EAGLE METAL HOSE

FLEXIBLE METAL HOSE SELECTION FACTORS

The selection of a flexible metal hose for a specific application can be reduced to seven major considerations.

The word "Stamped" is sometimes useful as a check list of application requirements to be considered.

Consider...	Check for...	
S	Size / Hose & Fittings	Size of existing piping and mating fittings type and size Flow requirements
T	Temperature	Maximum allowable service temperature rating for hose and fitting alloys Reduced operating pressures at elevated temperature
A	Alloy / Hose & Fittings	Corrosion resistance of hose and fittings alloys for the media conveyed Maximum service temperature Maximum pressure and temperature
M	Motion & Application	Type of motion, angular, axial, offset, radial, random, vibration, amount and frequence Hose type best suited for application and motion
P	Pressure	Burst, test and operating pressure... constant, pulsating or shock Operating pressure at elevated temperature
E	End Fitting Attachment	Methods applicable to type and alloy of hose and fittings Maximum temperature for alloys and methods of attachment
D	Developed Assembly Length	Minimum hose live length for type of motion Hose assembly length width fittings (overall length)

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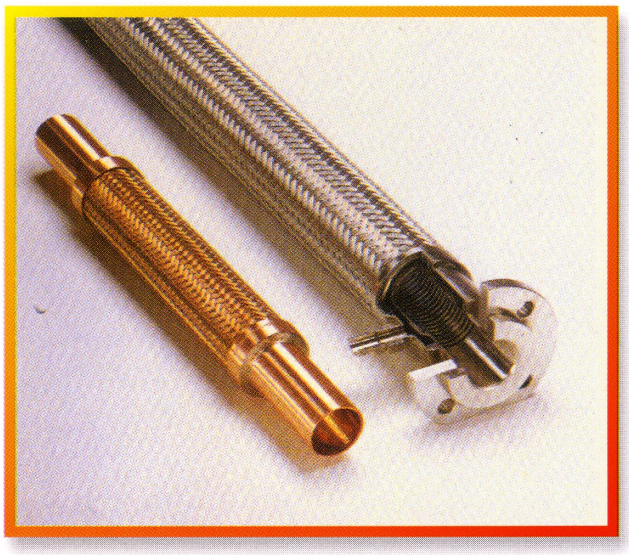
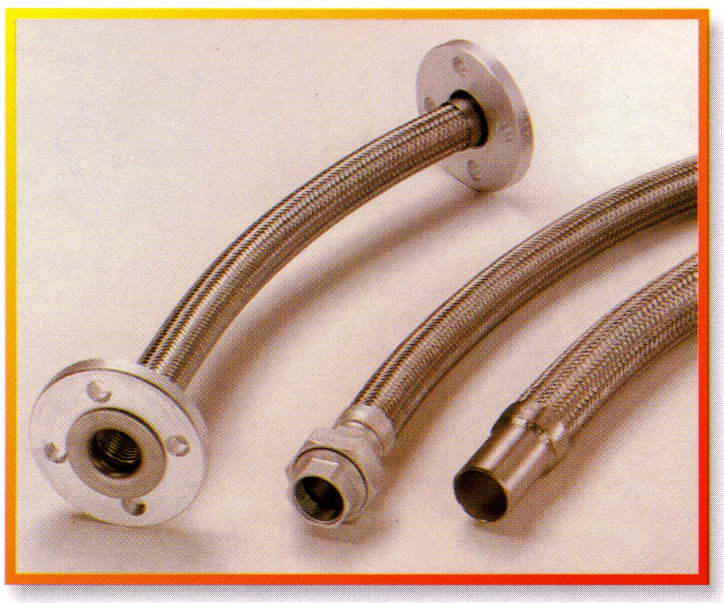
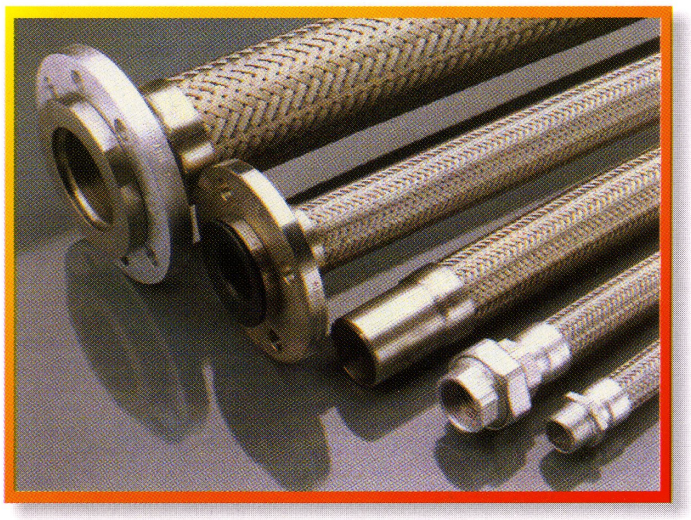






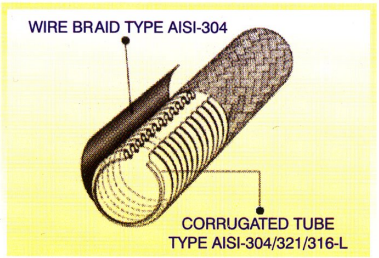
Eagle Metal Hose

The World Class Stainless Steel Hoses and Assembiles

STAINLESS STEEL CORRUGATED FLEXIBLE HOSES

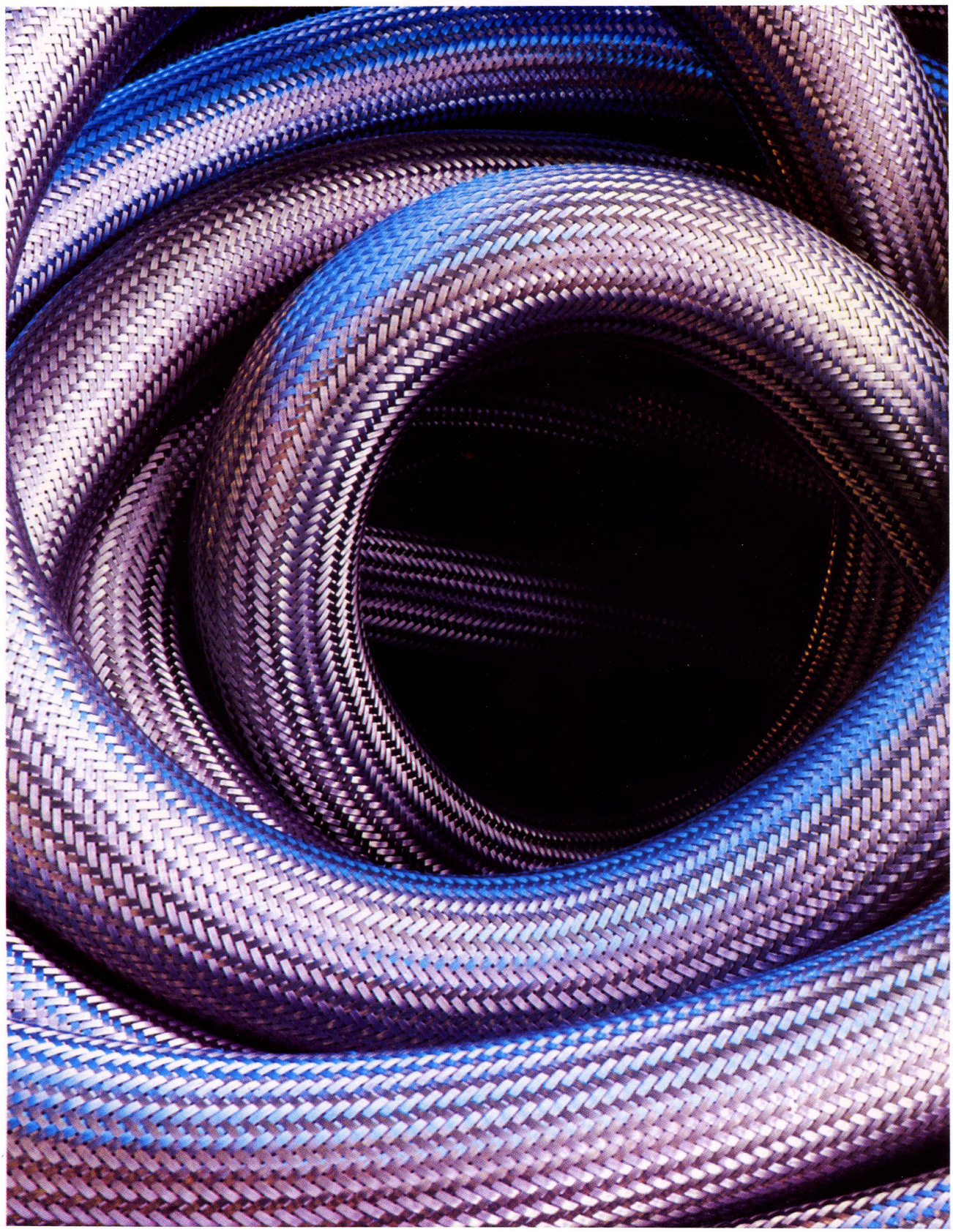
Hose

Stainless steel corrugated flexible hoses are offered from 1/4" to 8". The annular corrugated hose body provides the flexibility and pressure tight core of the assembly.



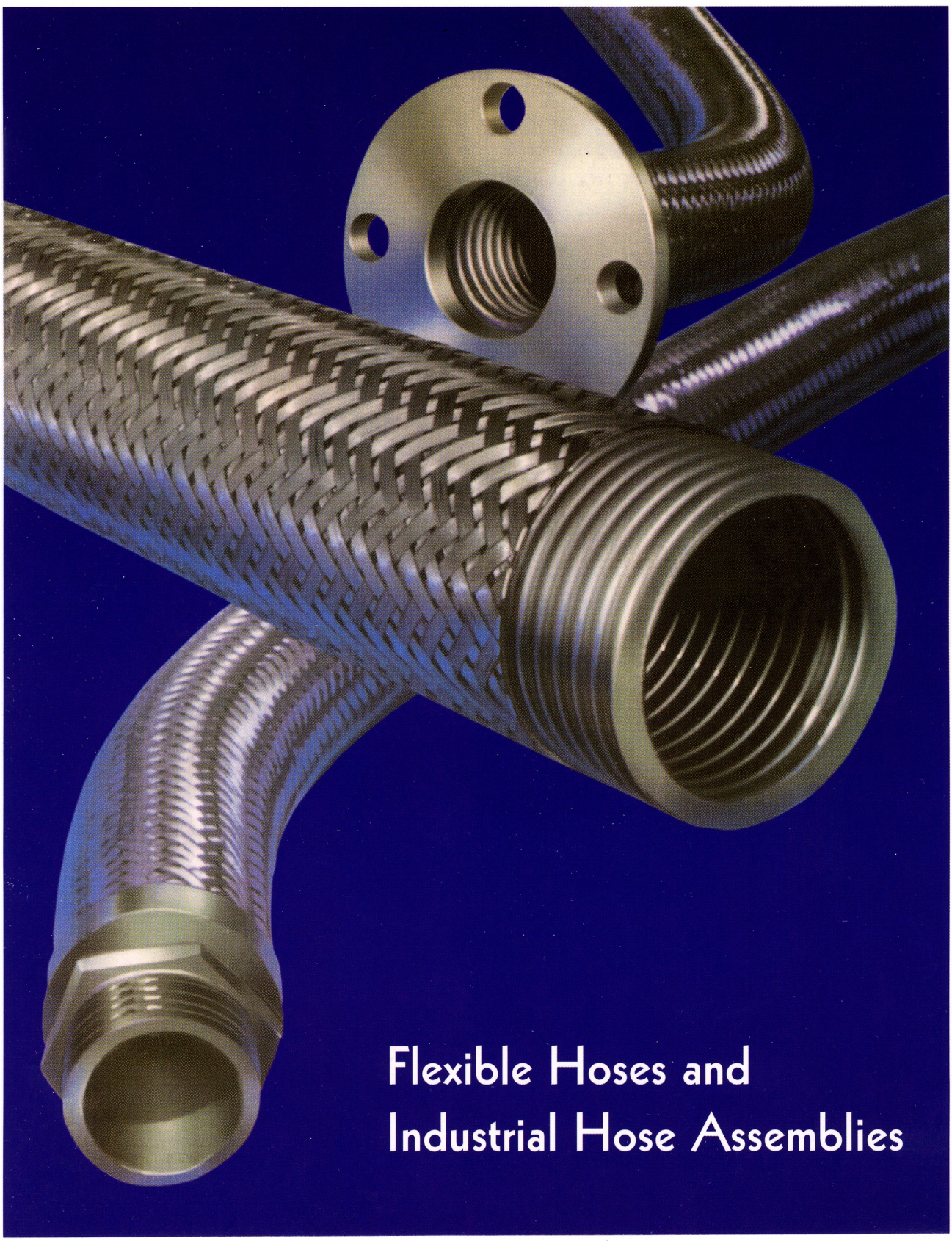
Braid

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 strengthen of the hose 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

Hose assemblies are engineered to perfection in flexibility, strength and reliability. Eagel Metal Hose 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.



Pressure Range

The recommended working pressure of type B hose are given in table 1, we manufacturer hose for higher working pressure also. Kindly contact us with your specified requirement giving full detail 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 164 ft/sec for gas and 82 ft/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 75 ft./second liquid, 150 ft./second gas 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 assembly 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
Difference between working pressure and rated burst pressure.

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

Static Bend

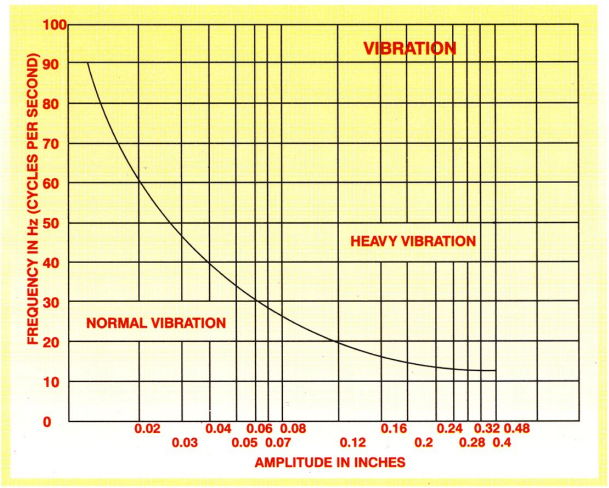
Minimum center bend radius to which flexible metal hose may be bent for installation.

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 (-454°F to 1292°F)
- 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.

Temperature Correction Factor

The Recommended Maximum Working Pressure ratings given in Table-I are at a temperature of 68°F. Where hoses are required to operate at temperature above, a correction factor should be applied to the specified working pressure of selected Hose. The correction factors are given in Table II.

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.

Example

A 2" NB Hose is required for a temperature of 570°F and working pressure of 250 psi. The specified pressure for 2" NB Single Braid Hose as per Table I is 410 psi. The correction factor at is 0.61.

Hence the working pressure permissible is 410 x 0.61 = 250 psi. This is higher than the required pressure i.e. 250 psi. Hence Single Braided Hose is recommended.

TABLE I

Temp (deg F)	-328	-238	-148	-58	32	68	122	212	302	392	482	572	662	752	842	932	1022	1112	1202	1292
Corr. Facotry	1	1	1	1	1	1	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	0.1

EAGLE METAL HOSE

TABLE - II TECHNICAL DATA

Nominal Hose ID	Hose Type	Nominal Hose O. D. (Inches)	Maximum Working (MWP) (PSIG)	Maximum Test (MTP) (PSIG)	Rated Burst (RBP) (PSIG)	Constant Flexing (Inches)	Static Bend (Inches)	Approximate Weight (lbs/ft)
	E-SS0	0.472	156.88					0.1342
	E-SS1	0.581	2700.00	4050.00	10800.00			0.2014
1/4"	E-SS2	0.61	3500.00	5250.00	14000.00	4	0.984	0.2853
	E-SS0	0.629	130.00					0.1677
	E-SS1	0.710	1279.80	1919.70	5119.20			0.5685
3/8"	E-SS2	0.781	2047.68	3071.52	8190.72	5.5	1.574	0.386
	E-SS0	0.77	65.00					0.2012
	E-SS1	0.85	1137.60	1706.40	4550.40			0.3021
1/2"	E-SS2	0.89	1820.16	2760.24	7280.64	6	1.968	0.4196
	E-SS0	1.062	50.00					0.2182
	E-SS1	1.141	1100.00	1700.00	4400.00			0.3690
3/4"	E-SS2	1.22	1450.77	2176.16	5803.08	7.85	2.755	0.5371
	E-SS0	1.336	28.00					0.2685
	E-SS1	1.417	800.00	1200.00	3200.00			0.4700
1"	E-SS2	1.496	1137.60	1706.40	4660.40	7.9	3.543	0.6915
	E-SS0	1.614	25.00					0.3357
	E-SS1	1.692	625.00	935.00	2500.00			0.6714
1.1/4"	E-SS2	1.771	910.08	1365.12	3640.32	9.842	4.33	0.8928
	E-SS0	2.007	21.33					0.3692
	E-SS1	2.125	550.00	825.00	2200.00			0.7719
1.1/2"	E-SS2	2.165	632.56	1023.84	2730.24	9.842	5.118	1.2152
	E-SS0	2.559	14.22					60.4290
	E-SS1	2.677	398.16	597.24	1592.64			1.1747
2"	E-SS2	2.795	625.68	938.52	2502.72	13	6.889	1.7792
	E-SS0	3.188	14.22	21.33	56.88			0.7885
	E-SS1	3.287	400.00	600.00	1600.00			1.6785
2.1/2"	E-SS2	3.385	540.38	810.54	2161.44	16.141	7.374	2.9878
	E-SS0	3.74	14.22	21.33	66.88			0.8728
	E-SS1	3.818	350.00	525.00	1400.00			1.9470
3"	E-SS2	3.937	515.00	772.00	2060.00	17.716	8.07	3.1221
	E-SS0	4.603	11.38					1.2085
	E-SS1	4.724	270.00	405.00	1080.00			2.4506
4"	E-SS2	4.83	369.72	564.58	1478.88	22	9.055	3.8608
	E-SS0	5.905	8.53	12.80	34.128			2.9878
	E-SS1	6.062	225.00	340.00	900.00			4.9348
5"	E-SS2	6.259	400.00	600.00	1600.00	25	11.023	7.0834
	E-SS0	6.929	8.53	12.80	34.128			3.0800
	E-SS1	7.006	142.20	213.30	568.8			5.4719
6"	E-SS2	7.322	227.52	341.26	910.08	32	12.528	7.9699
	E-SS0	9.015	7.11	10.67	28.44			4.5657
	E-SS1	9.173	170.00	255.00	680			7.5870
8"	E-SS2	9.409	250.00	375.00	1000	40	17.185	10.7764

ESS0 - UNBRAIDED

ESS1 - SINGLE BRAID

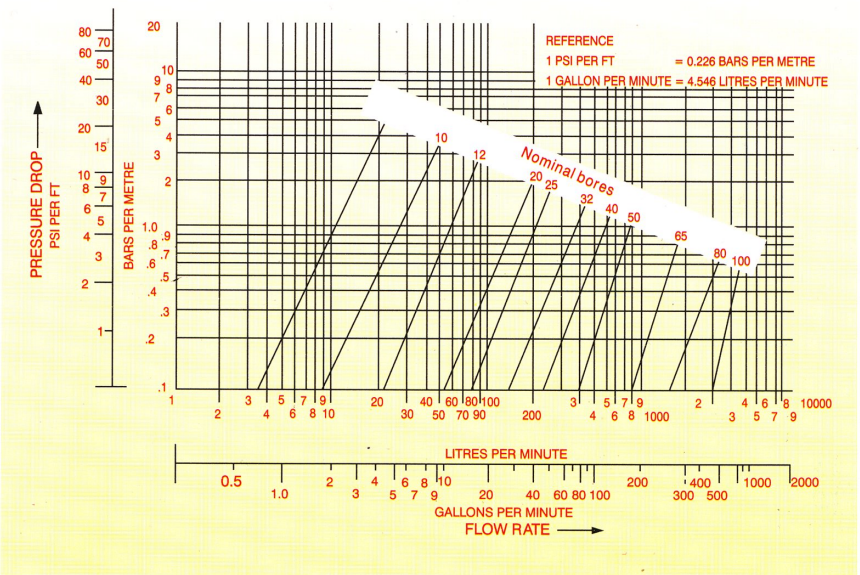
ESS2 - DOUBLE BRAID

* The above values are applicable for Braided Hoses & Assemblies *The above pressure ratings are for fluid and ambient temperature of 68° F. For higher temperatures apply correction factors as per Table II. *The above data for 10 inches and 12 inches 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.

Pressure Loss

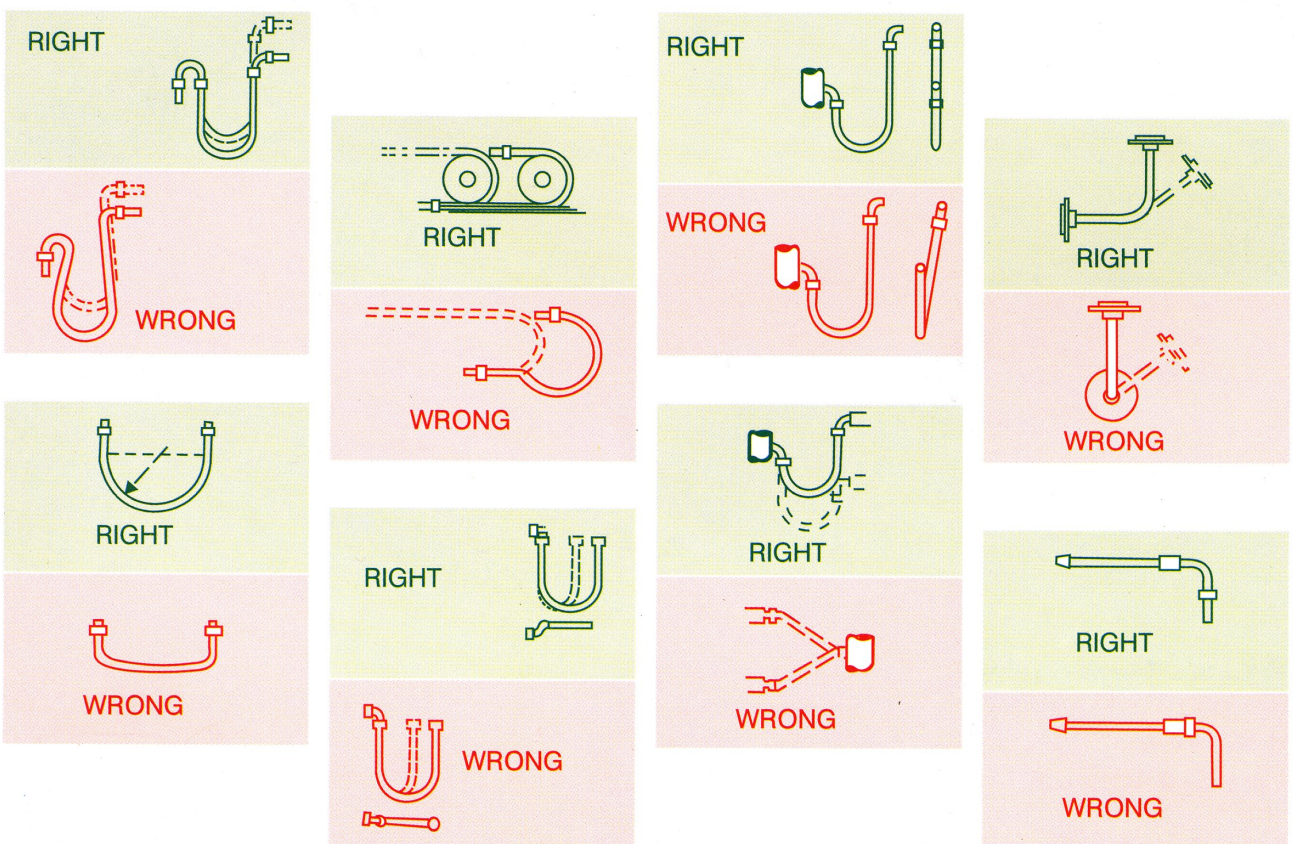
The pressure loss in corrugated hoses is 100% higher than in new welded steel pipes. This means that in the case of corrugated hose as increase in diameter of 15% is required to reduce the pressure loss to value of the pressure loss in steel pipes.

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.



CALCULATION OF MINIMUM HOSE LENGTH FOR FLEXING INSTALLATIONS

Static Flexing

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

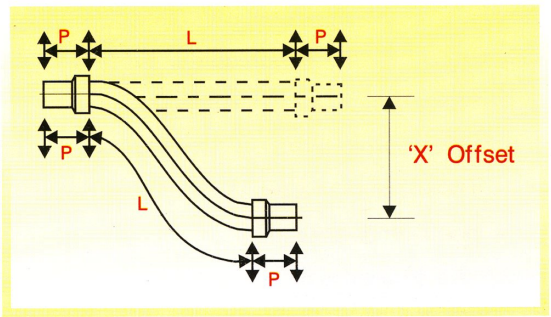
P - Dimension of end fittings.

Intermittent Flexing

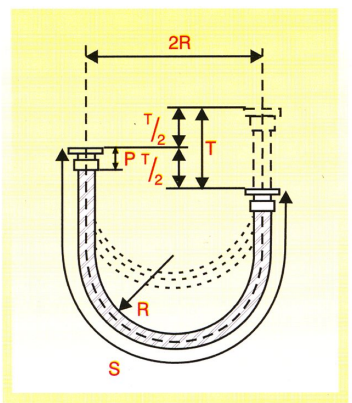
Minimum Overall length = L (Flexing) + (2 x P)

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

P- Dimension of the fittings.



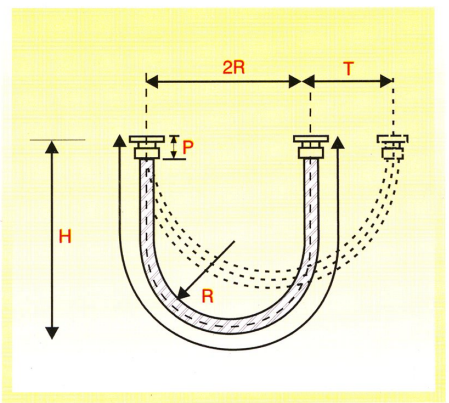
LENGTH 'L' INCH (FREE HOSE LENGTH)													
NOMINAL BORE Inch	STATIC	DIMENSION 'X' INCH (OFFSET MOTION)											
	0.00	0.59	0.98	1.38	1.97	2.95	3.94	4.92	5.91	6.89	7.87	8.86	9.84
1/4"	3.35	5.51	7.09	8.46									
3/8"-1/2"	3.55	5.91	7.48	8.86	11.42								
3/4"	3.75	6.69	8.66	10.04	12.20								
1"	4.15	7.28	9.45	11.02	13.19	16.73							
1.1/4"	4.35	8.07	10.24	12.01	14.37	17.72							
1.1/2"	5.50	9.84	12.60	14.57	17.32	20.87	24.02						
2"	6.70	11.81	14.96	17.32	20.47	24.80	28.74	31.50	34.25	37.01			
2.1/2"	7.90	13.39	16.93	19.69	23.23	28.35	14.96	36.22	39.37	42.13	44.49	46.85	
3"	8.45	14.96	19.69	22.83	26.77	32.28	37.01	40.94	44.88	48.43	51.57	54.33	57.09
4"	9.05	15.94	20.67	24.02	28.35	34.45	39.57	44.09	48.23	52.17	55.71	58.66	61.42
5"	9.65	16.93	21.65	25.20	29.92	36.61	42.13	47.24	51.57	55.91	59.84	62.60	65.75
6"	11.00	20.08	25.59	29.92	35.83	43.31	50.00	55.91	61.42	66.54	70.87	74.80	78.35
8"	12.60	22.05	27.95	32.68	38.98	47.64	55.12	61.42	67.72	73.23	78.35	82.68	87.01
10"	14.15	24.41	30.71	35.43	42.13	51.97	59.45	66.54	71.65	79.13	85.04	90.16	92.13



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

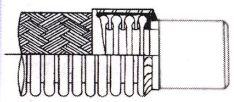
= 3.142

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

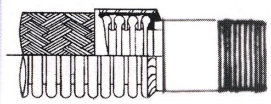
STANDARD END FITTINGS

Standard executions for annular corrugated S. S. Hose

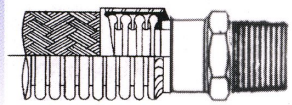
The fitting are available in Carbon Steel, Stainless Steel, Brass, Etc. Flange connection with fixed & floating flanges to meet IS, DIN, ANSI* ASA standards or as per customer's specifications.



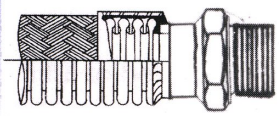
E - 001
welding end



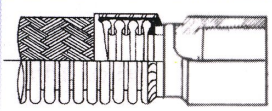
E - 002
pipe



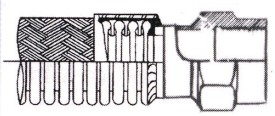
E - 003
hexagon nipple
tapered male



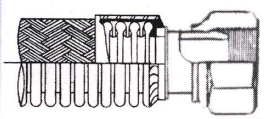
E - 004
hexagon nipple
straight male



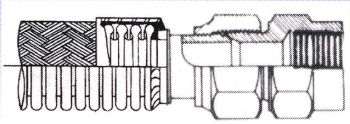
E - 005
plain socket
straight female



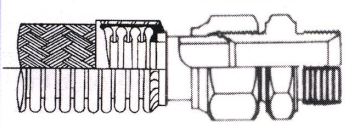
E - 006
hexagon socket
female



E - 007
female swivel

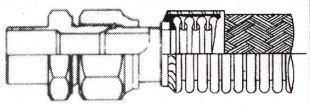


E - 008
hexagonunion
straight female

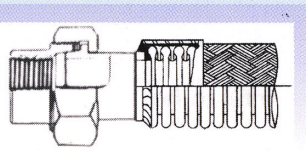


E - 009
hexagon union
straight male

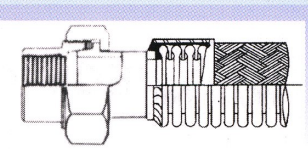
E - 010
hexagon union
welding end



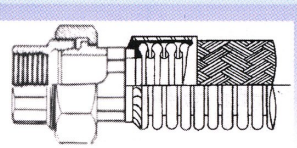
E - 011
hexagon union
straight female



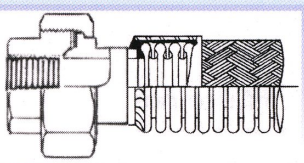
E - 012
stainless steel
hexagon union
straight female



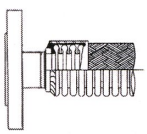
E - 013
hexagon union GF
304 type straight
female



E - 014
3000 lbs heavy
duty type straight
female



E - 015
fixed flange



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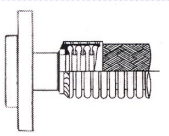
floating flange



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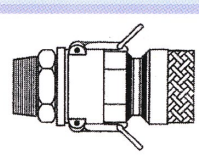
part D & F



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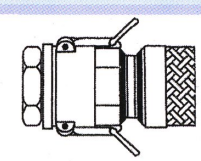
part D & A



EAGLE METAL HOSE

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 203° F refer to "Eagle" technical department.

	CARBON STEEL	S.S. 321/ 304	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[5]	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[3]	C[3,4]	C[3]	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[3]	A
Ammonia-dry	A	A	A	A
Ammonia-moist	C[3]	A	A	A
Ammonium acetate	A	A	A	A
Ammonium bi carbonate (hot)	D	A	A	A
Ammonium bromide	C	C[4]	C[4]	D
Ammonium carbonate	A	A	A	D
Ammonium chloride-dry	B	A	A	A
Ammonium chloride-moist	C	C[3,4]	C[3]	A
Ammonium hydroxide	B	A	A	A
Ammonium meta phosphate	A	A	A	A
Ammonium nitrate	C[3]	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[3,4]	C[3]	A
Amyl chloronaphthalene	D	A	A	A

	CARBON STEEL	S.S. 321/ 304	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[4]	A[4]	A
Atmosphere-marine	C	B[4]	B[4]	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[3,4]	C[3]	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[3,4]	C[3]	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[3,4]	C[3,4]	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[3,4]	C[3]	A
Boron trifluoride-dry	A	B	B	D
Brines	C	C[3,4]	C[3]	A
Bromic acid	C	C	C	D
Bromic-dry	C	B	B	A
Bromic-moist	C	C	C	A
Bunker oil	A	A	A	A
Butter oil	A	A	A	A

CORROSION RESISTANCE TABLE

	CARBON STEEL	S.S. 321/ 304	S.S. 316	TEFLON
Butadiene	A	A	A	A
Butane	A	A	A	A
Butanol (Butyl alcohol)	A[5]	A	A	A
Butyl acetate	B	A	A	A
Butyl amine	A	A	A	D
Butyl carbitol	A	A	A	A
Butyl phenols	B[5]	B	B	D
Butyl mercaptan	D	A	A	A
Butyl stearate	A	A	A	A
Butyaldehyde	D	D	D	A
Butylamine	A	A	A	A
Butyric acid	C	B	B	A
Cadmium chloride-moist	C	C[3,4]	C[3]	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[3]	C[3]	D
Calcium carbonate	A	A	A	A
Calcium chlorate	D	B	A	D
Calcium chloride-moist	C	C[3,4]	C[3]	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[3,4]	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
Cellesolve butyl	A	A	A	A
Cellulube	A	A	A	A
Chlorine-dry	B	A	A	A
Chlorine-moist	C	C[3,4]	C[3]	A
Chlorine trifluoride	C	D	D	D
Chloroacetic acid	C	C[3,4]	C[3]	A
Chloric acid	C	C[3]	C[3]	A
Chlorinated water (saturated)	B	D	D	A
Chlorine dioxide-dry	B	A	A	A
Chlorin Dioxide-moist	C	C[3,4]	C[3]	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[3]	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

	CARBON STEEL	S.S. 321/ 304	S.S. 316	TEFLON
Copper chloride-moist	C	C[3,4]	C[3]	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
Diancetone	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
Dichloroethlylene-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 proply keton	D	A	A	A
Dimethyl anline	D	D	D	A
Dimethyl Formamide	A	A	A	D
Dimethyl phthalate	D	D	D	A
Disocyanate	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[4]	A	A	A
Epichlorohydrib-moist	C[4]	C[3,4]	C[3]	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 Acrvlate	A	A	A	D
Ethylene	A	A	A	A
Ethyl Cellulose	A	A	A	A
Ethyl benzene	B	B[3]	B	A
Ethyl chloride-dry	A	A	A	A
Ethyl chloride-moist	C	C[3,4]	C[3]	A
Ethyl ethers	B	A	A	A
Ethyl mrcaptan	B	D	D	A
Ethyl pento 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[1,3,4]	C[3,4]	A

EAGLE METAL HOSE

CORROSION RESISTANCE TABLE

	CARBON STEEL	S.S. 321/ 304	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[3,4]	C[3]	A
Ferrous nitrate	D	A	A	A
Ferrous sulphate	C	B[4]	B	A
Fluoroboric acid	D	A	A	A
Fluorine-dry	A	A	A	A
Fluorine-moist	C	C	C	A
Formaldehyde	B[5]	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[5]	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[4]	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[4]	C	A
Hydrocarbon acid	C	A	A	A
Hydrocarbons, pure	A	A	A	A
Hydrochloric acid	C	C[4]	C[4]	A
Hydrocyanic acid	C[3]	C[1,4]	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	A
Hydrogen chloride-moist	C	C[4]	C[4]	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[5]	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[1,4]	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

	CARBON STEEL	S.S. 321/ 304	S.S. 316	TEFLON
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
Nitroluene	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[3]	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
Parafin	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/ 304	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[3,4]	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
Propane	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[4]	C[4]	A
Pyridine	B[5]	B	B	A
Pyrrolidine	B	B	A	A
Quinine	C	B	B	A
Quinine sulphate-dry	C	A	A	A
Rosin	C[5]	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[3]	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[4]	B	A
Sodium bicarbonate	C	A	A	A
Sodium bisulphate	C	B[1.4]	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[3,4]	C[3]	A
Sodium chloride-dry	B	A	A	A
Sodium chloride-moist	C	C[3,4]	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[4]	C	A
Sodium hydroxide	B[3]	B[3]	B[3]	A
Sodium hypochlorite-dry	B	A	A	A
Sodium hypochlorite-most	C	C[1.4]	C[4]	A
Sodium metaphosphate	C	A	A	A
Sodium metasilicate	B	A	A	A
Sodium nitrate	B[3]	A	A	A
Sodium nitirite	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/ 304	S.S. 316	TEFLON
Stannic chloride-dry	B	A	A	A
Stannic chloride-moist	C	C[3,4]	C[3]	A
Stannous chloride-dry	B	A	A	A
Stannous chloride-moist	C	C[3,4]	C[3]	A
Starch Aqua Solution	A	A	A	A
Steam	C	A	A	A
Stearic acid	C[5]	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[3]	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	A	A
Sulphur chloride-moist	C	C[3,4]	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[1.4]	C[1.4]	A
Tail Oil	B	B	B	A
Tannic acid	C[5]	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
Titanum 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	D	A
Tributyl phosphate	A	D	D	A
Trichloro acetic acid	C	C[3,4]	C[4]	A
Trichloroethane-dry	A	A	A	A
Trichloroethane-moist	C	C[4]	C[4]	A
Trichloroethylene-dry	A	A	A	A
Trichloroethylene-moist	C	C[4]	C[4]	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	A
Zinc chloride-moist	C	C[3,4]	C[3]	A
Zinc molten	C	C	C	D
Zinc sulphate	C	B	A	A

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Shipping

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Textile Industries

Thermal Power Station

Lubrication Systems

Nuclear Power Plant

Power Generation

Fossil Fire Plants
Combined Cycle Plants
Industrial Gas Turbines
Nuclear Plants

Heavy Industrial

Foundries
Steel Mills
Cement Plants
Aluminum Plants
Kilns & Smelters

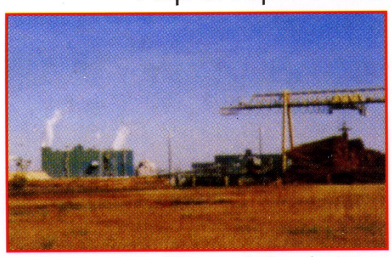
Environmental Applications

SCR & NOx Systems
Waste Water Treatment Plants
Waste & Recycling Incinerators
Stack & Chimney Seals

Petrochemical

Byproduct Incineration :
Severe Chemical Attack Refineries
Nephtha Loading Unloading

Pulp & Paper Plants



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Paper Processing
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Blowers

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