

Application Data

General Hose Information

Hose Construction

A hose consists of three components including the tube, reinforcement, and cover. Each component serves an important function in contributing to the overall performance of the hose.

Components of a hose:

Tube functions:

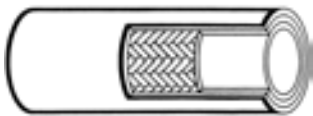
- Conveys media
- Temperature resistant
- Protects reinforcement and cover
- Dissipates static electricity

Reinforcement functions:

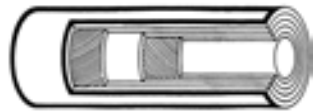
- Supports pressure/vacuum
- Supports tube
- Controls elongation/shrinking of hose OD/ID
- Helps fitting retention

Reinforcement types:

- 1) Braid - carbon steel or fiber
- 2) Spiral - carbon steel or fiber
- 3) Helical - carbon steel



Braid reinforcement



Spiral reinforcement



Helical reinforcement

Cover functions:

- Protects reinforcement from external environment
- Provides weather, abrasion, chemical, temperature, and ozone resistance

Hose Selection

Selecting the proper hose for an application is critical to ensure safety of people and property, as well as long hose life. Therefore, it is important to understand the factors involved.

These factors are:

- Application
- Pressure and/or suction
- Environment
- Compatibility with material conveyed
- Temperature
- Size
- Flexibility
- Bend radius
- Weight

Application

The first step in properly selecting a hose is to identify the application and material to be transferred. Then consider the hoses available for that type of service. Boston hose is intended for specific applications and materials.

! WARNING Hose use and care: **Never use a hose to transfer material it is not specifically meant to transfer. Doing so could deteriorate the hose and result in leaking, hose bursting, or end blow-offs. This could lead to serious personal injury or death. Always transfer material in a hose that is designed specifically to transfer that material.**

A special application consideration, especially in gases, petroleum-based liquids, volatile solvents, and dry material transfer applications, is whether the velocity of the material being transferred will cause static buildup. This, in turn, can cause an explosion.

According to Rubber Manufacturers Association (RMA) Hose Handbook IP-2 1996:

Electrical engineers differ in opinion on the effects of static electricity and the means of dissipating it. In handling gasoline and other petroleum-based liquids, recognized national associations and companies have conflicting opinions on the need for conductive hoses.

Until a consensus is reached among all associations, laboratories and users and a standard practice is established, it is essential that the user determine the need for a static bonded hose based on (a) the intended use of the hose, (b) instructions

from the company's Safety Division, (c) the insurer, and (d) the laws of the States in which the hose will be used.

Some types of hose include a body reinforcing wire. This wire can be used for electrical continuity provided that proper contact is made between it and the hose coupling. This can be done by extending the body wire to the ends of the hose, or by attaching a light static wire to the outermost coils of the body wire. This lighter wire is led through the ends of the hose and attached to the couplings. In nonwire reinforced hose, a static wire can be included in the hose body.

The tendency has been toward a grounding connection completely separate from the hose or to have the tube or cover of the hose conducting. Examples would be sand blast hose with conducting tube or aircraft fueling hose with a conducting cover.

An internal static wire could break or lose contact with the couplings and not be detected visually. This could occur from an unusual stress imposed on the hose.

Finally, be aware that many industries have governing agencies that issue mandatory or suggested guidelines for the use of hose in certain applications.