



# FLEXIBLE SOLUTIONS FOR INDUSTRY





## THE COMPANY

Ayvaz holds the production experience of flexible connection parts at various types and customized designs for the industry for over six decades.

The reputation of our company remains high thanks to our capability of providing innovative and reliable solutions for our cooperators.

We work day and night to make our partners feel close to our expertise of "flexible solutions" wherever their businesses are located.

## CONSULTING

We offer a wide range of products for all possible industries. We also provide engineering activities from product specification to project estimation and work on to provide the most specific solution for each case.

We delightfully share our expertise with the potential clients who experience problems with calculation for piping systems and product selection in new plants.





## CUSTOMER RELATIONS

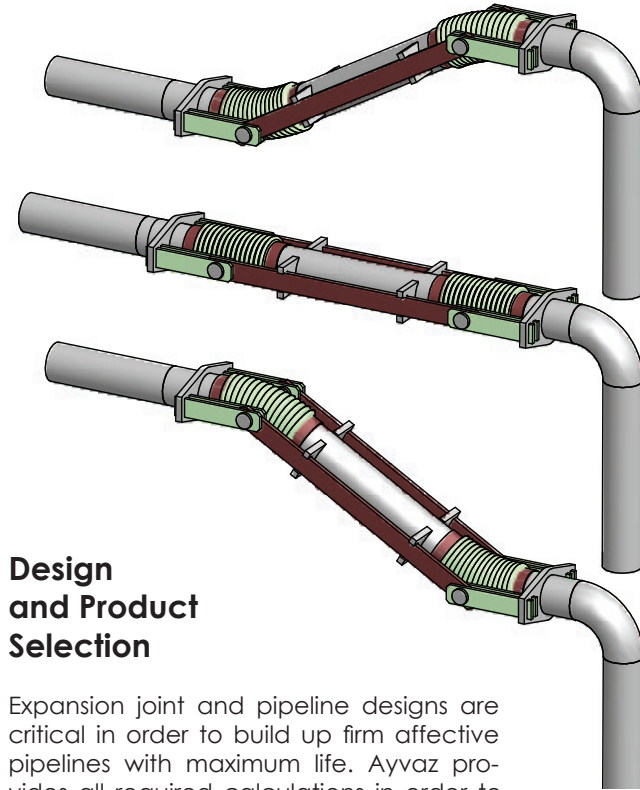
In order to locate ourselves close to the customers, Ayvaz opens new offices all around the world and employs local individuals who are trained at our competence center in Istanbul. These individuals play a key role to maintain our vision of “think global, be local”.

Pre-sales operations enable our sales team to identify and analyze customer needs and problems.

We very much value gathering the feedbacks and suggestions of the customers in order to develop ourselves and our communication skills.



## RELIABILITY IN EACH STAGE



### Design and Product Selection

Expansion joint and pipeline designs are critical in order to build up firm affective pipelines with maximum life. Ayvaz provides all required calculations in order to define the thermal expansion amount and the stress occurred accordingly.

These calculated values are used at design process of our expansion joints to provide most reliable solution.

At Ayvaz we use BM2 EJMA 9 design software for expansion joints also provides all necessary data for the expansion joints also the forces to be conducted to pipe supports for appropriate pipe support designs.



### Production

Ayvaz is the first metal bellowed expansion joint manufacturer of Turkey and one of the biggest ones in Europe.

The company has started expansion joint production in 1975 and been developing the product range of expansion joints for all industrial requirements since then.

We keep up with the state of art technology production techniques and train our employees as to use and control these techniques individually.



We are able to produce metal bellowed expansion joints at the sizes from DN25 up to DN3000 and flexible metal hoses at the sizes from DN6 up to DN300. We can also design and produce bigger expansion joints for any special purpose on the demand of any industry.

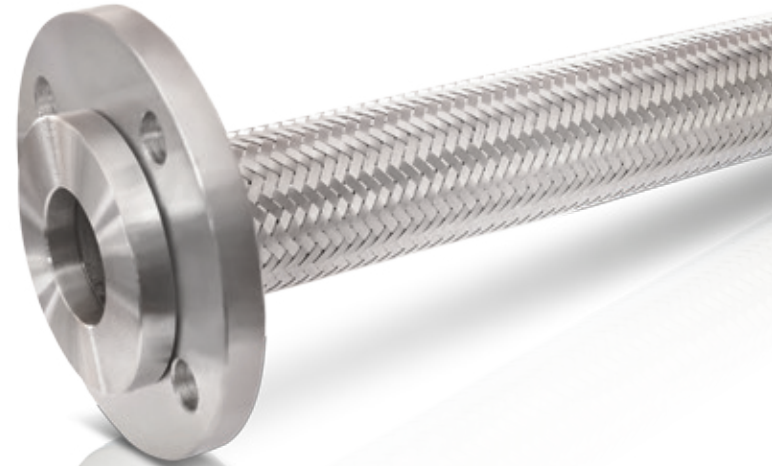
## RELIABILITY IN EACH STAGE

### Quality

We aim to provide products to work with maximum service life for any operating condition. We constantly apply various tests on our goods to maintain the highest quality possible accordingly.

Ayvaz has a TÜV accredited testing laboratory that we can make following tests in our production facility.

Pressure resistance  
X-Ray Welding Control  
Material Control (CCD+Spectrometer)  
Penetrant Test  
Hydrostatic Test  
Elongation  
Fatigue, Safety



### Certification

As being the leader of installation sector, Ayvaz operates its production complying with the standards that recognized by the most important national and international bodies and industrial associations.



This philosophy brings benefit to the users as well as helps to improve general quality and harmony at expansion joint and flexible metal hose applications.



## AYVAZ QUALITY



**We, at Ayvaz are committed wherever we operate to;**

Certificating all the products in the scope of European Union directive with CE marking.

Integrating "Quality, Environmental, Health & Safety" (OHSAS: 18001) in all our processes and at all levels of our organization and ensuring that they are on integral part of our management systems.

We are working on to deliver our expertise on flexible elements to our partners in every possible way.

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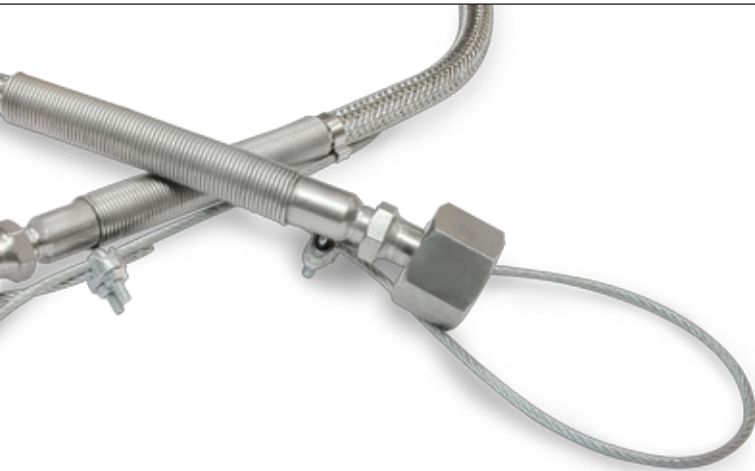
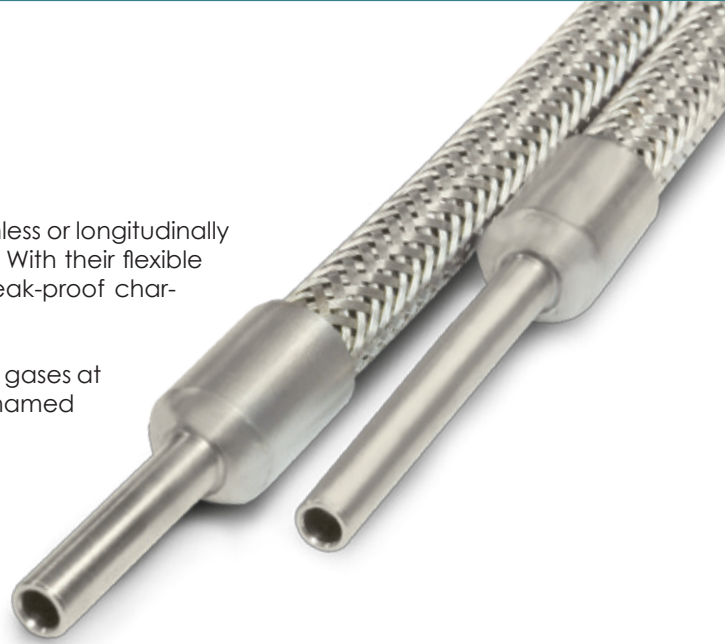
## AYVAZ METAL HOSES

### Corrugated Hoses

Corrugated metal hose production is based on forming the seamless or longitudinally welded pipes by using special mechanical and hydraulic tools. With their flexible structure, corrugated hoses provide the systems an absolute leak-proof character.

Corrugated hoses can also fulfill the task of carrying the fluids and gases at the pressured and vacuum systems, as a result of that they are named pressure hoses as well.

Corrugated hoses can be used as the movement, vibration and thermal expansion absorbing flexible connection elements with their low costs as well as the feeding purposes. Flexibility and the pressure resistance of the corrugated hoses are related to the shape and spring ability of corrugations.



### Advantages

- They resist well against twisting tension arises of the sudden pressure changes.
- They can be applied at very high temperatures.
- They provide perfect sealing features for high pressure applications.
- They eliminate the connection inaccuracies.
- Stainless steel structure is highly resistant against corrosion.
- Easy applicable connectors with long-service life provide financial benefits to the users.
- They prevent the vibration in the pipelines and boost the security of the connected systems.



## AYVAZ METAL HOSES

### Typical Application Areas

- Any air, gas, water, oil or refrigerant liquid lines in structural building equipment.
- Heating, Air Conditioning and ventilation applications.
- Chemical and petro-chemical plants.
- Automotive industry.
- Super-heated steam and oil applications.
- Cooling systems and transporting relevant fluids.
- Exhaust lines and pipeline bridges.
- Ship building and drilling.

### Design

Parallel Corrugated Flexible Metal Hose (DIN EN ISO 10380)

#### **Hose (Stainless Steel AISI 316L, DIN 14404)**

Temperature Range: Between -270 °C and 600 °C (only for the hose)

#### **Braiding (Stainless Steel AISI 304, DIN 14403)**

Hose braiding is tightening to the connection elements at both ends to compensate the longitudinal force which is the result of internal pressure. The flexibility of the braiding is also affective on the movement capacity of the hose. Braiding is made by crossing right and left handed wire coils through over and under each other. Additionally, hose braiding helps to protect the hose from external damages with absorbing the external tensions. The hoses may be produced with single or multi layered braiding.

## AYVAZ EXPANSION JOINTS

### Ayvaz Axial, Lateral and Universal Expansion Joints

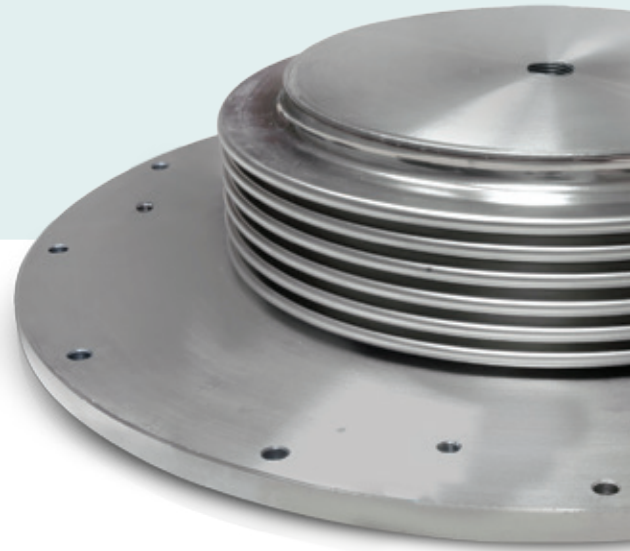
An expansion joint is a flexible element. The bellows of expansion joints are designed to absorb the movements become as the result of thermal changes and vibration. Number of bellows is depended on the amount of expansion movement.

For different industrial needs there must be some factors of designing expansion joints to meet all those different needs. The bellows must provide the required flexibility and resistance against the peripheral pressure.

### Advantages

Expansion joints that are selected and installed properly provide reliable connections with following features.

- Resistant against pressure and vacuum.
- Resistant against temperature
- Rust-proof
- Maintenance free
- Long service life
- Economic





## Typical Application Areas

### Pipelines

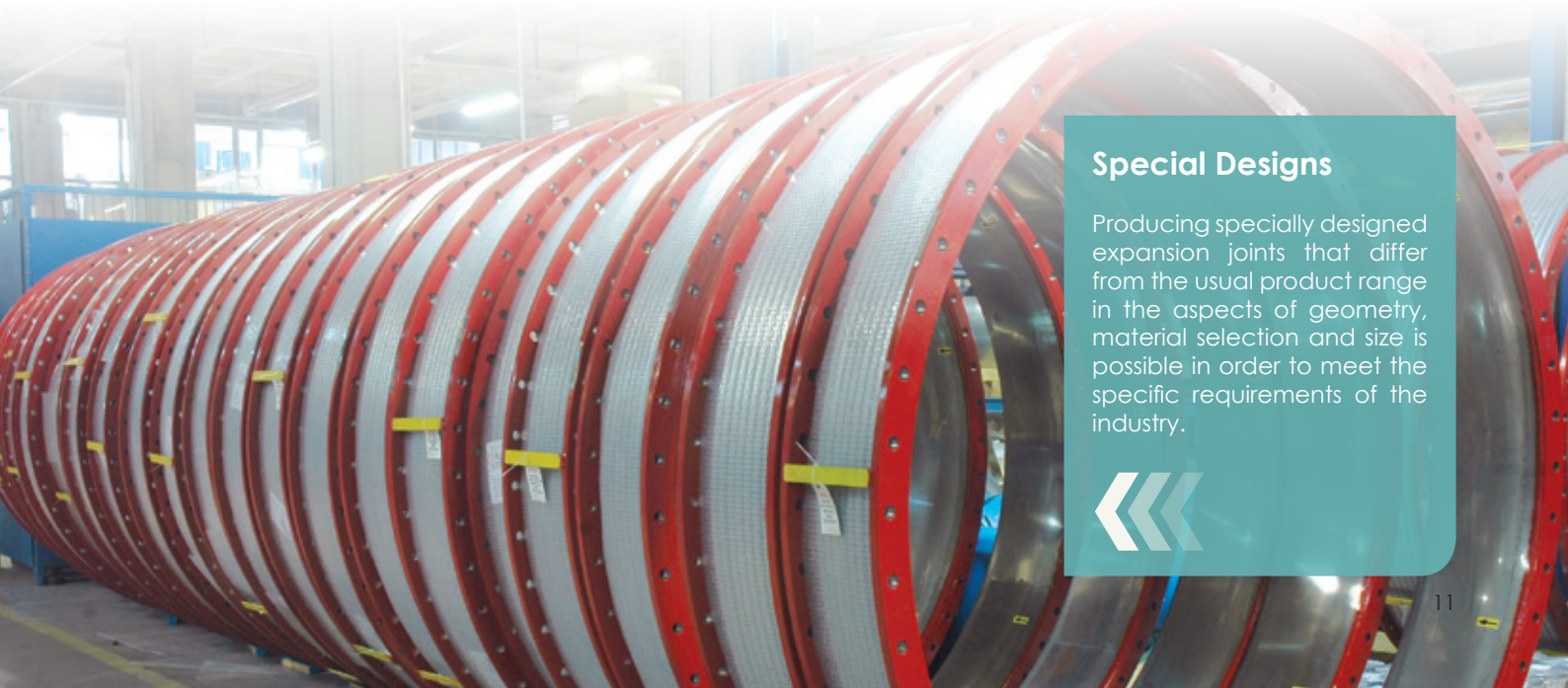
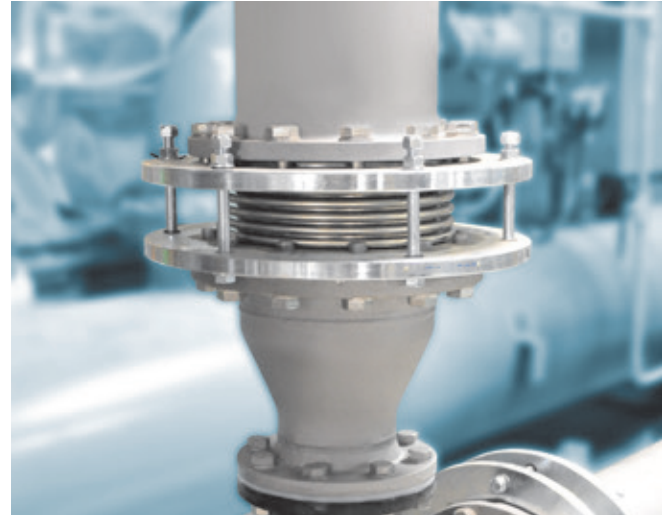
- To absorb the expansion at pipelines used to transport heating or cooling fluids.
- As a protective jacket for the pipelines that nested each other. Chemical, Plastic, Glass Petro chemical processing. Refineries, nuclear and thermic stations.

### Industrial Production

- As an assemble tool for the pressured vessels machine and pipeline installations.
- To provide a non-stressed area for the sensitive tools such as pumps, compensators and turbines.

### High Pressure and Temperature Applications

- Glass, aerospace, rubber, chemical, metallurgy, oil processing, nuclear and thermal power stations.



## Special Designs

Producing specially designed expansion joints that differ from the usual product range in the aspects of geometry, material selection and size is possible in order to meet the specific requirements of the industry.







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