



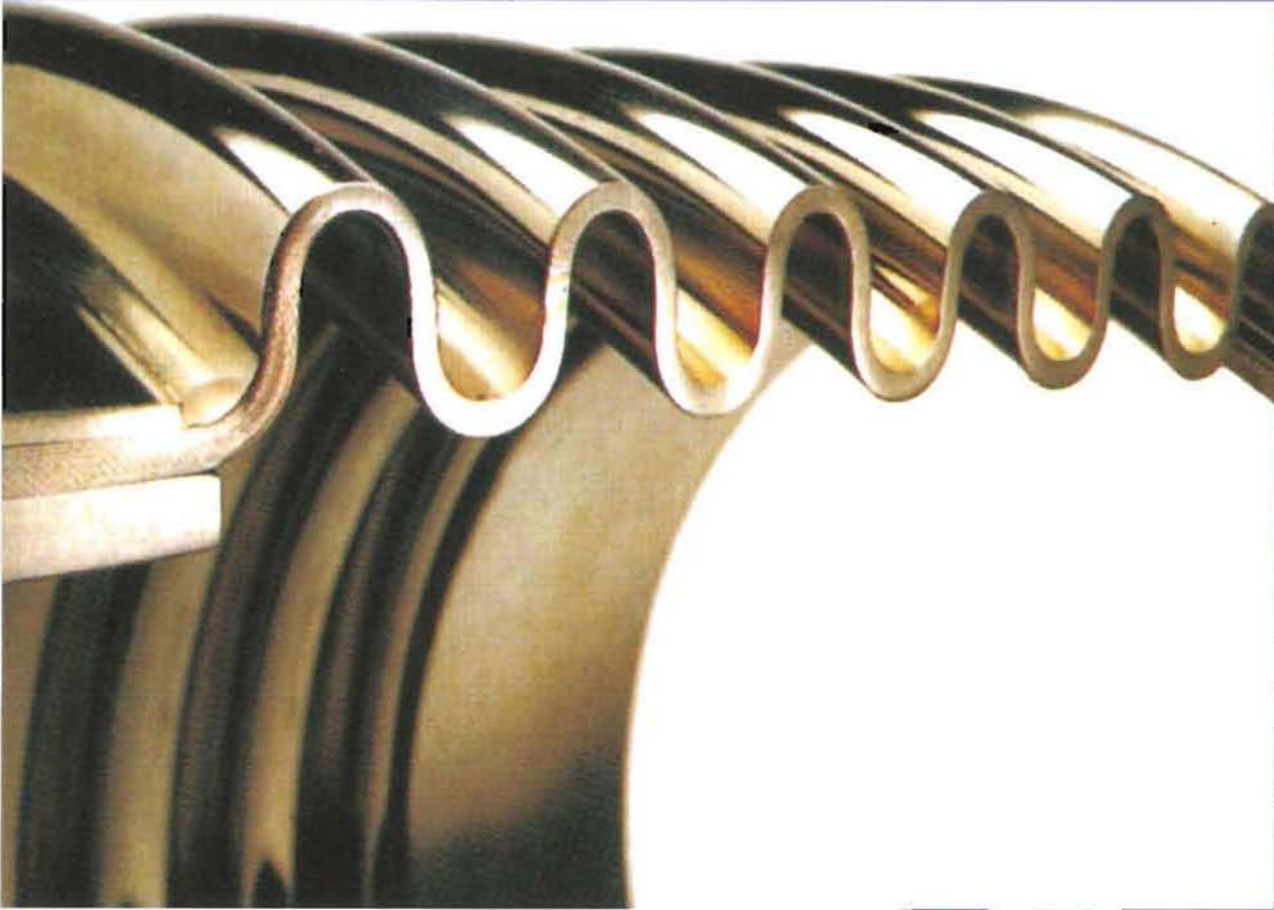
SIAM STEEL WORKS CO.,LTD.



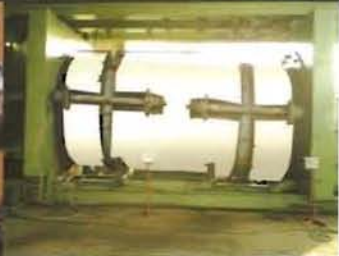
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Cert. No. Q53605



Cert. No. Q225 / 00



# EXPANSION JOINTS



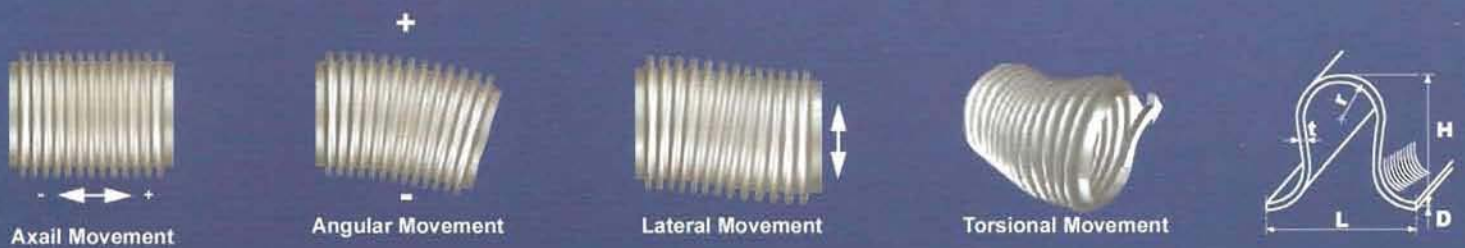


# EXPANSION JOINTS

Expansion Joints are widely used to allow movement in piping systems while containing pressure and medium running through it. Differential settlement, thermal growth, vibration or pressure pulsation can cause movement in piping system. When flexibility for this movement can not be designed into the piping system itself, expansion joints are the ideal solutions.

With more than 20 years of design and fabrication works of steel pipes, fittings and mechanical couplings SSW has, in technical cooperation with Megaflexon, developed to design and produce Metal Bellow Type Expansion Joint and Steel Flexible Joints for waterworks, drainage, wastewater, irrigation, power generation and process engineering.

SSW's commitment to quality begins as early as at the quotation stage, which is the foundation on which the end product will be built, to ensure compliance with the customer's requirements. SSW warrants that the product furnished will, at the time of delivery, free from defects in material and workmanship.



## DESIGN OF EXPANSION JOINT

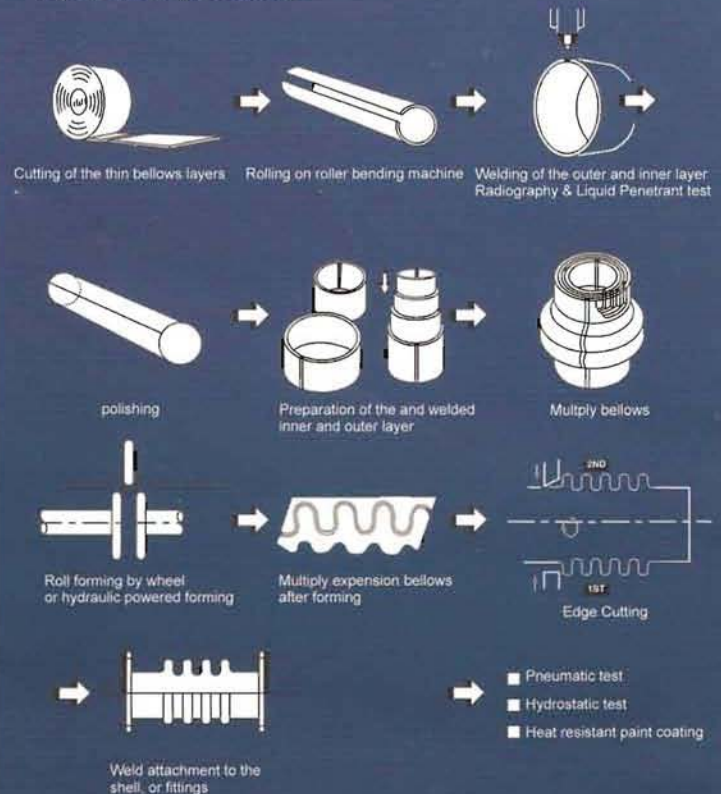
### Requirements for the design

The followings are requirements for the design of the Expansion Joint. These requirements shall be fulfilled through your inquiry.

1. Pipe size	Nominal diameter of pipe
2. Standard of pipe, wall thickness, material	Standard of pipe( AWWA, BS, API etc.), schedule no. in the case of non-standardized pipe, outside(or inside) diameter, wall thickness, material.
3. Connection	Beveling configuration(distinction between internal and external, angle, etc.) in welding, standards, dimension, material, etc., in flange connection, and particular standards( ISO, ANSI etc.)
4. Fluid	Needed for selecting the material for bellows.
5. Pressure	Needed for selection of type.
6. Temperature	Needed for selecting the material and type of bellows.
7. Movement and direction	Needed for selecting the number of corrugations, single and double. If these data are not manifest, contact us with respect to pipe length(distance between the fixing points) and temperature. (We will calculate them).
8. Material for bellows	We select the most suitable, depending upon the fluid, temperature and pressure. However, examine and enter the temperature of fluid, the property of material, etc., if you particularly want to specify.
9. Presence of inspection by authorities concerned and in attendance thereof	Always enter the necessity of inspection in the attendance of the Authority or Third-Party inspection. Further, enter also the necessity of specific inspection, X-ray, liquid penetrant etc.
10. Equation to be used in calculation	Generally, we carry out the calculation based upon the equation derived from EJMA and the experimental value. If you particularly specify the number of expansion cycles, enter that specification.
11. Others	Consult with us about the use of Expansion joint when it is used in a special atmosphere, when the fixing points are not provided, etc. We will assist you in the examination of pipe line, the selection of material and type, the calculation of load in the fixing points, etc.

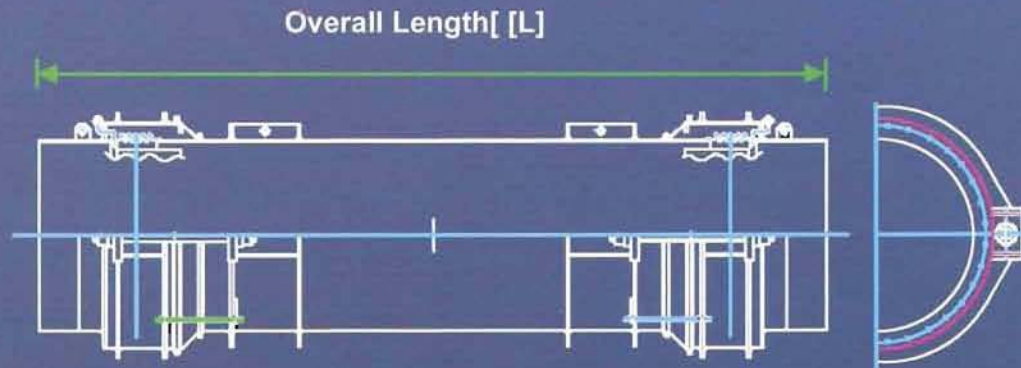
### Expansion Joints

#### Fabrication procedure





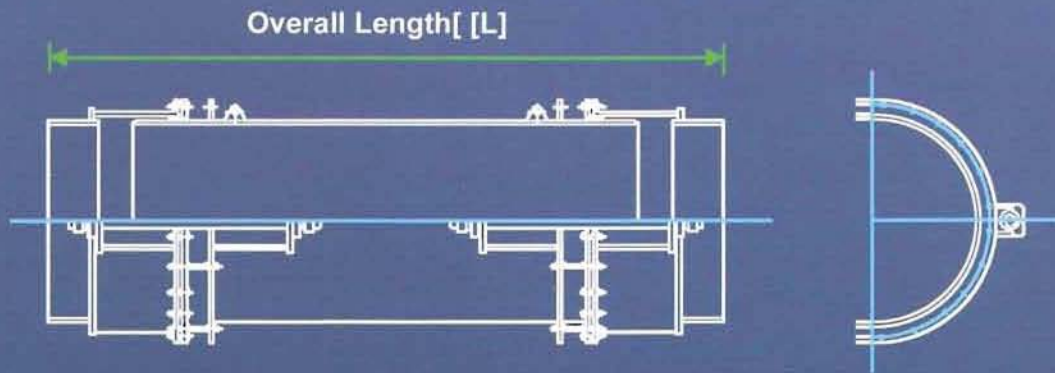
# METAL BELLOW TYPE EXPANSION JOINT



DN	No.Of Convo- lution	The Overall Length, L [mm] For the Settlement Amount, Y [mm]		
		Y=200	Y=500	Y=800
300	5	1800	3300	3600
350	5	1800	3500	3800
400	5	1800	3500	3800
450	5	1900	3500	4000
500	5	2000	3500	4200
600	5	2100	3600	4600
700	5	2100	4000	4600
800	5	2200	4400	5100
900	5	2300	4800	5500
1000	5	2600	4800	5900
1200	5	2800	4900	6500
1350	5	3100	5400	6500
1500	5	3200	5400	6500
1800	5	3400	5800	7200
2000	5	3500	6200	7800
2300	5	3500	6200	8000

Note: Other Variations to meet particular conditions are available upon request.

# STEEL FLEXIBLE JOINT

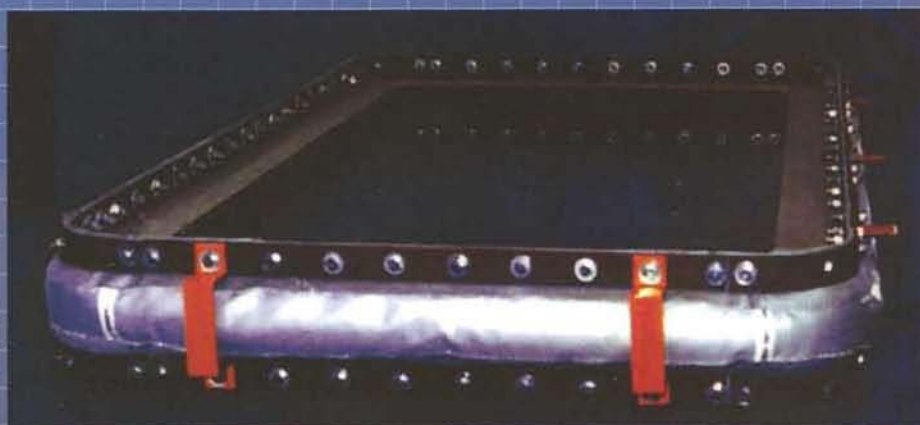


DN	Outside Diameter [mm]	Wall Thickness		The Overall Length, L [mm] For the Settlement Amount, Y [mm]		
		Aboveground [mm]	Underground [mm]	Y=200	Y=500	Y=800
300	323.9 ± 1.6	6.0	6.0	3300	6100	9100
350	355.6 ± 1.6	6.0	6.0	3300	6100	9100
400	406.4 ± 1.6	7.9	6.0	3300	6100	9100
450	457.2 ± 1.6	7.9	6.0	3300	6100	9100
500	508.0 ± 1.6	7.9	6.0	3300	6100	9200
600	609.6 ± 1.6	11.1	6.0	3400	6200	9300
700	711.2 ± 1.6	11.1	6.0	3400	6300	9300
800	812.8 ± 1.6	12.7	7.9	3500	6300	9300
900	914.4 ± 1.6	12.7	7.9	3500	6300	9300
1000	1016.0 ± 1.6	12.7	9.5	3600	6400	9500
1200	1219.2 ± 1.6	15.9	11.1	3600	6500	9500
1350	1371.6 ± 1.6	15.9	11.1	3700	6500	9500
1500	1524.0 ± 1.6	19.1	12.7	3700	6500	9600
1800	1820.0 ± 3.0	25.4	15.9	3900	6700	9700
2000	2020.0 ± 3.0	max.56	19.1	3900	6700	9800
2300	2320.0 ± 3.0	max.56	max.56	4000	6800	9800

Note: Other Variations to meet particular conditions are available upon request.



## FABRIC EXPANSION JOINT



## RUBBER EXPANSION JOINT





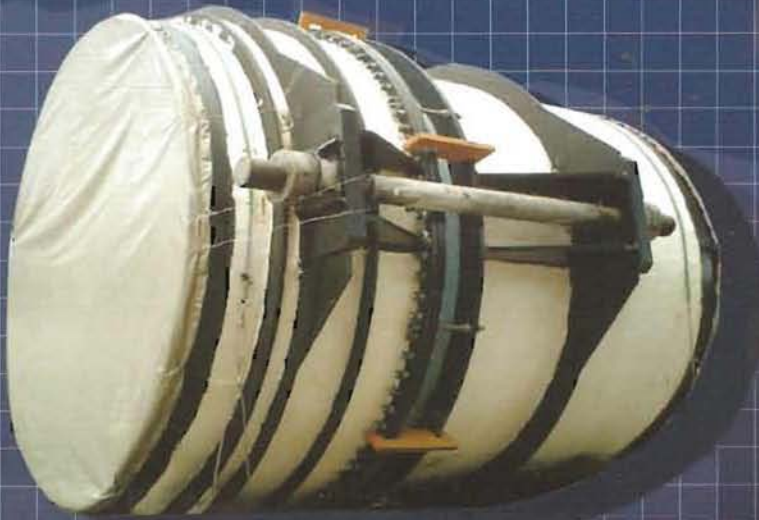
**AXIAL METAL EXPANSION JOINT**

**BURIED TYPE METAL EXPANSION JOINT**



**BURIED TYPE METAL EXPANSION JOINT**

**STEEL FLEXIBLE JOINT**



**MANUFACTURER**  
**SIAM STEEL WORKS CO.,LTD.**  
79 Moo 6, Rama 2 Rd.,  
T. Bangkawe, A. Muang, Samutsongkham 75000  
E-mail: [sswfactory@fycos.com](mailto:sswfactory@fycos.com)  
Tel: 0-1645-6304-5 Fax: 0-3474-7020



**SALES OFFICE**  
**SIAM SYNDICATE TRADING CO.,LTD.**  
SST Building, 999 Moo 6, Navamin Rd.,  
Klongkum, Bungkum, Bangkok 10240  
E-mail: [siamsyndicate@sst.co.th](mailto:siamsyndicate@sst.co.th)  
Tel: (662)7336080-99 Fax: (662)3758160-1