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Interlock Exhaust

MANGUERA METÁLICA

## INTERLOCKED METAL HOSE

### HOSE FUNDAMENTALS

Penflex interlocked metal hoses are made for a variety of specialized industrial applications and are available in a wide range of metals, styles and sizes. Interlocked hose is manufactured by helically winding preformed metal strip over a sizing mandrel and folding together the adjacent edges forming the interlocked convolutions. A packing material may be inserted into a preformed groove within the interlock to make the hose pressure tight or to minimize leakage. This packing forms a continuous gasket seal throughout the entire length of the hose. Flexibility is achieved through the sliding action which is provided by the slip-space within each interlocked convolution. The limits of axial elongation or compression are established when the convolutions are all fully opened or are all fully closed. Similarly, the minimum bend radius is achieved when the convolutions on the outside of the bend are fully opened, and those on the inside of the bend are fully closed. Considerable force is required to exceed these limitations. However, if the hose is forced beyond these limits, it will be permanently deformed. Certain styles of non-pressure hose are designed to minimize metal to metal contact within the interlocked convolutions, and are therefore very flexible. Conversely, pressure hose is considerably less flexible since the forces necessary to compress the packing material produce a greater resistance to the sliding action.

### GUIDE TO INTERLOCKED HOSE SPECIFICATION TABLES

**Nominal Diameter**– This column lists the nominal diameters of the hose expressed in inches.

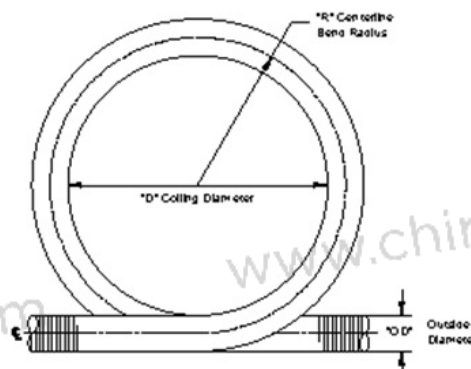
**Strip Metal Thickness**– This column indicates the thickness of the strip metal from which the hose is manufactured.

**Weight** – This column specifies the approximate weight per foot of hose and is given in pounds per foot.

**Burst and Working Pressures** – This data is applicable only to M-100 pressure hose. Review the M-100 pressure hose specification section for definitions of these terms.

**Bend Radius**– Identified as Minimum Centerline Bend Radius (for M-100 pressure hose) and Minimum Coiling Diameter (for all non-pressure hoses), this column specifies the bending limitations of the particular hose. The following drawing and formulas define these terms.

R – Centerline Bend Radius  
D – Coiling Diameter  
OD – Outside Diameter of Hose  
 $R = D + OD/2$   
 $D = 2R - OD$



INTERLOCKED EXHAUST HOSE

# Description

Penflex exhaust hoses are produced in a wide range of ID sizes, metals and weights. This range is available to provide the right hose for the application at the most economical cost. Interlocked exhaust hose utilizes a fully interlocked construction for strength and durability while allowing the hose to have excellent flexing characteristics. The normal configuration of exhaust hose is unpacked and fully extended. In order to minimize leakage, however, exhaust hose can be supplied packed upon request.

# End Fittings

Standard pipe couplings, nipples and fixed or floating flanges can be attached to exhaust hose. Any special type of fitting can be adapted to fit this hose. Attachment can be by welding, brazing or with adhesives. Additionally, hose clamps and automotive muffler clamps can be used.

# Specifications

Penflex exhaust hoses are produced in galvanized steel and stainless steel as standard but are also available in aluminum and bronze as specials. The strip thickness and thus the hose weight can be selected to match the application depending upon the degree of rough handling and the abrasive conditions of the service. Penflex makes three different weights of exhaust hose as indicated in the following tables.

## Series Weight Designation Strip Thickness

IE30	Light	.010" to .012"
IE50	Standard	.018" to .020"

The size range of exhaust hose is from 1/2" to 8" inside diameter. For sizes larger than 8"ID, use the standard conveyor hose (up to 20"ID).

# Applications

Some typical uses of exhaust hose are: engine exhaust and vacuum and collection service, conveying, ventilating lines, and protective casing for cable and tubing.

### IE30 Interlocked Exhaust Hose

Strip Thickness 0.010/0.012"

Nominal Diameters		Minimum Coiling Diameter	Wt/Ft
Inside	Outside		
½	0.61	6	0.23
¾	0.834	7	0.32
1	1.11	9	0.41
1 ¼	1.385	11	0.44
1 ½	1.61	13	0.54
1 ¾	1.86	15	0.63
2	2.11	17	0.72
2 ¼	2.36	19	0.80
2 3/8	2.540	20	0.85

2 ½	2.61	21	0.89
2 ¾	2.86	23	0.96
2 7/8	3.083	25	1.00
3	3.11	26	1.06
3 ½	3.61	30	1.24
4	4.200	34	1.41
5	5.215	42	1.76
5 1/2	5.700	46	1.94
6	6.11	50	2.11
7	7.11	58	2.46
8	8.11	66	2.80

### IE50 Interlocked Exhaust Hose

Strip Thickness 0.018/0.020"

Nominal Diameters		Minimum Coiling Diameter	Wt/Ft
Inside	Outside		
1	1.22	17	0.70
1 ½	1.66	17	0.86
1 ¾	1.91	19	1.00
2	2.20	22	1.13
2 ¼	2.495	25	1.27
2 ½	2.66	27	1.40
2 ¾	2.91	29	1.54
3	3.16	32	1.67
3 ½	3.66	38	1.95
4	4.230	43	2.22
5	5.16	53	2.76
6	6.16	63	3.30
7	7.16	74	3.85
8	8.16	84	4.39

#### Notes

1. Tabulated weights apply to stainless steel.
2. Intermediate sizes, alloys and flexibility characteristics are all subject to quotation from the factory.
3. Dimensional Tolerance is +/- .020"