

MASON STAINLESS STEEL FLEXIBLE HOSE & EXPANSION JOINTS PRODUCT OVERVIEW

Mason Industries was started in 1958. Our first effort went toward the creation of a totally new approach to Vibration Isolation using high deflection, free-standing springs as opposed to traditional inadequate methods.

Our more recent work includes new approaches to both seismic and bomb blast protection, architectural isolation for floating floors, walls and ceilings, and complete building isolation, always using our own designs or new methods.

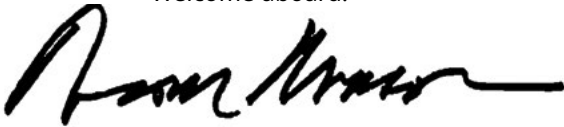
In the molded spherical rubber expansion world, we started with Masonflex and Superflex, which have a 35 year history and which culminated in 1996 with our development of Safeflex, the only Kevlar® reinforced spherical joint molded in high temperature EPDM with escape-proof flanges.

In order to complete our rubber offering, we acquired the Mercer Rubber Company in 1984 and increased our size capability to diameters of more than 12 feet with virtually unlimited shape and movement capability.

Wonderful as rubber materials are, we still needed stainless steel products for corrosive fluids and gases, or temperatures and pressures out of the rubber range. We lacked the ability to handle extreme seismic motions across building joints as well.

We entered the stainless steel market in 2004 to overcome these shortcomings. Startup included basic products of high quality with improvements such as floating flanges and a reluctance to furnish short, cheap ineffective lengths. It is our intention, as always, to build on this base and try to solve the problems other people walk away from. It would not be our way to do it any differently.

Welcome aboard.



Norm Mason



Stainless Steel Braided Annular Flexible Hoses

Stainless Steel Flexible Connectors contribute to the solution of vibration, noise, expansion and offset motion problems in piping systems. Assemblies are designed for both high and low temperatures, as well as high pressure and full vacuum.

Stock sizes include 1/2" (15mm) through 16" (400mm) pipe diameter. Temperature ranges are from below 0°F (-18°C) to 850°F (454°C) when using our standard 304 stainless steel. On rare occasions, when temperatures as high as 1500°F (816°C) are needed, Type 316 or 321 are available too. Most standard construction is single braided, but we can provide double braid for higher pressures or omit the braid for low pressure venting or exhaust applications.

Standard end fittings include a fixed ASA 150, carbon steel raised face plate flange on one end and a floating flange on the other. A floating flange is very important as twisting full strength pipe to line up bolt holes is not an issue, but torquing a stainless hose to make up for poor alignment can cause immediate or early failure. Other fittings include NPT Carbon Steel Nipples or Grooved Ends, as well as any combination. Metric threads and drillings are available for export applications.

Stock lengths vary from the minimum "Pump Connectors" to as many as three additional stock lengths for greater movements. Special lengths are available, but take a little longer.

Commercial pricing pressure forces us to include the very short Nippled or Flanged Pump Connectors that range from 1/2" x 6 1/2" (15 x 165mm) thru 16" x 16" (400 x 400mm). These very short lengths are a travesty with a barely functional length of flexible hose connecting 2 long nipples. They have been shortened year after year from the old standards until no one dares make them shorter. We sell them when specified but recommend our longer lengths at a minor addition in cost, but a tremendous improvement in performance.

In addition to the equa-ended flexible connectors, we also manufacture concentric reducers that act as a flexible transition piece between different sizes of piping, particularly at pump



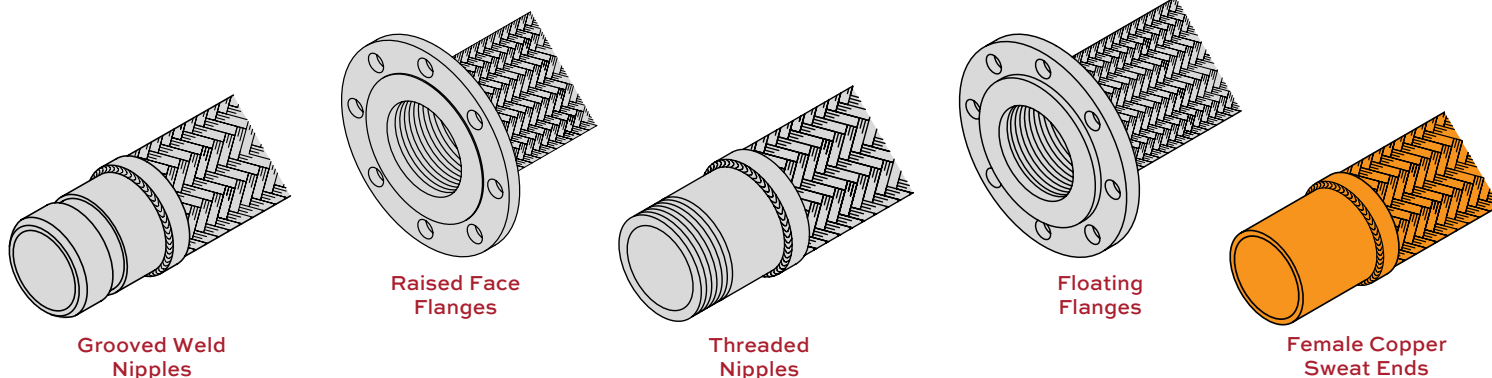
See Bulletin BH-29,
pages 8-7 - 8-24

suction and discharge. They are usually used with an ASA 150 Carbon Raised Face Steel Plate Flange on one end and a Floating Flange on the other. Other configurations are available as well.

To complete this flexible connector offering, we stock bronze braided hoses with copper female ends for sweating into copper piping systems and the usual copper ended Freon connectors.

We have CSA, UL & NSF for most of these products.

FITTING OPTIONS

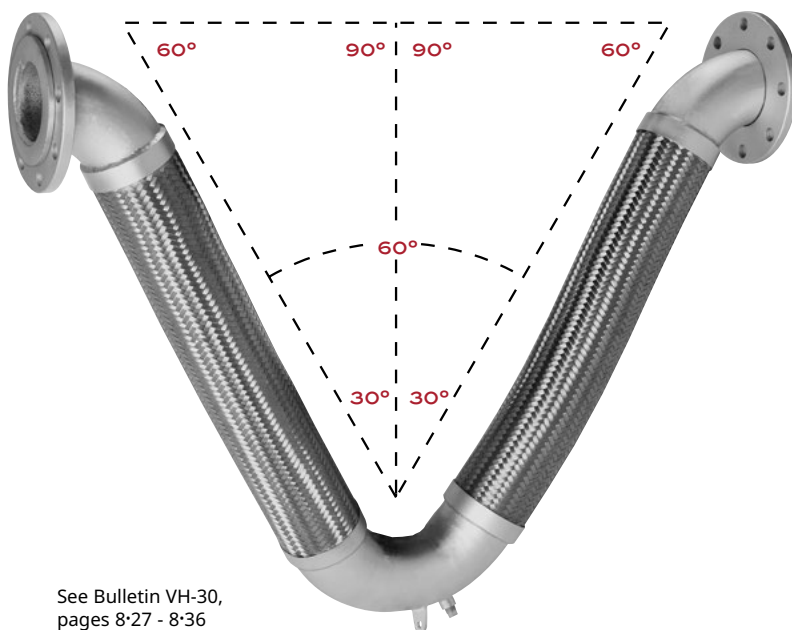


Seismic “Vee” Assemblies

Many buildings are separated by expansion joints through the walls and floors. During an earthquake, the two adjacent parts resonate with relative motion of as much as $\pm 4"$ (102mm) in shear as well as toward and away from one another. Vertical motion is minimal. We have developed a unique product to handle this seismic motion. Our Vee construction is based on two 30°, 60°, 90° triangles complimenting one another to form a 60° “Vee” at the bottom. We thought the concept so interesting that we tooled up for these fittings rather than use the common 45°, 90° and 180° configurations. Since it may be necessary to fit these Vee’s at odd angles, depending on space conditions, we have floating ASA 150 carbon steel flanges on both ends. No competitive product can be rotated this way.

Vees are often used in simple expansion applications as well.

Other fittings include Carbon Steel NPT Nipples, Weld Ends, Copper Female Sweat Couplings or Grooved Ends, as required. All of our Vee assemblies are designed for $\pm 4"$ (102mm) movement in all directions. Other manufacturers offer $\pm 2"$ (51mm) designs as well to reduce cost, but it is not worth the risk of misapplication.



See Bulletin VH-30,
pages 8-27 - 8-36

See Bulletin EJ-34,
pages 8-49 - 8-54



Large Special Order & Stock Expansion Joints

Many expansion joints are custom manufactured to diameters as large as 96" (2438mm). The construction varies, depending on the operating pressure and the required movements. We can provide these unusual constructions in virtually every configuration. We can build to your specific product description or complete our own recommendations based on your movement and pressure requirements.

Please let us have your inquiries.

We also stock expansion joints in 2" to 16" (50 to 400mm) diameters with 2" (51mm) axial and 1/4" (6mm) transverse capability.

See Bulletin ASG-33,
pages 8-55 - 8-58



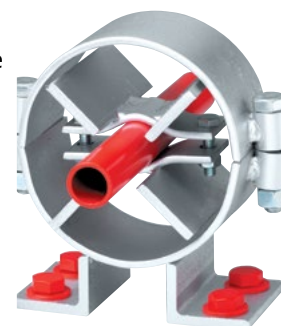
Pipe Alignment Guides

Our newly developed Adjustable Sliding Guides offer many improvements over other guides: one size guide for all thicknesses of insulation; less friction with our Stainless Steel Slides; sturdier construction; and they can be used as load supports.

We still carry spider guides, but the ASG design is far more versatile.

Anchors are designed and manufactured as needed.

See Bulletin SPG-37,
pages 8-62

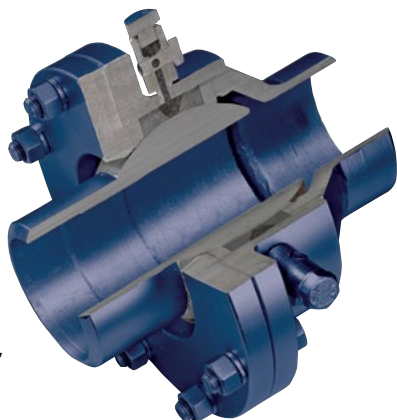


Expansion Compensators & Housed Expansion Joints

Expansion Compensators and Housed Expansion Joints are basically a bellows that is protected by and guided within a pipe housing. While the industry offers two styles, one of which is referred to as "internally pressurized" and the other "externally", they both serve the same function and we prefer the "externally pressurized" for improved bellows stability. They are furnished with a Fixed ASA150 Drilling Raised Face Carbon Steel Flange on the one end and a Floating Flange on the other. The alternates are Carbon Steel Threaded Nipples, Weld or Grooved Ends or Copper Female Sweat Ends as needed.

There are three movement choices: 2" (51mm) compression and 1/2" (13mm) extension; 4" (102mm) compression and 3/4" (19mm) extension; or 8" (203mm) compression and 1 1/2" (38mm) extension. They are all designed for systems that will run hot and the slight extension is only there for those occasions when ambient temperatures are fairly high during installation, and the installation drops to some very low temperatures before they are put into hot water or steam service.

See Bulletin HEJ-31,
pages 8-73 - 8-84



See Bulletin BJ-35,
pages 8-63 - 8-66

See Bulletin SJ-36,
pages 8-67 - 8-70



Ball Joints

When ball joints are installed at each end of a pipe offset, the system can accommodate much larger movements with much lower anchorage requirements than solid pipe in the same configuration.

We not only sell our flanged and weld end ball joints, but we engineer the systems should there be no specifications or if specifications call for design by vendor.

Slip Joints

Our latest design rounds out our group of "no major failure" products. Slip joints incorporate many of the design features of ball joints.

Seals are made using high pressure, graphite enriched packing that is easily pressurized or replaced. Rather than 4" (102mm) and 8" (203mm) movement, we stock 6" (152mm) exclusively. This meets the frequent demands for movements up to 2" (51mm) more than 4" (102mm). Movements larger than 6" (152mm) are rarely required.