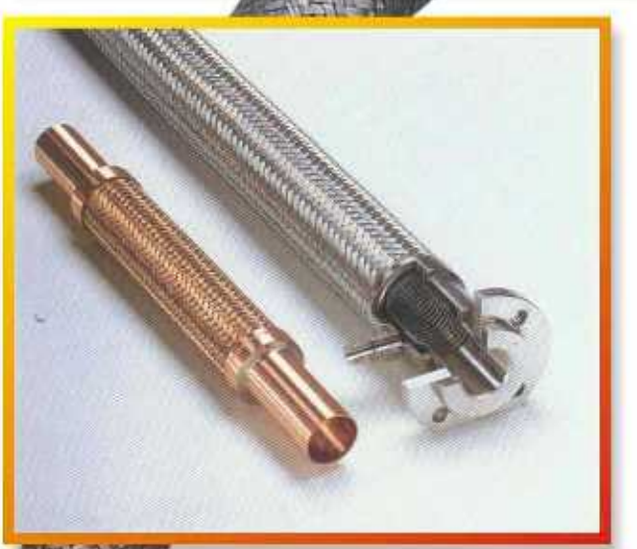
SUPERIOR
HYDROLIQUE PVT LTD

CORRUGATED HOSE

CATALOGUE

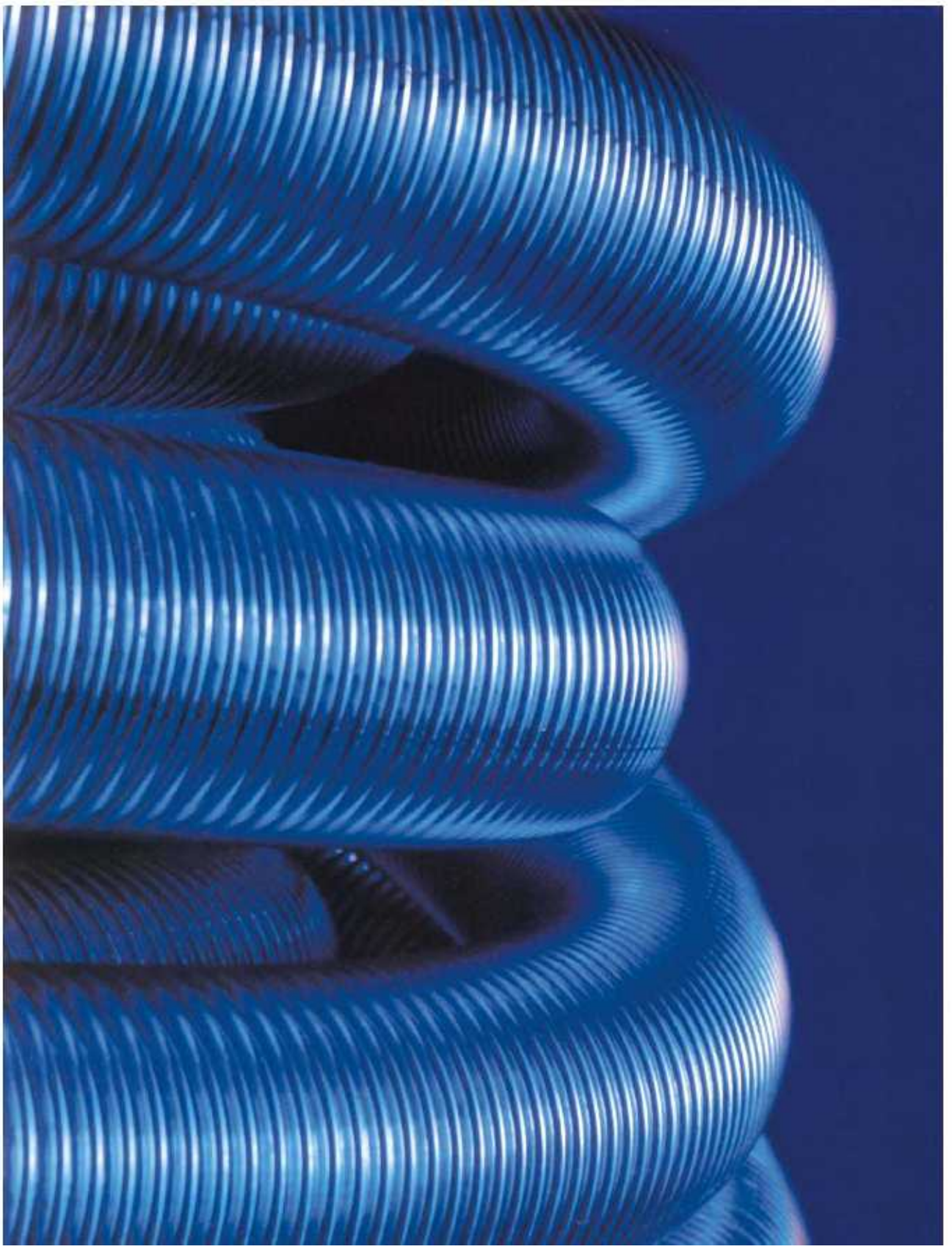
www.superflowfittings.com



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.

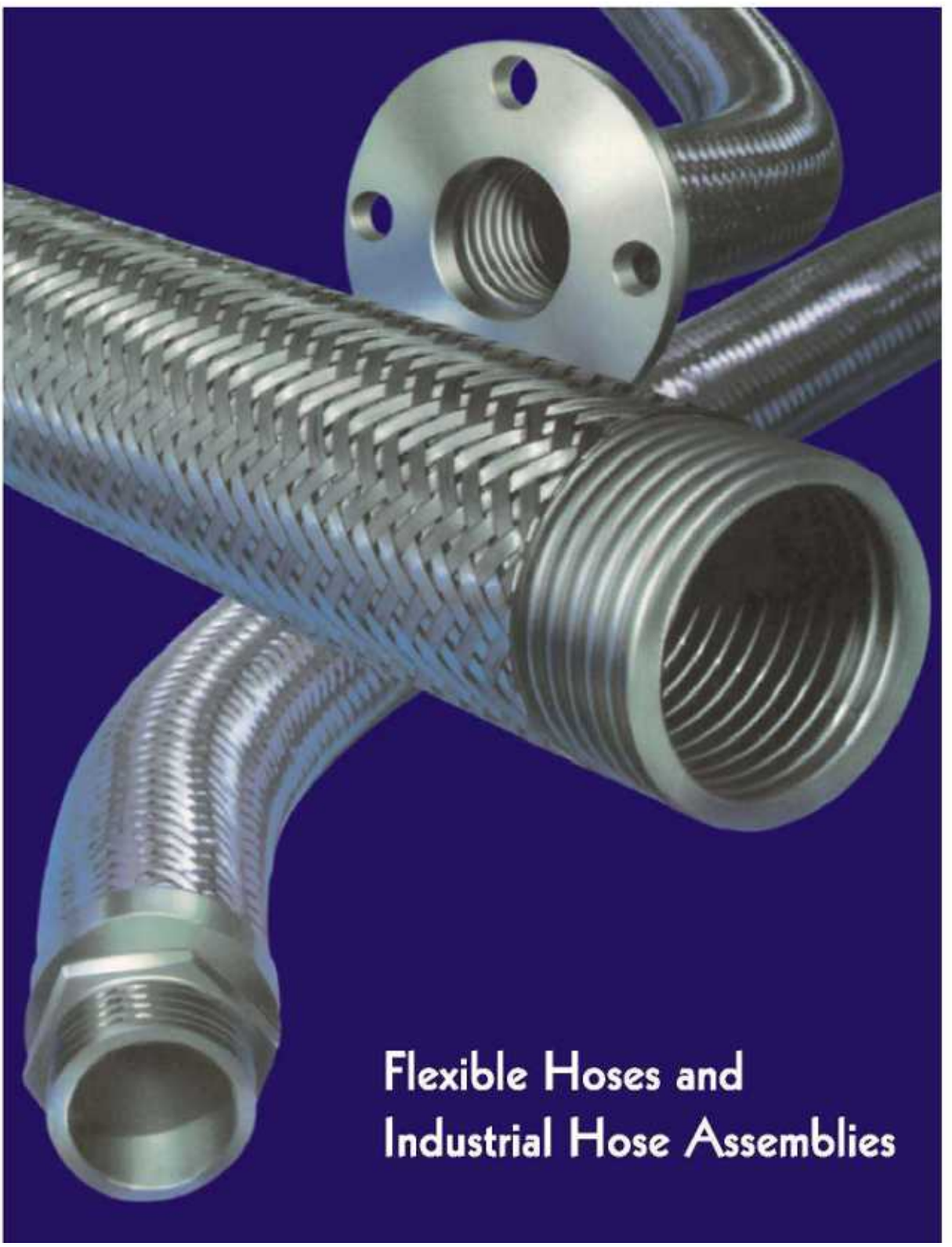


Braid

Unbraided corrugated hoses tend to elongate when pressurised above a certain level. To restrain this, an external layer of stainles 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 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.



Pressure Range

The recommended working pressure of type B hose are given in table 1, we manufacture hose for higher working pressure also. Kindly contact us with your specified requirement giving full details of the working conditions for pulsating, surge or shocking pressure the peak pressure must not exceed 50% of the max working pressure.

Flow Velocity

Corrugated metal flexible hoses have limitations in case of fluids with high flow velocities. As the high velocity causes resonant vibrations, resulting in premature failures.. Whenever flow velocity exceeds 60 m/sec for gas and 15 m/sec for liquids, an interlock hose liner should be used in the hose assemblies. The above flow velocity values get reduced to 50% for 90° bends and 25% for 45° bends.

Metal Hose Terminology

Annular – A hose profile that is designed so each convolution is a separate circle or ring.

Braid – Woven wire cover placed over hose which prevents elongation of the hose and permits higher working pressure.

Close Pitch – More corrugations per foot, which renders the longest fatigue life and minimum bend radius.

Constant Flexing Bend Radius – The minimum radius to which a hose can be repeatedly bent and render satisfactory flexure life.

Constant Motion – Motion that occurs on a regular cyclic basis at a constant travel.

Fittings – Parts attached to the ends of metal hose so that it can be connected to other components. Such as flanges, unions, nipples etc.

Flow Velocity – When the flow velocity exceeds 198ft./sec gas and 16.5ft./sec liquids in braided hose, a flexible metal liner should be used.

Intermittent Motion – Motion that occurs on a regular or irregular cyclic basis.

Maximum Test Pressure – Maximum pressure hose assemble should be subject to for testing purpose. Based on 150% of the Maximum Working Pressure.

Media – Conveyant in a hose assembly such as gases, liquids, etc.

Operating Conditions – Temperature, Pressure, Media, Motion and Application involved.

Random Motion – Uncontrolled motion that occurs usually from manual handling of hose.

Rated Burst Pressure – Pressure at which hose can be expected to fail. Braid will normally fail before core burst.

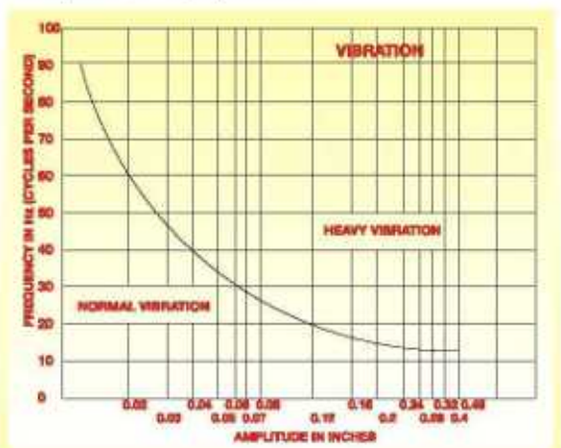
Safety Factor – Rated burst pressure divided by working pressure.

Shock or Pulsating Pressure – Shock, pulsating or surge pressure can cause premature failure of hose.

Static Bend – Minimum center bend radius to which flexible metal hose may be bent for installation.

Vibration – High frequency, low amplitude motion.

Working Temperature – Temperature to which hose will be subjected during operation.



Advantages of Flexible Metal Hoses

- Suitable for wide temperature range (-270°C to 600°C - 650°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 - I TECHNICAL DATA

NOMINAL BORE	MINIMUM BEND RADIUS		WITHOUT BRAID		SINGLE BRAID		DOUBLE BRAID	
N.B.	STATIC	FLEXING	MAX. working pressure	TEST pressure	MAX. working Pressure	TEST pressure	MAX. working	TEST pressure
mm	mm	mm	kg/cm²	kg/cm²	kg/cm²	kg/cm²	kg/cm²	kg/cm²
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

TABLE - II TECHNICAL DATA

NOMINAL BORE	MINIMUM BEND RADIUS		WITHOUT BRAID		SINGLE BRAID		DOUBLE BRAID	
N.B.	STATIC	FLEXING	MAX. working pressure	TEST pressure	MAX. working Pressure	TEST pressure		
mm	mm	mm	kg/cm²	kg/cm²	kg/cm²	kg/cm²		
250	635	1270	0.2	0.3	16.5	24.75	BRAIDED BRAID	BRAIDED BRAID
300	762	1524	0.15	0.22	11	16.5	BRAIDED BRAID	BRAIDED BRAID
350	889	1778	0.13	0.195	8	12	BRAIDED BRAID	BRAIDED BRAID

*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 III. *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./cm². The specified pressure for 50 NB single wire braid hose as per table is 28 kg/cm². The correction factor at 200°C is 0.69. Hence the working pressure permissible is 28 x 0.69=19.32 kg/cm². This is higher than the required pressure i.e. 19 kg/cm². Hence single braided hose is recommended.

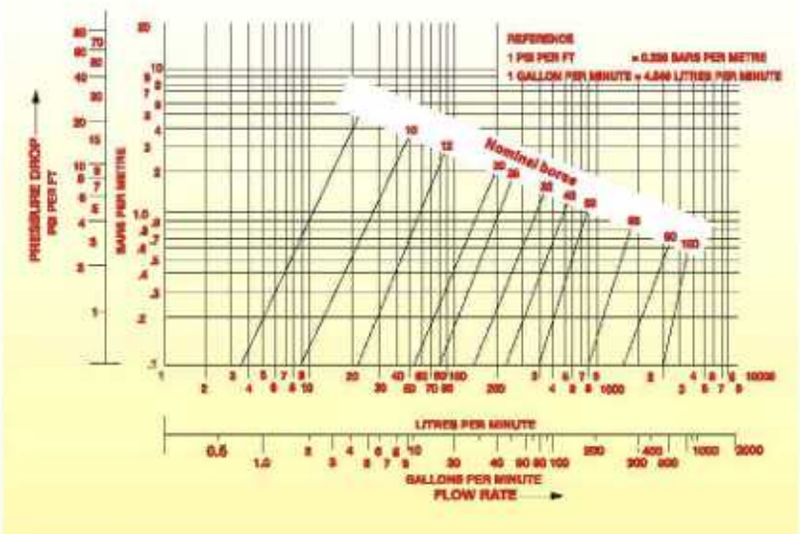
TABLE III

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

Pressure Loss

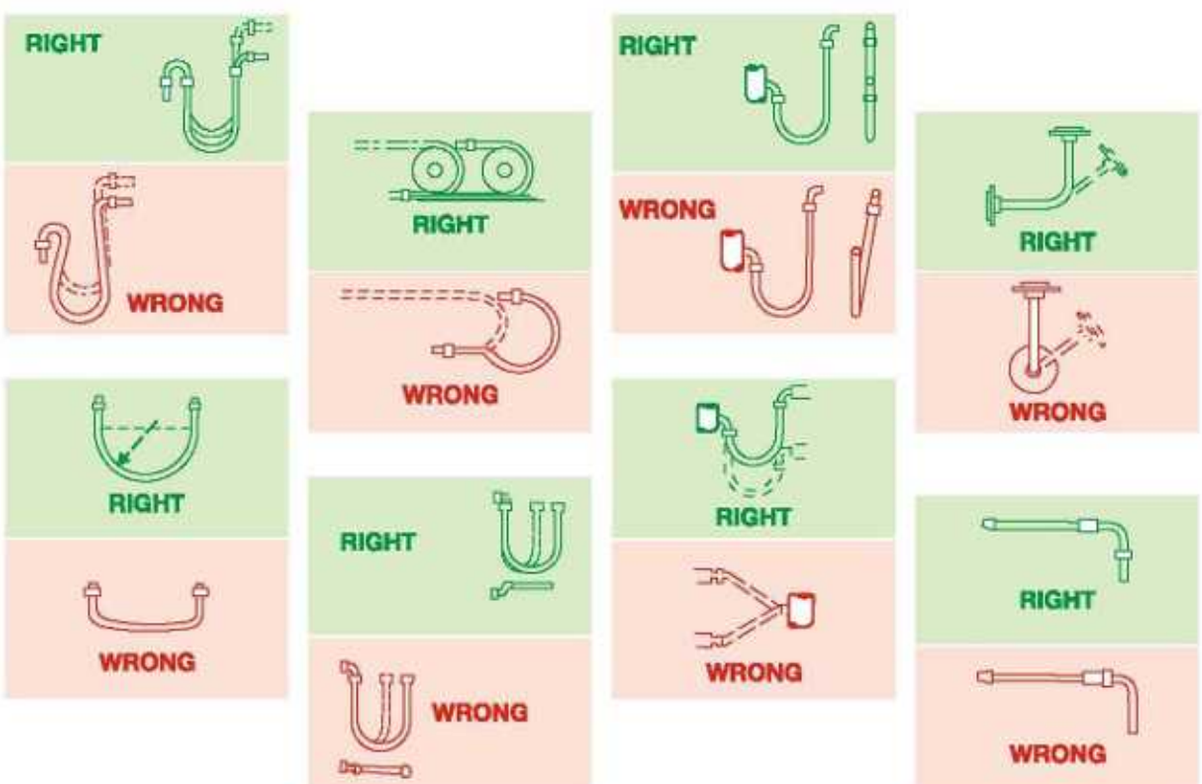
The pressure loss in corrugated hoses is 100% higher than in new welded steel pipes. This means that in the case of corrugated hose as increase in diameter of 15% is required to reduce the pressure loss to value of the pressure loss in steel pipes.

Because of the nature of the bore of a corrugated hose, the pressure drops due to greater friction than that of a smooth size of corrugated hose related to a flow rate where water is a fluid. To utilise the chart, Read off on the base line the flow rate required. Where a vertical line from the selected point on the base line intersects the nominal bore line the pressure drop Is shown on the vertical axis, corresponding to the point of intersection.



Installation

Stainless steel flexible hose assemblies should be installed in the right manner to obtain satisfactory service and longer life. The sharp bending near the end connection, stressed and twisted mounting and excessive fatigue are the main causes of premature failure of the assemblies. Correct and incorrect modes are shown in the installation chart.

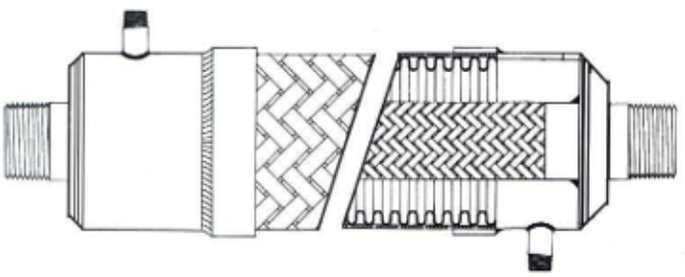


SPECIAL HOSE ASSEMBLIES

For many years Aeroflex has combined technologies of metal hose with expansion joints into composite assemblies to perform in special applications. When as unusual or difficult problem must be solved, Aeroflex Engineering can create a solution. Some examples are shown below.

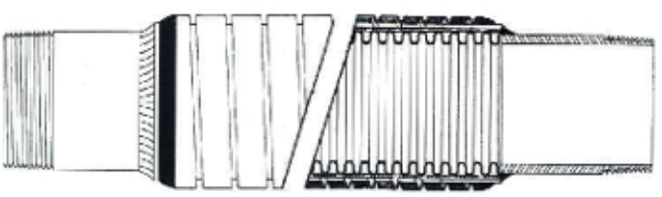
Large diameter metal hoses are frequently the only practical transfer hose for various chemicals, particularly if elevated temperatures are included.

Need even more flexibility? Aeroflex Engineering can vary core widths, height and metal gauge to provide a custom hose based on your design requirements. Consult factory for details.



Jacketed Assembly

When conveyants must be maintained at a specified temperature steam jacketing is used frequently, often in lieu of electric tracing.



Guarded Assembly

Use of an external flexible armour protects metal hose from abuse due to rough handling, abrasion and bending below it's limits. Often a rubber cover can accomplish this as well as armour if temperatures will permit.

Lined Assembly

If high conveyant velocities are required, use of an internal flexible metal liner will prevent damage and reduce abrasion problems

CALCULATION OF MINIMUM HOSE LENGTH FOR FLEXING INSTALLATIONS

Static Flexing

Minimum Overall Length = L (Static) + (2 x P)

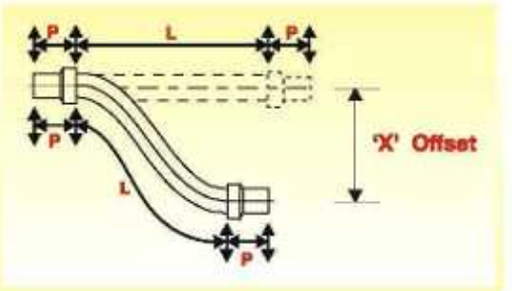
P - Dimension of end fittings.

Intermittent Flexing

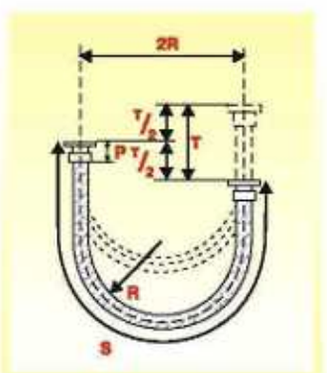
Minimum Overall length = L (Flexing) + (2 x P)

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

P- Dimension of the fittings.



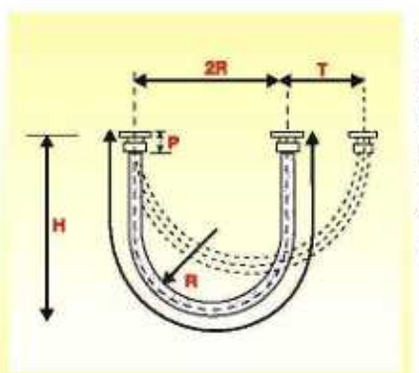
LENGTH 'L' mm (FREE HOSE LENGTH)													
NOMINAL BORE mm	STATIC	DIMENSION 'X' mm (OFFSET MOTION)											
	0	15	25	35	50	75	100	125	150	175	200	225	250
6	85	140	180	215									
10,12	90	150	190	225	290								
20	95	170	220	255	310								
25	105	185	240	280	335	425							
32	110	205	260	305	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	380	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	660	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	760	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

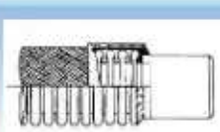
= 3.142

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

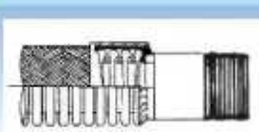
STANDARD END FITTINGS

Standard executions for Aeroflex annular corrugated S. S. Hose and * PTFE Hose

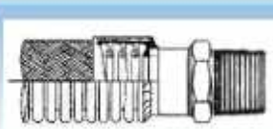
The fitting are available in Mild Steel, Carbon Steel, Stainless Steel, Brass, Gun Metal., Rolled bronze. Flange connection with fixed & floating flanges to meet IS, DIN, ANSI* ASA standards or as per customer's specifications.



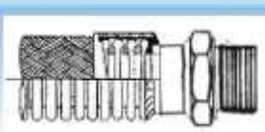
AF - 001
welding end



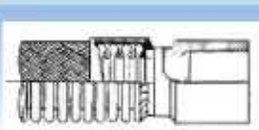
AF - 002
pipe



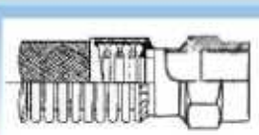
AF - 003
hexagon nipple
tapered male



AF - 004
hexagon nipple
straight male

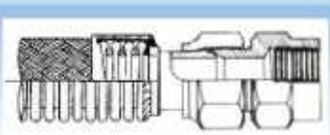


AF - 005
plain socket
straight female

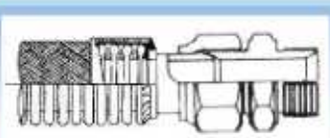


AF - 006
hexagon socket
female

AF - 007
female swivel

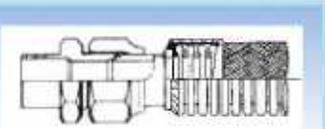


AF - 008
hexagonunion
straight female

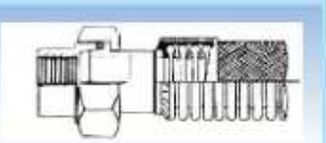


AF - 009
hexagon union
straight male

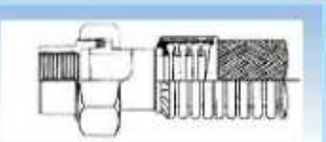
AF - 010
hexagon union
welding end



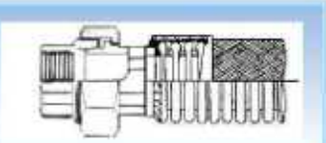
AF - 011
hexagon union
straight female



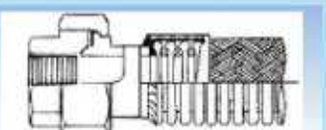
AF - 012
stainless steel
hexagon union
straight female



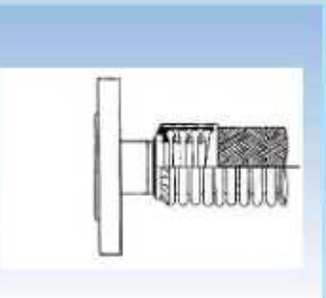
AF - 013
hexagon union GF
304 type straight
female



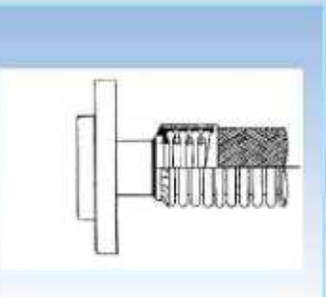
AF - 014
3000 lbs heavy
duty type straight
female



AF - 015
fixed flange



AF - 016
floating flange



CAMLOCK/QUICK RELEASE COUPLINGS

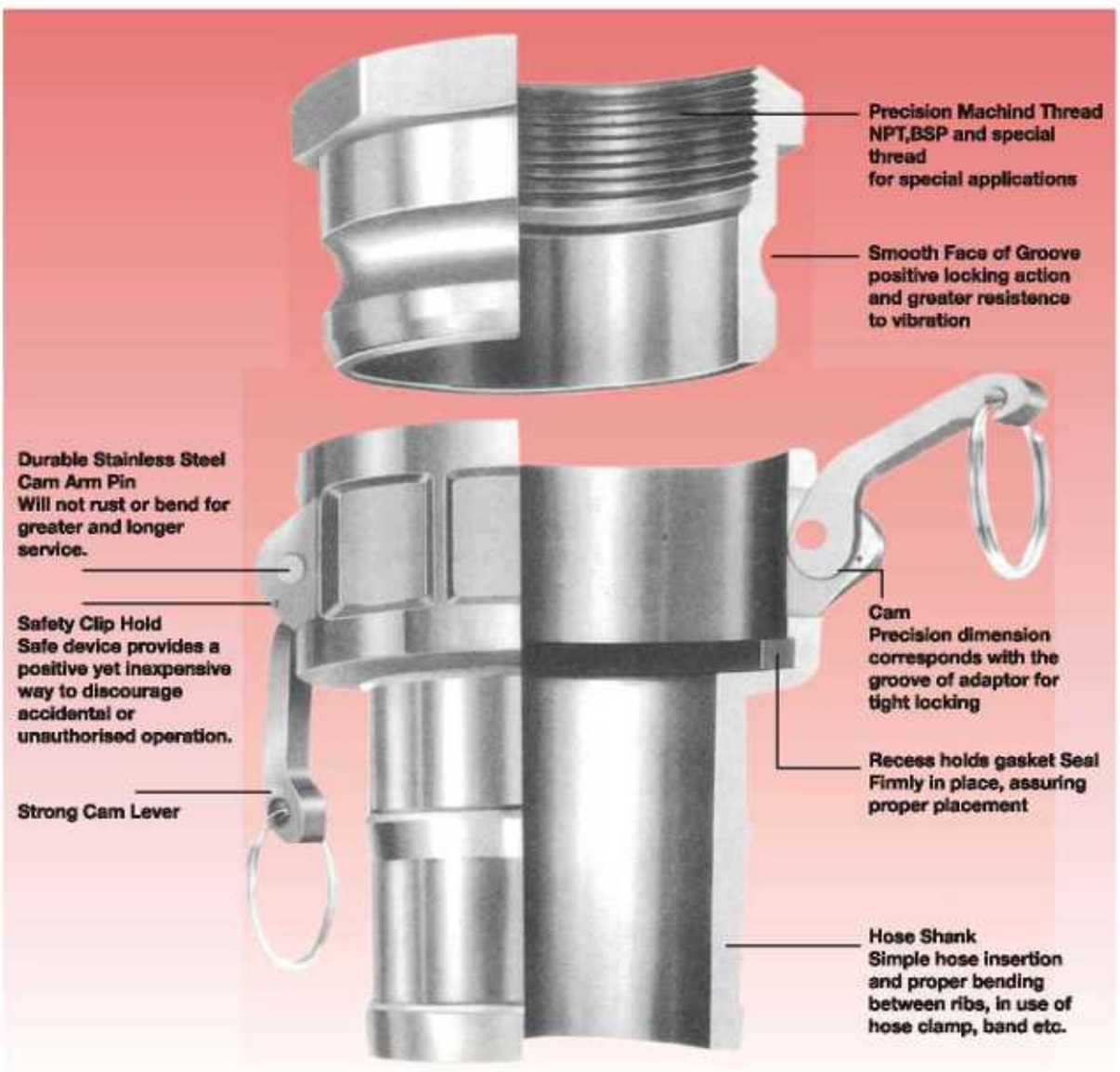
Aeroflex quick connecting couplings conserve energy and are easy to connect / disconnect without the use of hand tools, for thousands of purposes where products are transferred by pipe or hoses, like Brewing, Chemical, Mining, Fertilizer, Petroleum, Steel Plants, Atomic Energy, Power Plant and Pneumatic Tools.

Camlock Female Coupler & Adaptor

Quick Release Couplings

Coupler Hose Shank

AEROFLEX
THR QUALITY COUPLING YOU ARE SEARCHING FOR



CAMLOCK COUPLING

PART A :
adapter with female thread

PART B :
coupler with male thread

PART C :
coupler with ribbed hose shank

PART D :
adapter with female thread

PART E :
adapter with ribbed hose shank

PART F :
adapter with male thread

PART DC :
dust cap

PART DF :
dust plug

TECHNICAL DATA
CORROSION RESISTANCE TABLE

For selection of suitable hose and fitting material you may refer this table for guideline which is accurate, however because of variables beyond our control, no guarantee of service generally can be given.

Rating Code :

A - Suitable
B - Limited service
C - Not suitable
D - No information

Service life is subject to following notes :-

1. Susceptible to intergranular corrosion.
2. May cause explosive reaction.
3. Susceptible to strees, corrosion, cracking.
4. Susceptible to pitting type corrosion
5. Discolours.
6. Concentration over 50% and / or temperature over 95 Deg. C refer to "Aeroflex" technical department.

	CARBON STEEL	S.S. 321	S.S. 316	TEFLON
Acetaldehyde	B	A	A	A
Acetanilide	B	B	B	D
Acetic acid	C	B[1]	A[1]	A
Acetic acid, glacial	D	B	B	A
Acetic acid 30%	C	B	B	A
Acetic anhydride	C	B	B	A
Acetone	C	B	B	A
Acetophenone	A	B	B	D
Acetyl chloride	C	B	B	A
Acetylene	A	A	A	A
Acrylates	B	B	B	D
Acrylic acid	C	B	B	A
Acrylonitrile	A	A	A	A
Alcohols	A[1]	A	A	A
Alum	C	B	B	A
Alum acetate	D	A	A	A
Alumina	A	A	A	A
Aluminium acetate	C	B	B	A
Aluminium bromide	C	B	B	A
Aluminium chloride dry	B	A	A	A
Aluminium chloride-moist	C[2]	C[2,4]	C[2]	A
Aluminium fluoride	B	C	C	A
Aluminium hydroxide	B	A	A	A
Aluminium nitrate	C	A	A	A
Aluminium salts	D	B	B	A
Aluminium sulphate	C	B[1,3]	A[1]	A
Ammonia-dry	A	A	A	A
Ammonia-moist	C[2]	A	A	A
Ammonium acetate	A	A	A	A
Ammonium bi carbonate (hot)	D	A	A	A
Ammonium bromide	C	C[1]	C[1]	D
Ammonium carbonate	A	A	A	D
Ammonium chloride-dry	B	A	A	A
Ammonium chloride-moist	C	C[2,4]	C[2]	A
Ammonium hydroxide	B	A	A	A
Ammonium meta phosphate	A	A	A	A
Ammonium nitrate	C[2]	A	A	A
Ammonium nitrite	D	A	A	D
Ammonium perchlorate (10%)	D	A	A	D
Ammonium persulphate	D	A	A	D
Ammonium phosphate	C	B	A	A
Ammonium sulphate	C	C1	B	A
Ammonium Thiocyanate	A	A	A	A
Amyl acetate	A	A	A	A
Amyl alcohol	A	A	A	A
Amyl chloride-dry	B	A	A	A
Amyl chloride-moist	C	C[4]	C[2]	A
Amyl chloronaphthalene	D	A	A	A

	CARBON STEEL	S.S. 321	S.S. 316	TEFLON
Amyl naphthalene	D	A	A	A
Aniline	C	B	B	A
Aniline dyes	C	B	B	A
Aniline hydrochloride	D	C	C	A
Animal fats	A	A	A	A
Aqua regia	D	C	C	A
Arsenic acid	B	D	A	A
Askarel	A	A	A	D
Asphalt	A	A	A	A
Atmosphere-industrial	C	B[5]	A[5]	A
Atmosphere-marine	C	B[5]	B[5]	C
Atmosphere-rural	C	A	A	A
Barium carbonate	B	B	B	A
Barium chloride-dry	A	A	A	A
Barium chloride-moist	B	C[2,4]	C[2]	A
Barium hydroxide	B	B	A	A
Barium nitrate-moist	D	A	A	A
Barium sulphate	B	B	B	A
Barium sulphide	C	B	B	A
Beer	C	A	A	A
Beet sugar syrups	B	A	A	A
Benzaldehyde	C	B	B	A
Benzene (Benzol)	A	A	A	A
Benzene sulfonic acid	C	D	B	A
Benzine	A	A	A	A
Benzoic acid	C	A	A	A
Benzlamine	B	B	B	A
Benzyl alcohol	A	A	A	A
Benzyl benzonate	A	A	A	A
Benzyl chloride-dry	B	A	A	A
Benzyl chloride-moist	C	C[2,4]	C[2]	A
Bismuth Carbonate	A	A	A	A
Blast furnace gas	A	A	A	C
Black liquor, sulphate process	C	B	B	A
Bleaching powder-dry	C	A	A	A
Bleaching powder-moist	C	C[2,4]	C[2,4]	A
Borax	B	A	A	A
Bordeaux mixture	B	A	A	A
Boric acid	C	A	A	A
Boron trichloride-dry	A	B	B	A
Boron trichloride-moist	B	C[2,4]	C[2]	A
Boron trifluoride-dry	A	B	B[2]	D
Brines	C	C[2,4]	C[2]	A
Bromic acid	C	C	C	D
Bromic-dry	C	B	B	A
Bromic-moist	C	C	A	A
Bunker oil	A	A	A	A
Butter oil	A	A	A	A

CORROSION RESISTANCE TABLE

	CARBON STEEL	S.S. 321	S.S. 316	TEFLON
Butadiene	A	A	A	A
Butane	A	A	A	A
Butanol (Butyl alcohol)	A[e]	A	A	A
Butyl acetate	B	A	A	A
Butyl amine	A	A	A	D
Butyl carbitol	A	A	A	A
Butyl phenols	B[e]	B	B	D
Butyl mercaptan	D	A	A	A
Butyl stearate	A	A	A	A
Butyraldehyde	D	D	D	A
Butylamine	A	A	A	A
Butyric acid	C	B	B	A
Cadmium chloride-moist	C	C[3,4]	C[2]	A
Cadmium chloride-dry	A	A	A	A
Cadmium sulphate	B	A	A	A
Calcium acetate	A	A	A	A
Calcium bisulphite	B	B[1]	B	A
Calcium bromide	C	C[4]	C[2]	D
Calcium carbonate	A	A	A	A
Calcium chlorate	D	B	A	D
Calcium chloride-moist	C	C[3,4]	C[2]	A
Calcium chloride-dry	A	A	A	A
Calcium chloro hypochlorite	C	B	B	A
Calcium fluride	C	C	C	A
Calcium hydrochlorite	D	C	B	A
Calcium hydroxide	C	B	B	A
Calcium hypochlorite-moist	C	C[3,4]	C[2,4]	A
Calcium hypochlorite-dry	B	A	A	A
Calcium nitrate	C[1]	B[1]	B	A
Calcium oxide	A	A	A	A
Calcium silicate	A	A	A	A
Calcium sulphate	A	A	A	A
Calcium sulphide	A	A	A	A
Camphor	D	A	A	D
Cane sugar syrups	B	A	A	A
Carbolic acid (phenol)	C	B	A	A
Carbon dioxide-dry	A	A	A	A
Carbon dioxide-moist	C	A	A	A
Carbonate deverages	C	A	A	A
Carbonated water	C	A	A	A
Carbon disulphide	B	B	B	D
Carbon tetrachloride-dry	B	A	A	A
Carbon tetrachloride-moist	C	C[3,4]	C[4]	A
Carbon monoxide	A	A	A	A
Carbonic acid	D	A	A	A
Castor oil	A	A	A	A
Caustic soda	B	A	A	A
Cellosolve acetate	A	A	A	A
Cellosolve butyl	A	A	A	A
Cellulube	A	A	A	A
Chlorine-dry	B	A	A	A
Chlorine-moist	C	C[3,4]	C[2]	A
Chlorine trifluoride	C	D	D	D
Chloroacetic acid	C	C[3,4]	C[2]	A
Chloric acid	C	C[3]	C[2]	A
Chlorinated water (saturated)	B	D	D	A
Chlorine dioxide-dry	B	A	A	A
Chlorin Dioxide-moist	C	C[3,4]	C[2]	A
Chlorobenzene	A	A	A	A
Chlorobromo methane	A	A	A	A
O Chloronaphthalene	A	A	A	A
Chloro sulphonic acid dilute	C	A	A	A
Chloro toluene	A	A	A	A
Chloroform-dry	A	A	A	A
Chloroform-moist	C	C[3,4]	C[2]	A
Chromic acid	C	C[1,4]	B	A
Chromic fluorides	C	C	C	D
Chromic hydroxide	B	B	B	D
Chromium sulphate	C	B	B	D
Cider	C	A	A	A
Citric acid	C	B	B	A
Cod liver oil	A	A	A	A
Coffee	C	A	A	A
Coke oven gas	A	A	A	D
Copper acetate	D	A	A	A
Copper chloride-dry	B	A	A	A
Copper chloride-moist	C	C[3,4]	C[2]	A
Copper cyanide	D	A	A	A
Copper nitrate	C	A	A	A
Copper sulphate	C	B[1]	B	A
Corn oil	A	A	A	A
Corn syrup	A	A	A	A
Cottonseed oil	A	A	A	A
Creosole	A	A	A	A
Cresote	B	A	A	A
Crude oil	C	C[1]	B	A
Crude wax	A	A	A	A
Cutting oil	A	A	A	A
Cyanogen gas	D	A	A	D
Cyclohexane	B	B	B	A
Cyclohexanone	D	A	A	A
Cymene	D	D	D	A
DDT	C	A	A	A
Decalin	D	D	D	A
Denatured alcohol	A	A	A	A
Diacetone	A	A	A	A
Diacetone alcohol	A	A	A	A
Dibenzyl Ether	A	A	A	A
Dibutyl Ether	A	A	A	A
Dibutyl pthalate	A	A	A	A
Dibuty sebacate	D	D	D	A
Dichlorobenzene	D	A	A	A
Dichloroethane-dry	A	A	A	A
Dichloroethane-moist	C	C[4]	C[4]	C
Dichloroethylene-dry	B	A	A	A
Dichloroethylene-moist	C	C[4]	C[4]	A
Dichlorophenol	C	B[3]	B[3]	A
Diesel oil	A	A	A	A
Dirthylamine	C	D	B	A
Diethyl Ether	A	A	A	A
Diethylene glycol	A	A	A	A
Diethylene phthalate	D	A	A	A
Diethyl sebacate	D	A	A	A
Di-iso butylene	D	A	A	D
Di-iso propiy keton	D	A	A	A
Dimethyl aniline	D	D	D	A
Dimethyl Formamide	A	A	A	D
Dimethyl phthalate	D	D	D	A
Diisocyanate	B	A	A	A
Dimethyl sulphate	B	B	B	D
Dioctyl phthalate	A	A	A	A
Dioxane	A	A	A	A
Dipentane	A	A	A	A
Ephichorohydrin-dry	C[1]	A	A	A
Epichlorohydrib-moist	C[1]	C[3,4]	C[2]	D
Epsom Salt (mg sulphate)	D	A	A	A
Ethane	A	A	A	A
Ethanol	C	A	A	A
Ethanol Amine	A	A	A	A
Ethers	A	A	A	A
Ethyl acetate	A	A	A	A
Ethyl aceto acetate	A	A	A	A
Ethyl Acrylate	A	A	A	D
Ethylene	A	A	A	A
Ethyl Cellulose	A	A	A	A
Ethyl benzene	B	B[1]	B	A
Ethyl chloride-dry	A	A	A	A
Ethyl chloride-moist	C	C[3,4]	C[2]	A
Ethyl ethers	B	A	A	A
Ethyl mrcaptan	B	D	D	A
Ethyl penta chlorobenzene	B	A	A	A
Ethyl silicate	A	A	A	A
Ethylene	A	A	A	A
Ethylene Chloride	B	A	A	A
Ethylene chlorohydrin-dry	B	A	A	A
Ethylene chlorohydrin-moist	C	C[4]	C[4]	A
Ethylene diamine	B	B	B	A
Ethylene glycol	A	A	A	A
Ethylene oxide	B	A	A	A
Fatty acids	C	B[1,4]	A	A
Ferric chloride-dry	B	A	A	A
Ferric Chloride-moist	C	C[1,2,4]	C[3,4]	A

CORROSION RESISTANCE TABLE

	CARBON STEEL	S.S. 321	S.S. 316	TEFLON
Ferric hydroxide	D	A	A	A
Ferric nitrate	C	B	B	A
Ferric sulphate	C	B[1]	A	A
Ferrous chloride-dry	B	A	A	A
Ferrous chlorid-moist	C	C[2,3]	C[3]	A
Ferrous nitrate	D	A	A	A
Ferrous sulphate	C	B[4]	B	A
Flucroboric acid	D	A	A	A
Flucrine-dry	A	A	A	A
Flucrine-moist	C	C	C	A
Formaldehyde	B[4]	B	B	A
Formic acid	C	B	A	A
Freon	C	A	A	B
Fruit juices	C	A	A	A
Fuel oil	C	A	A	A
Fumaric acid	D	A	A	D
Furan Furfuran	A	A	A	A
Furfural	B	A	A	A
Gallic acid	C	A	A	A
Gasoline	B	A	A	A
Gelatine	C	A	A	A
Glauber's Salt	A	A	A	D
Glucose	B	A	A	A
Glue	C	A	A	A
Glutamic acid	C	B[3,4]	B[3,4]	A
Glycerin (glycerol)	B[4]	A	A	A
Glycols	A	A	A	A
Green sulphate liquor	A	A	A	A
Heptane	A	A	A	A
Hexachloroethane-dry	B	A	A	A
Hexachlorethane-moist	C	C[4]	C[3]	D
Hexal dehye	A	A	A	A
Hexane	A	A	A	A
Hexene	A	A	A	A
Hexyl alcohol	A	A	A	A
Hydraulic oil	A	A	A	A
Hydrazine	C	A	A	A
Hydrobromic acid	C	C[3]	C	A
Hydrocarbon acid	C	A	A	A
Hydrocarbons, pure	A	A	A	A
Hydrochloric acid	C	C[4]	C[3]	A
Hydrocyanic acid	C[3]	C[1,3]	C[3]	A
Hydrofluoric acid	C	C[1,3]	C	A
Hydrofluorsilicic acid	C	C	C	A
Hydrogen	A	A	A	A
Hydrogen chloride-dry	B	A	A[1]	A
Hydrogen chloride-moist	C	C[4]	C[1]	A
Hydrogen peroxide	C	B	B	A
Hydrogen sulfide-dry	B	A	A	A
Hydrogen sulfide-moist	C[3]	B[4]	A	A
Hydroquinone	B[3]	B	B	D
Hypo	D	A	A	A
Imol	A	A	A	A
Ink	D	B	A	D
Iodine	D	C	D	D
Isobutyl Alcohol	A	A	A	A
Iso octane	A	A	A	A
Isopropyl acetate	A	A	A	A
Isopropyl alcohol	A	A	A	A
Isopropyl ether	A	A	A	A
Kerosene	B	A	A	A
Ketchup	D	A	A	A
Ketones	D	A	A	A
Lacquers	A	A	A	A
Lacquer solvents	A	A	A	A
Lactic acid	C	B[1,3]	B[1]	A
Lard	A	A	A	A
Lead molten	C	B	A	D
Lead acetate	B	A	A	A
Lead nitrate	A	A	A	D
Lime	B	A	A	A
Lime Bleach	C	B	A	D
Lime-sulphur	C	B	B	B
Linoleic acid	D	D	D	A
Linseed oil	B	A	A	A
Lithium chloride-dry	B	A	A	A
Lithium chloride-moist	B	C[3,4]	C[3]	A
Lithium hydroxide	B	B	B	A
Lubricating oil	A	A	A	A
Magnesium chloride-dry	B	A	A	A
Magnesium chloride-moist	C	C[3,4]	C[3]	A
Magnesium hydroxide	A	A	A	A
Magnesium sulphate	B	B	A	A
Maleic acid	B	B1	A	A
Mayonnaise	D	A	A	A
Mercuric chloride-dry	B	A	A	A
Mercuric chloride-moist	C	C[3,4]	C[3]	A
Mercurous nitrate	B	B	B	D
Mercury	B	B	B	A
Mesityl oxide	A	A	A	A
Methane	A	A	A	A
Methyl acetate	A	A	A	A
Methyl acrylate	D	A	A	D
Methyl alcohol	A	A	A	A
Methyl bromide	A	A	A	A
Methyl butyl ketone	A	A	A	D
Methyl chloride-dry	A	A	A	A
Methyl chloride-moist	C	C[3,4]	C[3]	A
Methylene chloride	A	A	A	A
Methyl ethyl ketone	B	B	B	A
Methyl formate	A	A	A	A
Methyl isobutyn ketone	A	A	A	A
Methyl methacrylate	A	A	A	A
Methyl salicylate	A	A	A	A
Milk	C	A	A	A
Mine water	C	B	B	A
Mono chloro benzene	A	A	A	A
Mono ethanolamine	A	A	A	D
Morpholine	D	A	A	A
Naphtha	B	A	A	A
Naphthalene	A	A	A	A
Naphthenic acid	D	B	A	A
Natural gas	A	A	A	A
Nickle acetate	A	A	A	A
Nickle chloride-dry	B	A	A	A
Nickle chloride-moist	C	C[3,4]	C[3]	A
Niter cake	C	B	A	D
Nitric acid	C	B	B	A
Nitrotuene	B	B	B	A
Nitrogen	A	A	A	A
Nitrogen tetroxide	D	D	B	D
Nitro benzene	A	A	A	A
Nitro ethane	A	A	A	D
N-octane	A	A	A	A
Octyl alcohol	A	A	A	A
Oils crude	A	A	A	A
Oils Vegetables	A	A	A	A
Oils minerals	A	A	A	A
Oleic Acid	C	B[4]	B	A
Oleum (fuming H2so4)	B[4]	B	B	A
Oleum spirits	C	D	D	A
Olive oil	B	B	A	A
Oxalic Acid	C	C[1]	B[1]	A
Oxygen	A	A	A	A
Ozone	A	A	A	A
Paint	D	A	A	A
Palmitic acid	C	A	A	A
Paraffin	B	A	A	A
Paregoric compound	C	A	A	A
Peanut oil	A	A	A	A
Pentane	B	B	B	A
Perchloric acid	D	B	A	A
Perchlore ethylene	A	A	A	A
Petroleum	A	A	A	A
Petroleum ether	D	A	A	A
Phenol (carbolic acid)	C	B	A	A
Phorone	A	A	A	A
Phosphate esters	A	A	A	A
Phosphoric acid	C	C[1]	B[1]	A
Phthalic acid	C	B[1]	B	A
Pitric acid	C	B	B	A
Pinene	A	A	A	A

CORROSION RESISTANCE TABLE

	CARBON STEEL	S.S. 321	S.S. 316	TEFLON
Pine oil	A	A	A	A
Plating solution Chrome	D	C	C	A
Potassium acetate	D	A	A	A
Potassium bichromate	B	A	A	A
Potassium bromide	C	C	C	A
Potassium carbonate	B	A	A	A
Potassium chloride-dry	A	A	A	A
Potassium chloride-moist	C	C[14]	C[3]	A
Potassium chromate	C	B	B	A
Potassium cyanide	B	B	B	A
Potassium dichromate	C	A	A	A
Potassium ferricyanide	C	A	A	A
Potassium fluoride	C	C	C	A
Potassium hydroxide	B[3]	B[3]	A	A
Potassium iodide	B	A	A	A
Potassium nitrate	B	B	A	A
Potassium permanganate	B	B	B	A
Potassium sulphate	C	B	B	A
Progallic acid	B	A	A	D
Propene	A	A	A	A
Propyl acetate	A	A	A	D
Propyl alcohol	A	A	A	A
Propylene	A	A	A	A
Propylene oxide	C	A	A	A
Propylene dichloride-dry	B	A	A	A
Propylene dichloride-moist	C	C[1]	C[1]	A
Pyridine	B[3]	B	B	A
Pyrrolidine	B	B	A	A
Quinine	C	B	B	A
Quinine sulphate-dry	C	A	A	A
Rosin	C[1]	A	A	A
Rosin molten	C	A	A	A
Red Oil	B	B	A	A
Salicylic acid	D	A	A	D
Sauerkraut Brine	D	C	A	A
Sea water	C	A	A	A
Sewage	B	A	A	A
Silicon greases	A	A	A	D
Silicon oils	A	A	A	D
Silver salts	C	B	B	A
Silver nitrate	C[1]	B	A	A
Skydrol 500 & 7000	A	A	A	A
Soap solutions	B	A	A	A
Sodium	A	A	A	A
Sodium acetate	B	B[1]	B	A
Sodium bicarbonate	C	A	A	A
Sodium bisulphate	C	B[1,2]	A	A
Sodium bisulphite	C	B	B	A
Sodium borate	A	A	A	A
Sodium bromide	B	C	C	A
Sodium carbonate	B	A	A	A
Sodium chlorate-dry	A	A	A	A
Sodium chlorate-moist	C	C[14]	C[3]	A
Sodium chloride-dry	B	A	A	A
Sodium chloride-moist	C	C[14]	C[3]	A
Sodium chromate	B	A	A	A
Sodium citrate	B	B	B	A
Sodium cyanide	B	B	B	A
Sodium dichromate	C	A	A	A
Sodium fluoride	B	C[1]	C	A
Sodium hydroxide	B[3]	B[3]	B[3]	A
Sodium hypochlorite-dry	B	A	A	A
Sodium hypochlorite-moist	C	C[14]	C[3]	A
Sodium metaphosphate	C	A	A	A
Sodium metasilicate	B	A	A	A
Sodium nitrate	B[3]	A	A	A
Sodium nitrite	B	B	B	A
Sodium perborate	C	A	A	A
Sodium peroxide	C	A	A	A
Sodium phosphate	C	A	A	A
Sodium silicate	B	A	A	A
Sodium sulphate	B	B[3]	B	A
Sodium sulphide	C	B[4]	B	A
Sodium sulphite	C	B	B	A
Sodium thiosulphate	C	B	B	A
Soya bean oil	A	A	A	A

	CARBON STEEL	S.S. 321	S.S. 316	TEFLON
Stannic chloride-dry	B	A[3]	A[3]	A
Stannic chloride-moist	C	C[3]	C[3]	A
Stannous chloride-dry	B	A[3]	A[3]	A
Stannous chloride-moist	C	C[3]	C[3]	A
Starch Aqua Solution	A	A	A	A
Steam	C	A	A	A
Stearic acid	C[3]	B	B	A
Stoddard solvent	B	A	A	A
Strontium nitrate	C	B	B	A
Styrene	B	D	B	A
Sulphate black liquor	B	B	B	A
Sulphate green liquor	B	B[1]	B	A
Sugar solutions	B	A	A	A
Sucrose solution	A	A	A	A
Sulphur - dry	B	A	A	A
Sulphur - molten	C	C	B	D
Sulphur chloride-dry	C	A[3]	A[3]	A
Sulphur chloride-moist	C	C[3]	C[3]	A
Sulphur dioxide-dry	C	C[1]	B	A
Sulphur dioxide-moist	C	C[1]	B	A
Sulphur trioxide-dry	C	A	A	A
Sulphuric acid, 95-100%	B	A	A	A
Sulphuric acid, 80-95%	C	B	B	A
Sulphuric acid, 40-80%	C	C[1]	C[1]	A
Sulphuric acid, 40%	C	C[1]	C[1]	A
Sulfurous acid	C	C[1,3]	C[1,3]	A
Tall Oil	B	B	B	A
Tannic acid	C[3]	B	B	A
Tar	B	A	A	A
Tar bituminous	A	A	A	A
Tartaric acid	C	B	B	A
Terpineol	D	D	D	A
Tetraphosphoric acid	C	B	B	A
Tin molten	B	B	B	D
Titanium Tetra chloride	A	B	B	D
Toluene	B	A	A	A
Tolune Diisocyanate	D	D	D	D
Transformer oil	A	A	A	A
Transmission fluidtype	A	A	A	A
Tributoxyethyl phosphate	A	D	A	A
Tributyl phosphate	A	D	D[1]	A
Trichloro acetic acid	C	C[3]	C[1]	A
Trichloroethane-dry	A	A	A[1]	A
Trichloroethane-moist	C	C[1]	C[1]	A
Trichloroethylene-dry	A	A	A[1]	A
Trichloroethylene-moist	C	C[1]	C[1]	A
Tricresyl phosphate	A	D	B	A
Tung oil	A	A	A	A
Turpentine	B	A	A	A
Uric acid	B	A	A	A
Varnish	B	A	A	D
Vegetable juices	C	A	A	A
Vegetable oil	A	A	A	A
Versilube	A	A	A	A
Vinegar	C	A	A	A
Cinyl chloride	B	A	A	A
Water, potable	C	A	A	A
Whisky	C	B	A	A
Wine	C	B	A	A
Wood pulp	A	A	A	A
Wort	A	A	A	A
Xylene	B	B	B	A
Yeast	A	A	A	A
Zinc acetate	A	A	A	A
Zinc chloride-dry	A	A	A[3]	A
Zinc chloride-moist	C	C[3]	C[3]	A
Zinc molten	C	C	C	D
Zinc sulphate	C	B	A	A

INDUSTRIES & APPLICATIONS

Aerospace Industries

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Boilers

Chemical Industries

Consultants

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Thermal Power Station

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Nuclear Power Plant

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Fossil Fire Plants
Combined Cycle Plants
Industrial Gas Turbines
Nuclear Plants

Heavy Industrial

Foundaries
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