INSULATING ROUND / OVAL DUCT

Round and oval duct, including spiral wound ductwork can be externally insulated (wrapped) with K-FLEX USA flexible elastomeric closed cell foam sheet insulation products. Its' drapability / flexibility make it an ideal choice for insulating this type of duct work.

For ductwork located *indoors*, insulating round / oval duct is handled similarly to the methods used to insulate large diameter pipe. The duct work is wrapped with sheet and the longitudinal seams and butt joints are adhered with contact adhesive. It is not necessary to have 100% adhesion of the insulation to the duct. With spiral wound duct, the ribs would prevent good contact with the surface and would make the insulation appear wavy if one tried to attain 100% adhesion.

Calculating Sheet Lengths

The sheet length required is based on the OD of the *duct work*. The formula used for estimating purposes is: (duct work OD + 2 X insulation thickness) X 3.14 = sheet length. All measurements are in inches. This formula can be used for all duct sizes and / or insulation thicknesses. For oval ductwork it may be necessary to measure the actual OD. Final adjustments to sheet length must be made on site as many duct systems have stiffening ribs which will affect the actual OD.

Before pre-cutting large quantities of sheet, it is recommended that the sheet be test fitted to the duct work. Sheet should fit loosely (no stress on the seam), approximately ¼" space between the insulation and the duct work. Never stretch insulation over the ductwork. An additional ½" can be added to the lengths for a looser fit (horizontal duct only) but this may affect the yield and could cause the insulation to sag on the duct work over time.

Installation Recommendations

Select the correct size sheet for the duct work to be insulated. Never stretch the insulation to make it fit. Standard sheet dimensions are 36" x 48". Forty-eight inch wide rolls are also available, and may be more cost effective due to reduced scrap rates. Roll length varies by insulation thickness.

Apply a brush coat of contact adhesive to both seams. Fully adhering the sheet to the duct work is not recommended. On duct work 20" and larger, the sheet should be adhered to the bottom 1/4 of horizontal duct work to minimize the possibility of the insulation sagging. Place the insulation around the duct and firmly press the seams together. Join opposite ends first, and then work towards the center. (This ensures straight edges at the ends for better butt joints). Finally apply adhesive to butt joints and press adjoining insulation sections firmly together.

To minimize sagging and buckling on vertical duct work, it is recommended that the insulation be adhered in specific areas. Adhere insulation to the duct at every butt joint (about 4 inches on either side of the joint) around the circumference of the duct or by running a narrow (2") band of adhesive vertically (longitudinally) up the duct every 16 inches (or portion thereof) around the circumference (but not less than two adhesive bands). This should not detract from the appearance but will add support to the insulation.

For duct work with evenly spaced deep ribs, insulation can be installed between the ribs, adhering as recommended above. Strips of insulation can then be cut to cover the ribs, extending 2" onto the insulation on either side of the ribs.

Note: Because of the potentially extreme environmental conditions, exterior (outdoor) round and oval ductwork requires 100% adhesion to the sheet metal, and the use of mechanical fastening in addition to adhesive is recommended. Insulation used on outdoor duct work would require protection from mechanical abuse and UV resistance i.e. coating, jacketing or cladding.