

Expansion tanks

<i>ER series</i>	4
<i>ERE-ERCE series</i>	6
<i>ERL series</i>	8
<i>ERP series</i>	10
<i>D series</i>	14
<i>Sizing of an expansion tank with a fixed bladder –technical data</i>	16
<i>ERL-DAC series</i>	18
<i>Sizing of an auto-pressurised expansion tank -technical data</i>	21
<i>Some examples of installation</i>	24
<i>(flyleaf of the back cover) Universal diagram</i>	





**COMPANY
WITH QUALITY SYSTEM
CERTIFIED BY DNV
== ISO 9002 ==**

E x p a n s i o n t a n k s

Expansion tanks are devices designed to absorb the volume change of water or some other liquids, thus allowing the correct operation of a heating plant during all its operative phases.

Elbi produces closed expansion tanks composed by a tank in sheet steel and a bladder in synthetic material which separates the heating circuit from a chamber previously charged with air.

Expansion tanks with a bladder, which are available from 5 to 5.000 litres, are constructed by using quality sheet steels according to UNI-EN regulations and welded according to some strict qualitative standards; they are produced on automated lines, welded with procedures and approved weld materials, equipped with bladders in special rubber used against heat and ageing which are resistant up to 110° C (all of them are produced by ELBI); they are previously charged at a pressure of 0.5 – 1.0 – 1.5 bars according to the static height of the water column.

Once the construction has been completed, all the models are subjected to a hydraulic test with a pressure of 1.5 times higher than the designed one.

There are also some versions constructed according to the most important European regulations in force.

E l b i b l a d d e r s

Elbi produces all the bladders which mounts on its own equipment, as for the production it makes exclusive use of modern injection presses, the most advanced ones in this sector.

Dies designed by the Elbi technical department ensure the complete compatibility with tanks. All the bladders are tested by the company's quality control service at the end of the production run. Bladders which are used in the ERL series are constructed by applying an exclusive process which allows to obtain the exact dimensions corresponding to the tank's actual volume, thus eliminating every kind of mechanical stress during the operation.

Their mixing is the result of some studies and researches carried out directly by the Elbi technical department.

ER series

5 to 24 litres

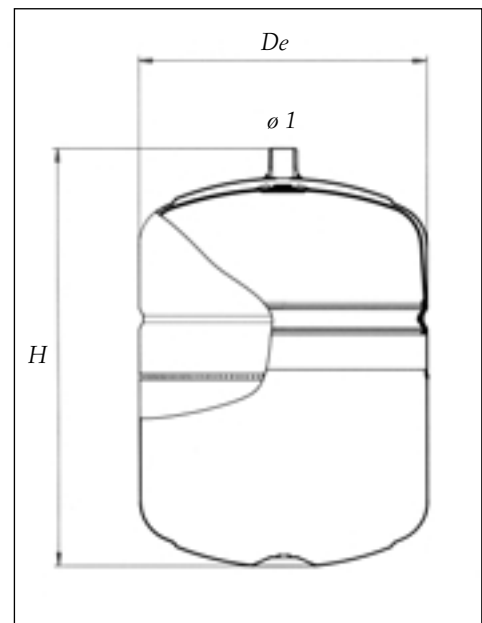


The available models from 5 to 24 litres are designed to be installed in different types of plant. They are not tested by ISPESL, as their water content is lower than 25 litres (R.D. 12/05/1927, NR. 824).

Besides, they are available in special versions, constructed according to the most important international regulations: TÜV, WRc, UDT, CZ, etc.

Characteristics

- (Designed working temperature: $-10^{\circ} \div 110^{\circ}\text{C}$)
- Sturdy structure in high-quality steel, designed to endure for a long time.
- Painting with long life epoxy powders.
- Bladders in special rubber with those characteristics which ensure better performances and a longer life.
- In conformity with Standard 97/23/CE (PED)



Model	Capacity litres	Maximum working pressure bar	Precharge pressure bar	De	H mm	ø1	Packaging mm
ER5	5	10	1,5	204	225	3/4"	210 x 210 x 250
ER8	8	10	1,5	204	300	3/4"	210 x 210 x 320
ER12	12	10	1,5	270	300	3/4"	280 x 280 x 310
ER18	18	10	1,5	270	410	3/4"	280 x 280 x 450
ER24	24	10	1,5	320	355	3/4"	330 x 330 x 375

1MPa = 10 bar

Selection of the expansion tank

The table simplifies the choice of the ELBI expansion tank to be installed in hot water systems. The selection of the tank can be effectuated starting from the system's total capacity or from the plant's power, taking into consideration an average content of 12 litres per 1000 Kcal/h of power and a plant's maximum working pressure of 3 bars.

Model	Precharge pressure bar	Plant height meters m	Tank's volume acceptable litres	Tank's absorption capacity %	Temperature difference at = 90° C -14°C Δ coefficient of expansion 0.035	
					Total water content in the plant litres	Heat-generator's power Kcal/h kW
ER5	0,5	5	3,1	62	89	7.400 8,6
	1	10	2,5	50	71	5.900 6,86
ER8	0,5	5	5	62	143	11.900 13,84
	1	10	4	50	114	9.500 11,4
ER12	0,5	5	7,5	63	214	17.800 20,7
	1	10	6	50	171	14.250 16,57
ER18	0,5	5	11,3	63	323	26.900 31,3
	1	10	9	50	257	24.100 28,2
	1,5	15	6,7	37	191	15.900 18,5
ER24	0,5	5	15,5	65	443	36.900 43
	1	10	12	50	343	28.600 33,26
	1,5	15	9,3	39	266	22.200 25,82

