TECHNICAL INFORMATION COMMUNICATION

Quality and Continuous Improvement

Number: TIC2013-0008 **Date:** 8-20-13

Title: Fan Coil Sweat Reduction Suggestions

Product Category: Cooling Products

Products Affected

All Fan Coil Products

Situation

Fan coil cabinets installed in high humidity applications could sweat if not installed in a conditioned space.

Technical Information

Fan coils are to be installed in a conditioned space to eliminate the condition of cabinet sweating. The following information is to help reduce cabinet sweating when the recommended locations are not followed.

Insulated duct work is required.

Airflow needs to be above 300 CFM/Ton to help reduce cabinet and duct sweating.

The cabinet can sweat in three different areas identified below as Zone 1, 2 and 3. Each area can be improved but will require different type of field modification.

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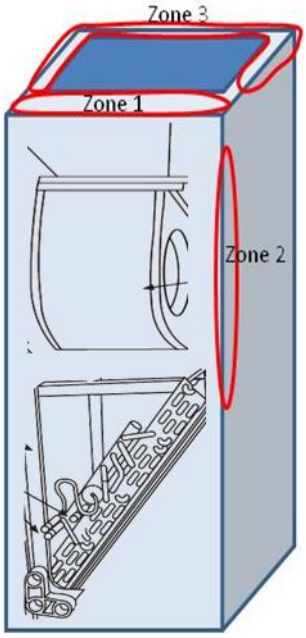
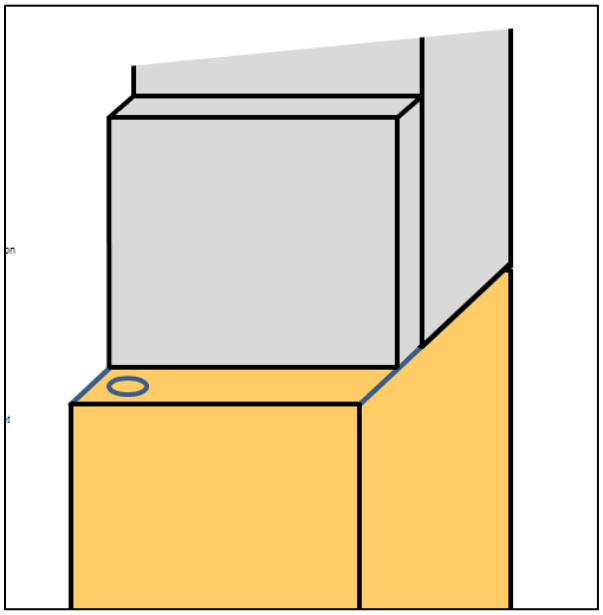


(Figure 1)

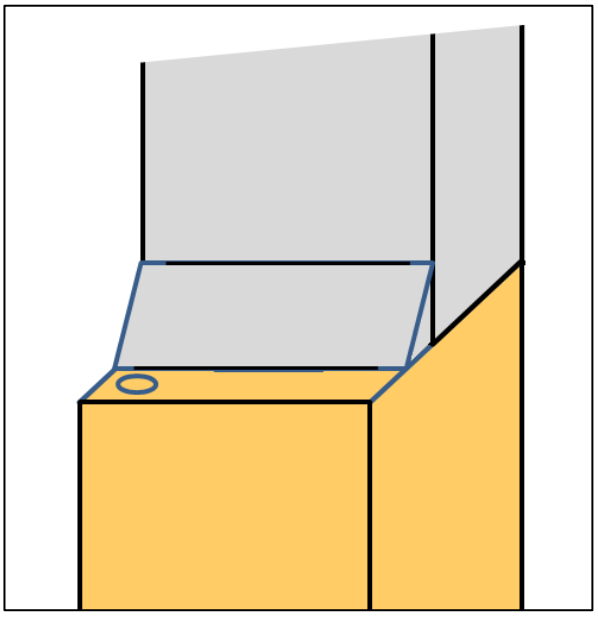
Zone 1:

Insulated ductwork or insulation needs to be installed just behind the fan coil knockout to help reduce the sweating in this area of the cabinet. The easiest method to cover the area between the knockout and the fan coil discharge opening is by creating some type of false duct or dead air space using duct board. Bring the insulated duct or wedge forward just behind the knockout. Gasket material needs to be added between the duct and fan coil cabinet to eliminate air leakage at system joint.

Zone 1 - *continued*:



(Figure 2)



(Figure 3)

Insulated duct board with false panel or wedge up to knockout.

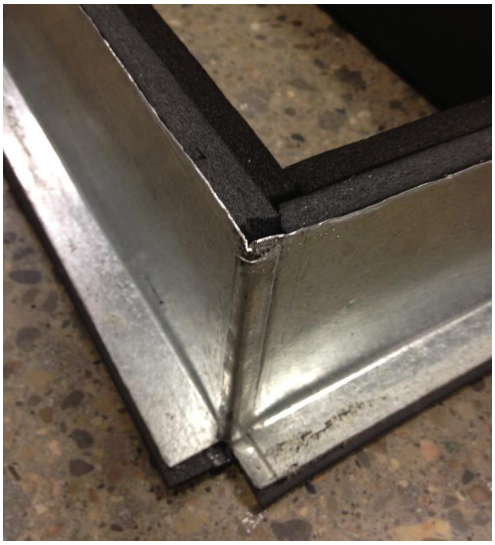
Zone 2:

Adding a 2” wide x 1/8” thick door gasket can help reduce the cabinet sweating in this area.

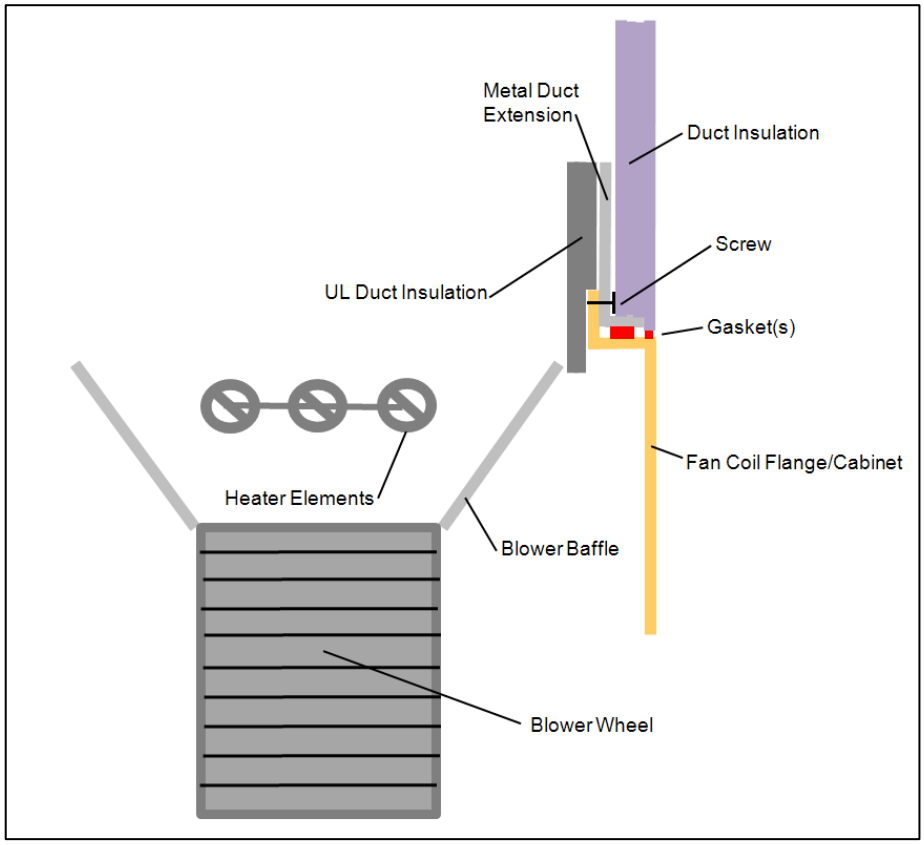
(Picture 1)

Zone 3:

An insulated partition/duct extension insert assembly will be required to help reducing sweating in this area of the cabinet (Picture 2, Figure 4). Insulated panel/duct extension assembly can be placed inside of the exterior shell of the discharge flanges of the fan coil blower section. This insulated partition/duct extension assembly will be the interior insulation that will be installed “inside” of the insulated duct work shown prior in Zone 1 (Figure 1).

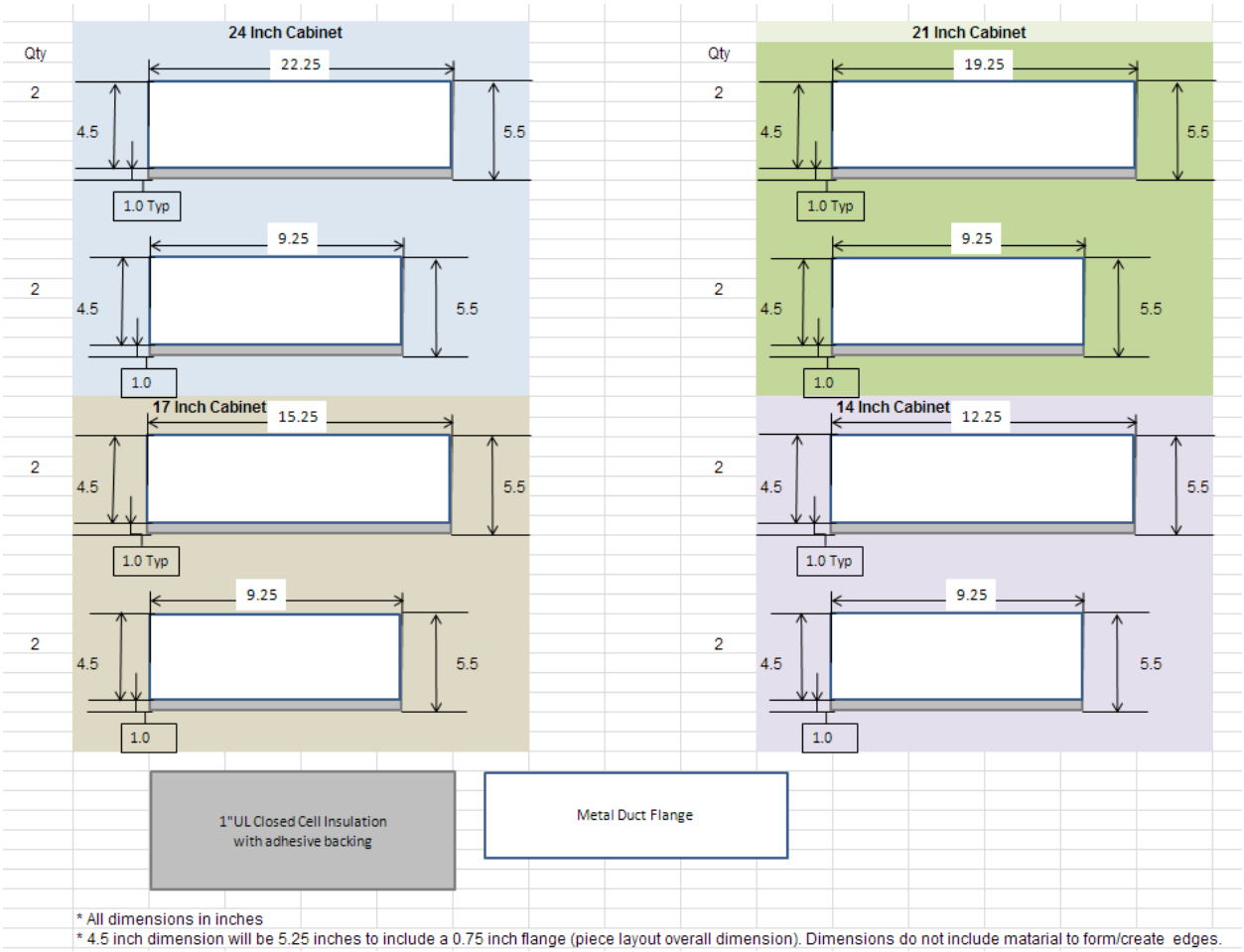


(Picture 2)



(Figure 4)

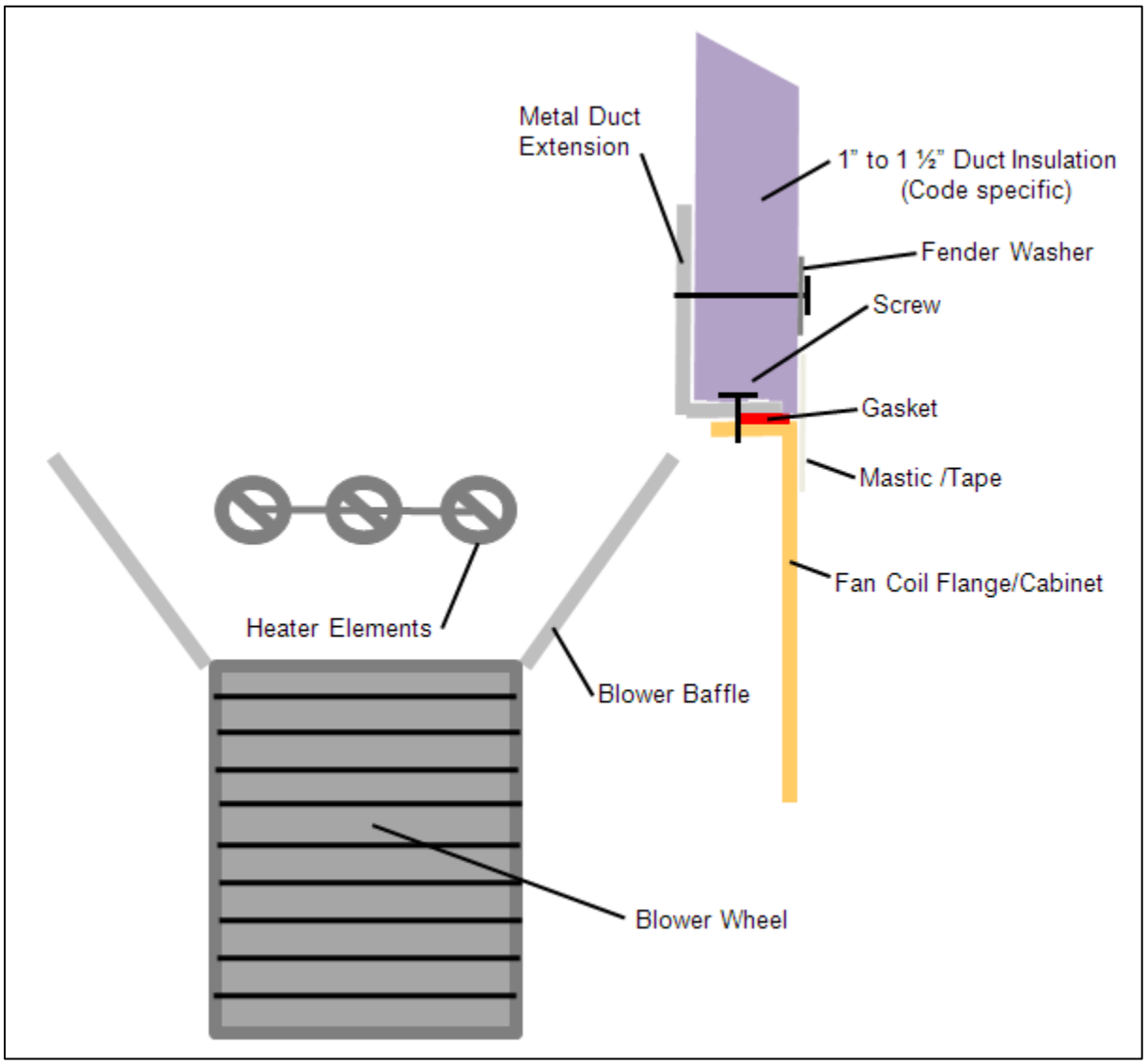
The following duct and insulation dimensional drawing (Figure 5) will provide a guide to help assemble a insulated panels/duct extension that can be placed inside of the insulated connecting duct work. The dimensions are only for reference to achieve the correct distance for each fan coil discharge blower outlet. Additional material will need to be added to fabricate and assemble the insulated panel/duct extension. The 1" UL duct insulation needs to be approximately ½" lower than the bottom of the metal duct extension flange and positioned inside of the fan coil flange (Reference figure 4). As indicated in the line drawing, place gasket material between the metal duct extension and the fan coil cabinet. When installing the metal duct extension assembly compress the gasket and then drive screws into the side of the assembly into the fan coil cabinet flange.
If the fan coil flange is left on the cabinet and a thicker insulation of 1" is installed apply some type of chalk or gasketing to the edge of the installation overhang to ensure a good seal is retained at this connection (Reference figure 7). This method will also help reduce any conduction through the metal duct extension at this joint. As mentioned in Zone 1 instructions, a gasket needs to be placed between the insulated duct work and the fan coil cabinet.



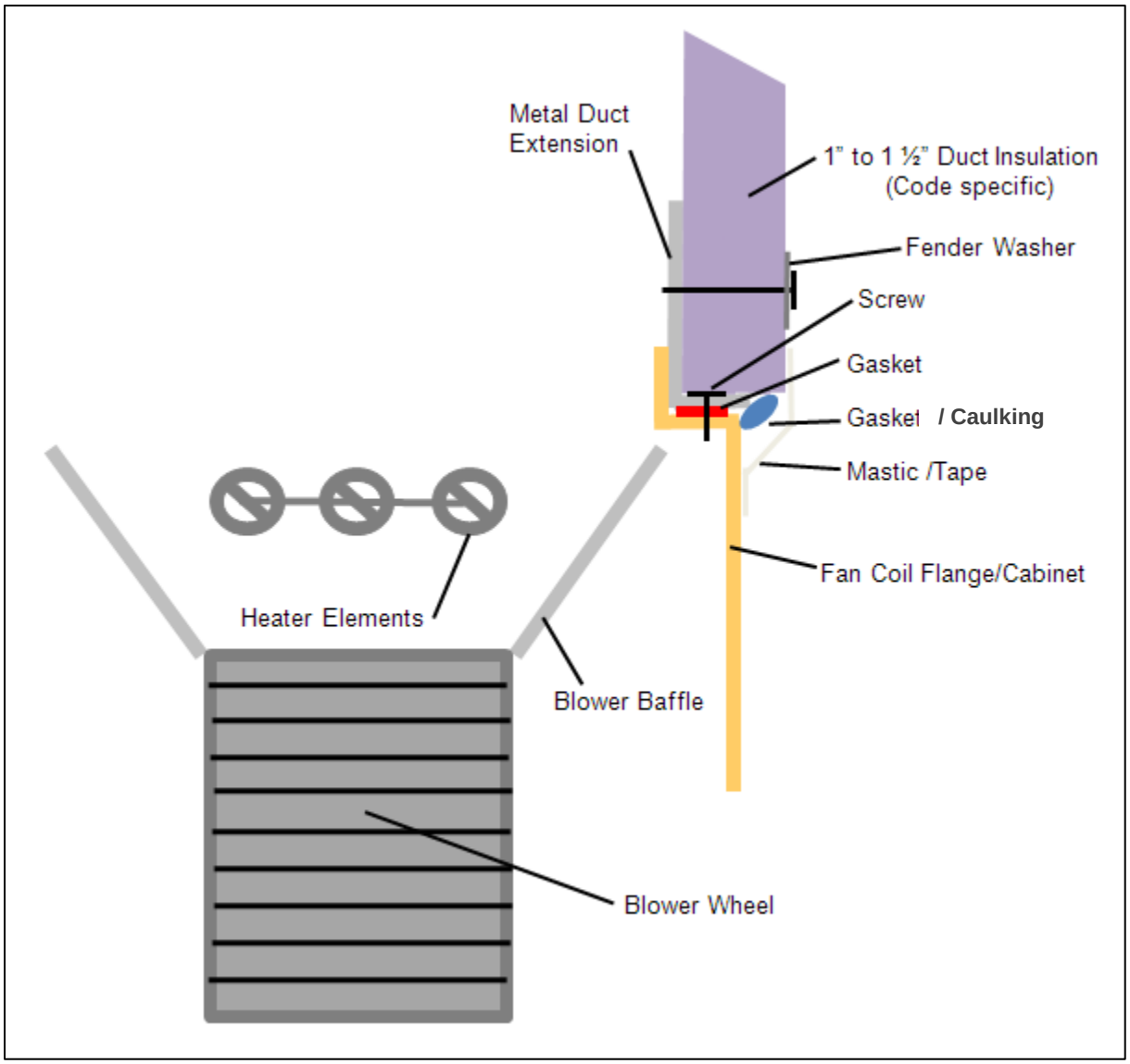
(Figure 5)

Zone 3 (continuation):

Some locate codes require 1" or more of duct board to help reduce sweating (Figure 6 and 7). The fan coil duct flange can be flattened or removed to allow the metal duct extension to be added to the top of the fan coil to be able to secure and compress a gasket between the duct board and unit. The metal duct extension provides a means to mechanical fasten and secure the duct board to the unit. As indicated in the line drawing (Figure 6 and 7), place gasket material between the metal duct extension and the fan coil cabinet. When installing the metal duct extension compress the gasket and then drive screws into the top of the fan coil cabinet. Install the insulated duct board and mechanically fasten (fender washers and screws) the duct board to the metal duct extension. Metal tape or mastic can be used at the unit and duct board seam to finish the installation.



(Figure 6)



(Figure 7)

References

Fan Coil Installation Instructions