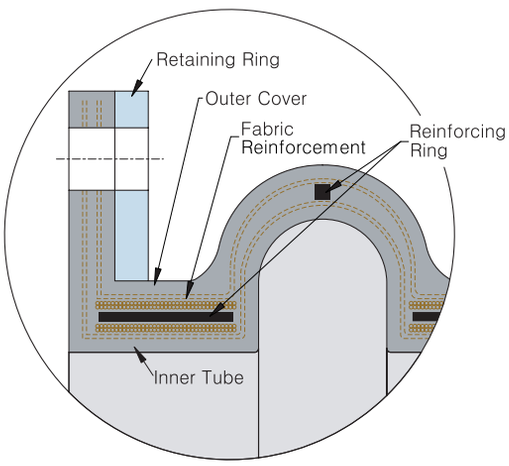
Type 21EP
Externally Pressurized Joint

Submerged Application

When expansion joint piping system is submerged in water and the medium is conveyed through the pipe line, the expansion joint is subject to internal and external pressures as arch element is externally pressurized. Therefore, the joint in this pipe line must be engineered and designed to withstand external pressure as well as internal one and also to be suitable for vacuum service.



Construction

Tube

- Seamless, smooth construction of a tube rubber extends through the bore to the outer edge of both flanges.
- Extra thick tube to yield superior performance in harsh conditions.

Reinforcements

- Totally impregnated high strength calendered polyester fabric.
- Heavy duty construction of metal rings : rectangular body rings or solid annular rings bonded into carcass and round or square arch support ring encapsulated with rubber inside the arch.

Cover

- Homogeneous leak tight multi-layers of rubber to prevent the water from attacking the carcass.
- Extra thick elastomeric cover to protect the body materials from external pressure conditions.
- Standard material is Neoprene tube and cover with SS 316 retaining rings.
  Other elastomers and steel materials are available.

Features

- **Greater strength and higher pressure rating :** The heavy duty metal reinforcing rings embedded in the carcass and arch provide additional hoop strength, increasing the ability to withstand higher external and internal pressure rating. All sizes up to DN1800 are designed to withstand external pressure produced in 50 meters depth of seawater/water.
- **Fully engineered and field proven :** All type 21EP have been engineered and tested in factory to ensure long life time and reliable service. They are unmatched design proven by piping designers, pressure vessel designers and consulting engineers.
- **Bolt hole lining :** Totally rubber lined bolt holes prevent water from penetrating into the carcass through the holes and protect fabric and metal reinforcements in carcass, resulting in longer service life and durability.

Pressure Rating and Movement Capability

Nominal Size		Minimum Length		Max. Pressure		Vacuum Rating	Movement Capability			
				Internal	External		Comp.	Ext.	Lat.	Ang.
DN	inch	mm	inch	(bar)	(bar)	(mmHg)	(mm)	(mm)	(mm)	(deg.)
50	**2**	150	6	15	10	760	20	15	12	30.6
65	**2.5**	150	6	15	10	760	20	15	12	25.3
80	**3**	150	6	15	10	760	20	15	12	21.5
100	**4**	150	6	15	10	760	20	15	12	16.5
125	**5**	150	6	15	10	760	20	15	12	13.3
150	**6**	150	6	15	10	760	25	20	12	14.7
200	**8**	150	6	10	10	760	25	20	12	11.1
250	**10**	200	8	10	10	760	25	20	12	8.9
300	**12**	200	8	10	10	760	25	20	16	7.5
350	**14**	200	8	10	10	760	25	20	16	6.4
400	**16**	200	8	10	10	760	25	20	16	5.6
450	**18**	200	8	10	10	760	25	20	16	5.0
500	**20**	200	8	10	10	760	25	20	16	4.5
550	**22**	250	10	10	10	760	30	25	18	5.1
600	**24**	250	10	10	10	760	30	25	18	4.7
650	**26**	250	10	8	8	760	30	25	18	4.3
700	**28**	250	10	8	8	760	30	25	18	4.0
750	**30**	250	10	8	8	760	30	25	18	3.8
800	**32**	250	10	8	8	760	30	25	18	3.5
850	**34**	250	10	8	8	760	30	25	18	3.3
900	**36**	250	10	6	6	760	30	25	18	3.1
950	**38**	250	10	6	6	760	30	25	18	3.0
1000	**40**	250	10	6	6	760	30	25	18	2.8
1050	**42**	300	12	6	6	760	35	25	20	2.7
1100	**44**	300	12	6	6	760	35	25	20	2.6
1150	**46**	300	12	6	6	760	35	25	20	2.5
1200	**48**	300	12	6	6	760	35	25	20	2.3
1250	**50**	300	12	6	5	760	35	25	20	2.3
1300	**52**	300	12	6	5	760	35	25	20	2.2
1350	**54**	300	12	6	5	760	35	25	20	2.1
1400	**56**	300	12	6	5	760	35	25	20	2.0
1450	**58**	300	12	6	5	760	35	25	20	1.9
1500	**60**	300	12	6	5	760	35	25	20	1.9
1650	**66**	300	12	6	5	760	35	25	20	1.7
1800	**72**	300	12	6	5	760	35	25	20	1.6

1. Multiple arch design is available
2. Contact Kurbo for additional information such as other sizes, lengths and pressures not listed.