



*“Commitment to Excellence”*



**AEROFLEX**

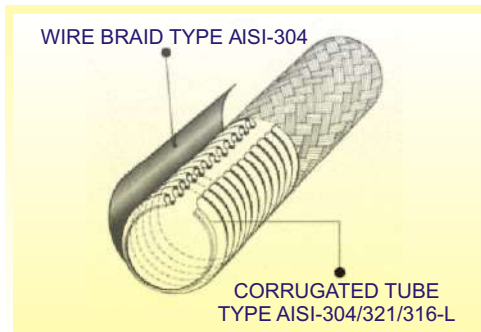
The World's Leading Manufacture of  
Stainless Steel Flexible Hoses and Assemblies



# STAINLESS STEEL CORRUGATED FLEXIBLE HOSES

## Hose

Stainless steel corrugated flexible hoses are offered from 6mm (1/4') to 300 mm (12'). The annular corrugated hose body provides the flexibility and pressure tight core of the assembly.



## Braid

Unbraided corrugated hoses tend to elongate when pressurised above a certain level. To restrain this, an external layer of stainless steel wire braiding is provided on the hose. Braiding prevents longitudinal expansion of corrugated hose and thus increases the internal pressure strength of the hose many fold. Braiding is highly flexible and exactly follows the movements of the hose.

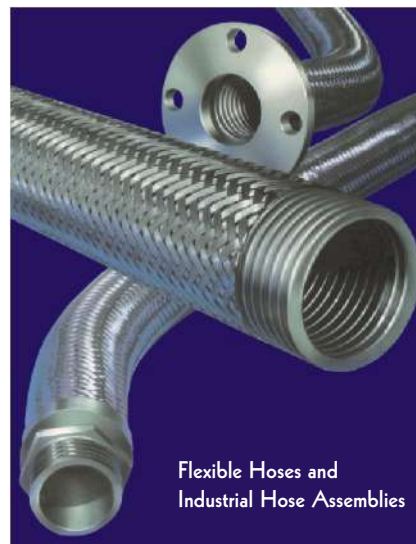
To increase the pressure ratings further, two or even three layers of braiding are provided. Unless specified, braiding in high tensile stainless steel AISI 304 wire, will be supplied braiding can also be supplied in copper. Tinned copper or stainless steel AISI 316 in case of bulk requirements.



## Assemblies

AEROFLEX hose assemblies are engineered to perfection in flexibility, strength and reliability. Aeroflex industries can provide a corrugated stainless steel hose assembly that will meet your most demanding technical specification. We can supply the hose complete with any

all types of end connections in various types of materials. The end connections are tig welded to hose. HOSE ASSEMBLIES CAN BE SUPPLIED UNDER ANY THIRD PARTY INSPECTION.



# CALCULATION OF MINIMUM HOSE LENGTH FOR FLEXING INSTALLATIONS

## Static Flexing

$$\text{Minimum Overall Length} = L (\text{Static}) + (2 \times P)$$

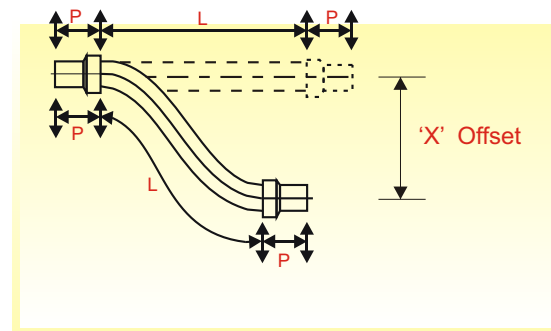
P - Dimension of end fittings.

## Intermittent Flexing

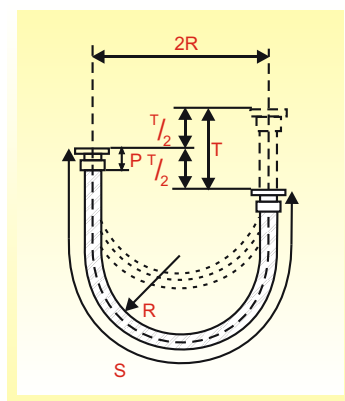
$$\text{Minimum Overall length} = L (\text{Flexing}) + (2 \times P)$$

L - Dimension from chart below relative to Offset Motion 'X'

P - Dimension of the fittings.



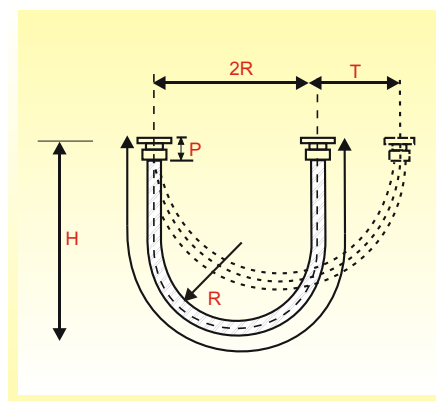
LENGTH 'L' mm (FREE HOSE LENGTH)													
NOMINAL BORE mm	STATIC	DIMENSION 'X' mm (OFFSET MOTION)											
		15	25	35	50	75	100	125	150	175	200	225	250
6	0	15	25	35	50	75	100	125	150	175	200	225	250
10,12	85	140	180	215	290								
20	95	170	220	255	310								
25	105	185	240	280	335	425							
32	110	205	260	305	365	450							
40	140	250	320	370	440	530	610						
50	170	300	380	440	520	630	730	800	870	940			
65	200	340	430	500	590	720	830	920	1000	1070	1130	1190	
80	215	380	500	580	680	820	940	1040	1140	1230	1310	1380	1450
100	230	405	525	610	720	875	1005	1120	1225	1325	1415	1490	1560
125	245	430	550	640	760	930	1070	1200	1310	1420	1520	1590	1670
150	280	510	650	760	910	1100	1270	1420	1560	1690	1800	1900	1990
200	320	560	710	830	990	1210	1400	1560	1720	1860	1990	2100	2210
250	360	620	780	900	1070	1320	1510	1690	1820	2010	2160	2290	2340



Vertical loop (Maximum travel about fixed point)

Vertical movement

$$S = 1.2 R + T/2 + 2P$$



Vertical loop (short horizontal travel)

Horizontal Movement

$$S = 1.2 (R+T/2) + 2P$$

S = Overall Length.

R = Bend Radius which must not be less than minimum shown in Table I.

P = Length over End Fitting & Ferrule.

H = Height  
= 3.142

Important : In loop installations, both connections and travel should be in the same plane as the bend.

## Advantages of Flexible Metal Hoses

- Suitable for wide temperature range (-270°C to 700°C)
- Compensates for thermal expansion contraction in the piping system
- High physical strength
- Fire resistant
- Moisture resistant
- Longer life
- Good corrosion characteristics
- Resistant to abrasion, penetration and damage
- Connects misaligned rigid piping absorbs or dampens vibration and similar equipments.
- A flexible and quick option for rigid piping in difficult locations.

## Modes of Movements Static Installations

Where the flexible hose is used to connect misaligned pipes and remain in static position.

## Occasional Flexing

Where the hose is required to flex occasionally, such as manually operated equipment.

## Constant Flexing

When the hose is required to flex continuously, usually in moving machinery.

## Vibration

High frequency, low amplitude movement e.g. On a compressor.

**TABLE - 1 TECHNICAL DATA**

NOMINAL BORE	MINIMUM BEND RADIUS		WITHOUT BRAID		SINGLE BRAID		DOUBLE BRAID		
	STATIC	FLEXING	MAX. working pressure kg/cm <sup>2</sup>	TEST pressure kg/cm <sup>2</sup>	MAX. working Pressure kg/cm <sup>2</sup>	TEST pressure kg/cm <sup>2</sup>	MAX. working kg/cm <sup>2</sup>	TEST pressure kg/cm <sup>2</sup>	
N.B.	mm	mm	mm	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>	kg/cm <sup>2</sup>
6	25	100	4	6	100	150	160	240	
10	40	150	4	6	90	135	144	216	
12	50	200	3	4.5	80	120	128	192	
16	50	200	3	4.5	70	105	112	168	
20	70	200	2	3	64	96	102	153	
25	90	200	2	3	50	75	80	120	
32	110	250	1.5	2.3	40	60	64	96	
40	130	250	1.5	2.3	30	45	48	72	
50	175	350	1.0	1.5	28	42	44	66	
65	200	410	1.0	1.5	24	36	38	57	
80	205	450	1.0	1.5	18	27	28	42	
100	230	560	0.8	1.2	16	24	26	39	
125	280	660	0.6	0.9	12	18	20	30	
150	320	815	0.6	0.9	10	15	16	24	
200	435	1015	0.5	0.75	8	12	12	18	

\* The above values are applicable for Aeroflex Braided Hoses & Assemblies \*The above pressure ratings are for fluid and ambient temperature of 20° C. For higher temperatures apply correction factors as per Table II. \*The above data for 250mm and 300mm N.B. can be supplied on request. \*The burst pressure is 4 times the maximum working pressure \*The above technical data is subject to change on account of design improvement.

## Temperature Correction Factor

When hoses are required to work at higher temperatures, the working pressure given in Table 1 should be multiplied by the correction factor. This will determine the pressure rating of the hoses for higher temperatures .

## Example

A 50 NB hose is required for a temperature of 200°C and working pressure of 19 kg./cm<sup>2</sup>. The specified pressure for 50 NB single wire braid hose as per table is 28 kg/cm<sup>2</sup>. The correction factor at 200°C is 0.69. Hence the working pressure permissible is 28 x 0.69=19.32 kg/cm<sup>2</sup>. This is higher than the required pressure i.e. 19 kg/cm<sup>2</sup>. Hence single braided hose is recommended.

**TABLE II**

Temp (°C)	-200	-150	-100	-50	0	20	50	100	150	200	250	300	350	400	450	500	550	600	650	700
Corr. Facotry	1.0	1.0	1.0	1.0	1.0	1.0	0.92	0.83	0.75	0.69	0.65	0.61	0.58	0.56	0.54	0.53	0.52	0.34	0.19	0.10







## TABLA DE FLUIDOS

	Acero galvanizado	Acero inoxidable 304	Acero inoxidable 304L	Acero inoxidable 316	Acero inoxidable 321	Acero inoxidable 409L	Acero al bajo carbono	Funcion de hierro	Aluminio	Tumbaga	Asbesto	Neopeno	PVC	Nitrilo	PTFE
Peroxido de sodio 10%/100°C	●	●	●	●	●	●	●	○	●	●	●	●	●	●	●
Petroleos crudos	●	○	○	○	○	○	●	○	●	●	●	○	●	○	○
Potasa 50%/20°C	●	●	●	●	●	●	●	●	●	●	●	●	●	○	●
Potasa 50%/eb	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●
Propano	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Silicato de sodio tc/tt	●	●	●	●	●	●	●	●	●	●	○	○	○	○	●
Sodio fundido 780°C	○	●	●	●	●	○	○	○	●	●	●	●	●	●	●
Sosa 50%/50°C	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
Sosa 70%/60°C 50% / 110°C	●	●	●	●	●	●	●	●	●	●	●	○	●	○	●
Sulfato de aluminio tc/20°C	○	●	●	●	●	○	○	○	●	●	●	○	○	○	●
Sulfato de aluminio 10% eb-tc eb	●	●	●	●	●	○	●	●	●	●	●	●	●	●	●
Sulfato de amonio tc/eb	○	●	●	●	●	○	○	○	●	●	●	●	○	○	○
Sulfato de Ca-Cu tc/tt-de Fe tc/20°C	●	●	●	●	●	○	●	●	●	●	○	○	○	○	○
Sulfato de zinc	●	●	●	●	●	○	●	○	●	●	●	●	●	●	○
Sulfato de magnesio	●	●	●	●	●	○	●	○	●	●	●	●	●	●	○
Sulfato de Mn de Ni tc/tt	●	●	●	●	●	○	●	○	●	●	○	○	○	○	○
Sulfato de K de Na tc/tt	●	●	●	●	●	○	●	○	●	●	○	○	○	○	○
Sulfuro de amonio Na 50%/eb	●	●	●	●	●	○	●	○	●	●	○	○	○	○	○
Sulfuro de Cu puro eb. de Na sat/20°C	○	●	●	●	●	○	○	○	●	○	○	○	○	○	○
Sulfuro de hidrógeno seco 200°C	●	●	●	●	●	○	●	○	●	○	○	○	○	○	○
Sulfuro de Na 50%/90°C sat./100°C	○	●	●	●	●	○	○	○	●	○	○	○	○	○	○
Tetracloruro de carbono seco 20° eb	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Tintas	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○
Tolueno	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○
Trementina gasolina de	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○
Tricloroetileno y vapores tt	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○
Urea 150°C	●	●	●	●	●	○	●	○	○	○	○	○	○	○	○
Vapor sobrecalentado	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Vapor saturado	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Vinagre	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Yodo seco	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○
Xileno	●	●	●	●	●	○	○	○	○	○	○	○	○	○	○

● Conviene perfectamente

● Conviene pero la resistencia al envejecimiento varia según las concentraciones y/o temperatura

● Desaconsejado

○ Estudiar las necesidades al momento del pedido.

Tc/tt : Cualquier concentración / Cualquier temperatura

eb : Ebullición.

Temperaturas en grados centígrados

\* Es difícil determinar la resistencia a la corrosión de los diferentes materiales en contacto con soluciones de cloruros minerales u orgánicos. Los riesgos principales son aquellos de la corrosión bajo forma de picaduras y grietas bajo tensión.

Por lo tanto se recomienda consultar nuestros servicios técnicos para este tipo de uso