

ESPIRAL PLUS RANGE

Sucção I

Spiral flexible pipe for light duty service (suction and discharge) – EN ISO 3994 Type 1

The Espiral Plus – Sucção I range pipes with helicoidal thermoplastic reinforcement (spiral flexible pipe) are manufactured by co-extrusion according to standard EN ISO 3994 for Type 1 light-duty service.

Sucção I flexible pipes are characterised by their high flexibility, mechanical reinforcement with a rigid spiral (helical thermoplastic – reinforcement) with a suitable geometric shape (rectangular or circular) providing better resistance to impact and crushing, are light and have good resistance to abrasion.

Sucção I spiral flexible pipes are non-toxic, free from heavy metals and comply with good manufacturing practices for Food Contact Materials.



Ø _{int} (DN) (mm)	Ø _{ext.} (mm)	Maximum working pressure		Vacuum	Bend radius (23°C) (mm)	Coils length (m)
		(23°C) (bar)	(55°C) (bar)	(absolute pressure) (23°C and 55°C) (bar)		
20 ±0,75	26,8	5,6	1,6	0,65	100	25
25 ±1,25	32,4	5,6	1,6	0,65	125	7 25 50
*30 ±1,25	37,4	5,6	1,6	0,65	150	25 50
32 ±1,25	39,8	4,0	1,3	0,65	160	50
*35 ±1,25	43,0	4,0	1,3	0,65	175	7 25 50
40 ±1,25	47,6	4,0	1,3	0,65	200	7 25 50
*42 ±1,25	50,2	4,0	1,3	0,65	210	7 25 50
50 ±1,50	59,0	4,0	1,3	0,65	250	7 25 50
*53 ±1,50	62,2	4,0	1,3	0,65	265	7 25 50
*60 ±1,50	69,2	4,0	1,3	0,65	300	25
*65 ±1,50	74,4	4,0	1,3	0,65	325	25 50
*70 ±1,50	80,4	4,0	1,3	0,65	350	25
75 -0.5+2,5	85,8	3,0	1,0	0,65	375	25
80 ±1,50	91,0	3,0	1,0	0,65	400	25
90 ±2,00	101,4	3,0	1,0	0,65	450	25

* Diameters not covered in EN ISO 3994.

Other characteristics

Material

They consist of a flexible plasticized PVC material in green or yellow crystal colour, supported in its mass by a spiral of white rigid PVC material.


The materials used in their manufacture have been tested according to standards EN 1186-1:2002 and EN 1186-3:2002 with food simulators A, B and C, complying with the limits defined in Commission Regulation (EC) No. 1935/2004, modified by Commission regulations (EU) No. 10/2011, (EU) No. 202/2014 and (EU) No. 174/2015 on Food Contact plastic materials and objects.

Note: Food simulators A, B and C are assigned to foods with a hydrophilic character and which can extract hydrophilic substances. Food simulator B should be used for foods with a pH below 4.5. Food simulator C replaces alcoholic foods with an alcohol content of up to 28% as well as foods with an important content of organic ingredients that make them more lipophilic.



Marking

The marking of Sucção I flexible pipes, is done in the helical direction with a minimum:

IBOTEC – SUCÇÃO I –  – EN ISO 3994:2014 – Tipo 1 – DNxx – xTy – Ibotec traceability code

Note: XX diameter, x quarter of year and yy last digits from year

Use



technical – industrial
use

agriculture

water conduction

food contact quality

Do not use with hot water continuously subject the spiral flexible pipes to pressure for long periods.

For light duty in suction and discharge applications, in the conduction of water, diluted aqueous solutions of chemicals and solids, for general use in industry and agriculture at an average temperature of -10 °C to +55 °C and in the transfer of fat-free drinks and food at an average temperature -10 °C to +40 °C.

Mechanical characteristics

Characteristic	Value	Test method
Hydrostatic testing at 23 °C - Minimum burst pressure of EN ISO 3994	DN20 to DN30 -> ≥ 17 bar DN32 to DN70 -> ≥ 12 bar DN75 to DN90 -> ≥ 9 bar	EN ISO 1402
- Proof pressure of EN ISO 3994	No failure, loss, cracking or abrupt distortion.	
• DN20 to DN30 -> 6,8 bar • DN32 to DN70 -> 4,8 bar • DN75 to DN90 -> 3,6 bar		
Hydrostatic testing at 55 °C - Minimum burst pressure of EN ISO 3994	DN20 to DN30 -> ≥ 5,0 bar DN32 to DN70 -> ≥ 4,0 bar DN75 to DN90 -> ≥ 3,0 bar	EN ISO 1402
Tensile test	Tensile strength ≥ 50% of the value obtained in the raw material tested with ISO 37	Annex A EN ISO 3994
Vacuum test - Absolute pressure of EN ISO 3994 0,35 bar	No collapse or fracture (located more than 1xDN from fittings)	Annex B EN ISO 3994

Some indications for packing, storage, use and maintenance

The packaging and storage of spiral flexible pipes prior to use has been defined according to the recommendations of EN ISO 8331 and ISO 2230.

The packaging of Sucção I flexible pipes is made in coils with straps and plastic wrapping that guarantee to hold their shape and can be supplied in loose coils or pallets or coils. During storage, especially for long periods, and when Sucção I flexible pipes are exposed to certain adverse influences, their physical properties undergo changes that may result in them no longer having the optimised features corresponding to their application when they are put into service.

At the storage location, the relative humidity of the air must not exceed 70 %, temperature must be below 25 °C, and must be stored away from heat sources. Storage at temperatures above 25 °C can reduce the expected durability of Sucção I flexible pipes. They should not be exposed to temperatures above 50 °C or below -30 °C or abnormal temperature fluctuations during storage time.

Sucção I flexible pipes should be stored in shady spaces, avoiding prolonged exposure to sunlight (ultraviolet radiation can reduce the resistance of the pipes to impact and cause a change in colour). When storage is done in poorly protected sheds, the Sucção I flexible pipes should be covered preferably with white, red or orange covers.

Contact with potentially hazardous products and gases such as paints, solvents, oils, fuels, fats, acids, disinfectants, etc. should also be avoided.

Sucção I flexible pipes must be stored in such a way that they are not subjected to excessive stress (crushing, stretching or deformation). Contact with sharp, sharp or abrasive objects and surfaces should be avoided.

Storage should preferably be on wooden or plastic pallets or on shelves, the maximum storage height being limited to maintain the verticality of the stacks without risk of falling and the underside coils not being permanently deformed. It is not recommended that the coils hang on pins.

Sucção I flexible pipes must be handled with care, avoiding to drag them on sharp or abrasive surfaces and must not be thrown or pressed on by heavy duty vehicles or equipment.

Whenever Sucção I flexible pipes are not being used to transport liquids, or if they are removed from use for temporary storage, they must be drained (emptied). After cleaning them and before putting them back into service, the pipes should be visually examined to determine their suitability for continued use.

In use Sucção I flexible pipes should not be subject to operating pressures including overpressures higher than the maximum declared operating pressure. The same goes for the maximum recommended operating temperature.

Torsion, exposure to continuous vibrations or stresses resulting from traction must also be avoided and the recommended bend radius must be respected (bearing in mind that the bend radius increases with decreasing temperature), thus preventing clogging and eventual fatigue of the reinforcement (especially next to connection fittings, which can cause premature ruptures).

To assemble the Sucção I flexible pipes, we recommend the use of metallic or plastic fittings, adjusted to the pipe internal diameter, with grooved junctions and “Kamloc”, or “Geka”, or “Storz”, or “BSP thread (ISO 7)” joint system.

The assembly of the joints must take into account the effective tightness of the pipe fitting, to facilitate the process, clean water or soap may be used and no greases, lubricants or solvents must be used.

Adjusting the Sucção I flexible pipes to the fitting must be ensured with the controlled tightening of the bracket. Always use Hercules-type pressure brackets to tighten the fittings.

After assembly, we recommend submitting the joint to a hydraulic test to test the operating pressure foreseen for use, to detect any leaks or movements of the fitting; if necessary, retighten.

In exposed fixed installations, the Sucção I flexible pipes must be supported by suitable brackets, mounted in such a way as to avoid distortion, expansion or contraction during use under pressure or vacuum.



The information and data are believed to be accurate and secure.

Features can be improved as a result of improvements and technological advances.

Our Quality department is available for any clarification.

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HERCULES TYPE BRACKET

Apartado 2037 . 3701-906 Cesar – Portugal
Tel.: +351 256 850 130 – Fax: +351 256 850 139
ibotec@ibotec.pt – www.ibotec.pt