



## Duct Calculations in the MIKE system:

The MIKE system calculates duct insulation a few different ways. A little background information first. There are a couple of switches in the MIKE system that effect duct material quantity and labor calculations. These switches are located in the Tables module under the Global drop down menu.

The first is called **Duct Wrap Calculation Type** this switch has 2 options. They are called **Extended** and **Same as Board plus Lap**. We feel the **Extended** option is the most accurate of the two options.

The second switch is **Duct Finish Labor Calculation** and it has two options. The first **Insulation SQ** tell the system to use the insulation square footage to calculate Finish Labor and the 2nd **Jacketing SQ** tells the system to use Jacketing square footage to calculate Finish Labor.

Please note that waste is only used in the Pricing Calculation as the SF of Duct. Labor uses the SF of Duct Insulation or Jacketing (depending on switch above) before adding waste. Or to say it a different way, waste is not labored. In a future release we will be adding a switch that will make laboring waste an option.

Currently a Duct Spec only has one waste figure field that is used for both Insulation and Jacketing. We will be adding an additional field for Jacketing Waste in a future release.

## Duct Insulation Calculations:

### Variables:

F = Length of Duct in Feet  
T = Thickness of insulation in inches  
D = Diameter in inches  
S = Semi Perimeter in inches  
L = Lap in inches  
P = Pi = 3.1416  
W = Waste = (1 + % / 100) used for pricing only

### Duct Wrap Calculations:

Round =  $F * (((D + (2 * T)) * P) + L) / 12 * W$   
Oval =  $F * (((D1 + D2 / 2) + (2 * T)) * P) + L) / 12 * W$   
Rectangle (Extended) =  $F * (((S + (4 * T)) * 2) + L) / 12 * W$   
Rectangle (Same as Board Plus Lap) =  $F * (((S + 2 * T) * 2 + L) / 12) * W$

### Duct Board Calculations:

Rectangle =  $F * (((S + 2 * T) * 2 + L) / 12) * W$

### Duct Finish / Jacketing Calculations:

Additional Variables:  
I = Insulation SF  
J = Jacketing Lap Size in inches

Rectangle =  $F * (1 + (F + 4 * T) / 12) * W$   
Round or Oval =  $F * (1 + J / 12) * W$