EnPro Industries company

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## MARINE INDUSTRY

### EXPANSION JOINT PRODUCT RECOMMENDATION GUIDE



Tug • Ferry • Government  
Merchant • Military • Offshore  
Research • Shipyard • Support  
Terminal • Fishing • Passenger



## About Garlock

In service to world industries since 1887, Garlock has led the production and implementation of the latest Expansion Joint Technology for over fifty years.

Just a few of the "firsts" developed by Garlock:

- Development of high temperature elastomers to the levels now considered the industry standard
- Developing the patented construction with bonded rectangular body rings
- Creation of fused FEP liners designed specifically for chemical use
- Abilities to combine fabric, FEP and elastomers effectively
- Design of spool type joints to over 10 foot (120" or 3m) I.D.'s
- Development of the flowing arch design
- Fully tested and field engineered. All Garlock expansion joint styles have been rigorously lab and field-tested, and engineered to ensure long life and reliable service.

## Product Offering

### 206 EZ-FLO®

Unique wide self-flushing arch is designed to eliminate media buildup and reduce flow turbulence.

- ABS TYPE APPROVED
- ASTM F1123 compliant
- Canadian Registration Number (CRN)
- 4:1 Burst Pressure
- Rated up to 250 psi
- Rated up to 300°F

*Common marine services:* Fire Main, Main Propulsion Engines, Machinery Cooling, Seawater, Brine, Base Oil, Drill Water, Ships Service Generators, CHT, Potable Water, Ballast and Mud.

### Guardian 306 EZ-FLO®

Same profile and design characteristics as the Garlock style 206 EZ-FLO® but features an FEP liner that is mechanically bonded to the body of the expansion joint.

- ASTM F1123 compliant
- 4:1 Burst Pressure
- Rated up to 250 psi
- Rated up to 300°F

*Common marine services:* Jacket Water and CHT.

### 7250 FLEXO-MATIC®

Flexo-matic expansion joints are designed to absorb noise and vibration in piping systems. No arch design and steel reinforcement easily adapt to longer face to face dimensions.

- ASTM F1123 compliant
- Rated up to 150 psi
- Rated up to 400°F

*Common marine services:* Main Propulsion Engines and Ships Service Generators.

### 8100 GARFLEX®

GarFlex expansion joints feature a rugged, lightweight construction with a wide flowing arch.

- ABS TYPE APPROVED
- ASTM F1123 compliant
- 4:1 Burst Pressure
- Floating flange design

*Common marine services:* Fire Main, Main Propulsion Engines, Machinery Cooling, Seawater, Brine, Base Oil, Drill Water, Ships Service Generators, CHT, Potable Water, Ballast, Mud and Steering & Control.

### 204 Series

Series includes a standard, high pressure and custom classification designs. Abrupt arch design, available in multiple arch configurations and reducing tapers.

- Undergoes ABS unit certification
- 4:1 Burst Pressure
- Rated for full vacuum 29.9"hg
- Rated up to 300 psi
- Rated up to 400°F

*Common marine services:* Loading & Offloading Terminals



## Specifications



### ABS TYPE APPROVAL

Scope: American Bureau of Shipping type approved product, can be selected by ship designers, builders and owners to be placed aboard an ABS-classed vessel. Garlock holds type approval under the following class rules:

- Steel Vessels
- Mobile Offshore Drill Units (MODU)
- Naval Craft



### ASTM F1123-87 (2004)

Scope: This specification provides the minimum requirements for construction, materials, performance, and dimensional requirements of non-metallic expansion joints. The following entities have adopted this standard:

- US Navy
- US Coast Guard



### MIL-E-15330D

Scope: Obsolete military specification that covered the construction and material requirements for fire-retardant, non-metallic expansion joints.

- *Obsoleted:* 1992
- *Superseded by:* ASTM F 1123



### 46 CFR 56.30-10

Scope: Title 46, part 56 and the associated subparts of the Code of Federal Regulations (CFR) contain the requirements for various ship and barge piping systems and appurtenances.

- 46 CFR 56.60 deleted
- 46 CFR 56 adopted many ASME / ANSI standards
- ASTM F1123 has been adopted as the acceptable standard for non-metallic expansion joints