



## Flexible Duct Installation

*In every box of flexible duct shipped to a builder, there is an installation manual outlining the approved methods for using the material. However, we often see these ducts installed incorrectly, which can reduce the entire HVAC system's performance and even shorten the life of the equipment.*

The routing of flexible duct, the number of bends, the degrees in each bend, and the amount of sag or direction changes (snaking) allowed between support joints will have serious effects on system performance due to the increased resistance each introduces. Use the minimum length of flexible duct to make connections. Excess length of flexible duct shall not be installed to allow for possible future relocations of air terminal devices.

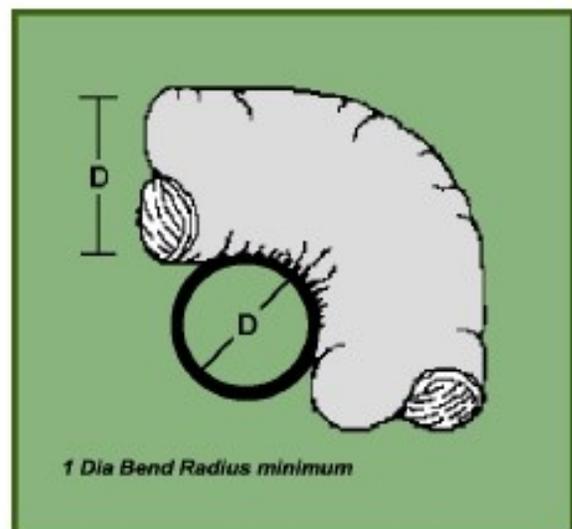
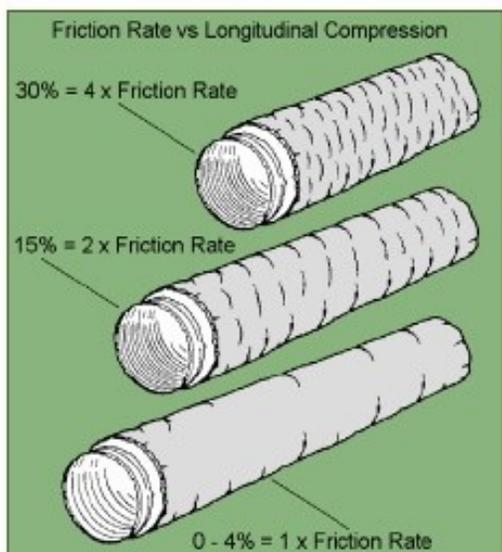
Avoid installations where exposure to direct sunlight can occur, e.g., turbine vents, sky lights, canopy windows, etc. Prolonged exposure to sunlight will cause degradation of the vapor barrier.

Install ducts fully extended. Do not install in the compressed state or use excess length as this will noticeably increase friction losses (see below).

Do not bend ducts across a sharp corner of building materials such as joists or truss supports. Ducts should not be crimped against joist or truss members, pipes, wires, etc. as this increases pressure loss and reduces air flow.

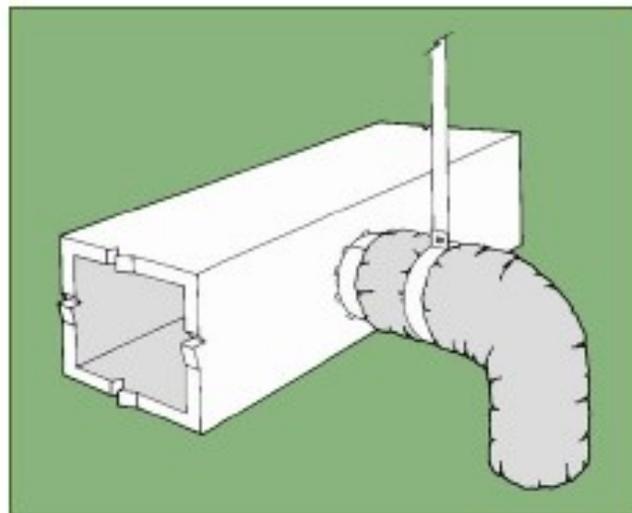
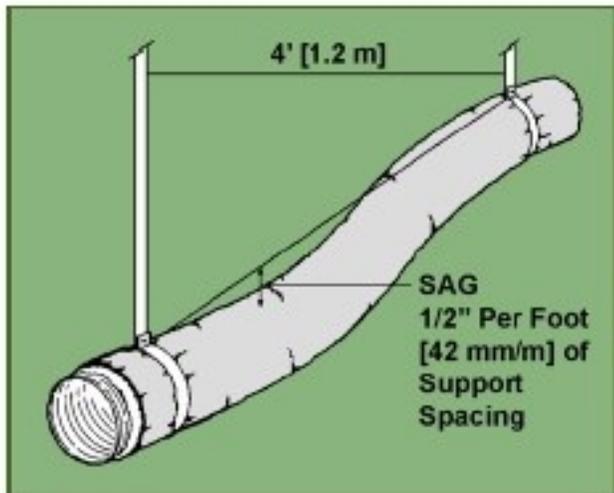


The bend radius at the center line of ducts shall be equal to or greater than one duct diameter. Sharper bends increase pressure drop significantly and reduce airflow.



Flexible duct shall be supported at manufacturer's recommended intervals, but at no greater distance than 4'. Supporting shall be provided so that the maximum center-line sag is 1/2" per foot of spacing between supports (2" per 4').

The duct should be supported between a metal connection and band by allowing the duct to extend straight for at least one duct diameter before making the bend. This will avoid possible damage of the flexible duct by the edge of the metal collar and allow for efficient air flow and fitting performance.



*Incorrect: Duct supports are greater than 4' apart, leading to excessive sag.*



*Incorrect: Lack of flexible duct support can lead to the duct separating from the manifold, leading to energy loss and ineffective heating and cooling.*

The information and illustrations in this brochure were obtained from the Air Diffusion Council's Flexible Duct Performance & Installation Standards, 5th Edition