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## ADI TECHNICAL BULLETIN – ROOM PRESSURE FRAME-OF-REFERENCE

**DISCLAIMER:** This bulletin is for information only and is not to be relied upon in making any decisions regarding code issues, which of course should be addressed with your state and local officials, a registered professional engineer, your insurance carrier and any other authority having jurisdiction (AHJ.)

**SUBJECT:** Room Pressure Frame-of-Reference & ADI's Baulin-tube® Indicator.

**DATE:** December 08, 2005

**REVISED:** March 31, 2008

**ISSUE:** If two rooms are next to each other and air flows from one room to the other, where do you put the indicator? Should it be a positive or negative indicator? What side of the wall do you put the ADI-supplied wall label that tells how the indicator works and tells what the desired pressure mode for the room is?

### DISCUSSION:

First, when air flows out of a room into another adjacent room, the room from which the air is leaving is called the positive pressure room and the room the air is entering is called the negative pressure room. Note that positive always flows to negative. The Baulin-tube® Indicator should be placed in the wall that separates the two rooms. That way, you see the ball in the indicator moving in the direction of airflow.

*To determine whether to use a red-negative or green-positive indicator, we often think of the desired pressure of the concerned room before we enter it from the outside world. Thus imagine walking in from the street and making your way through the building and into the final interior room of concern. Before you open each door to a concerned room, that is where an indicator should go. *The pressure mode of the indicator should be the pressure of the concerned room relative to where you are before you open the door to that room. The corresponding wall label should be on the wall or door side where you are before you enter the concerned room.**

For example, a hospital infectious isolation room should draw air into it from all adjacent rooms. Thus it is negative to the adjacent rooms, which are considered positive to the isolation room. Before you walk into the isolation room from the outside corridor or anteroom, the isolation room is suppose to be negative. Thus there should be a red ball, negative pressure, Baulin-tube® indicator at the door from the corridor/anteroom to the isolation room. ADI's "Negative Room Wall Label" (supplied by ADI) should be on the corridor/anteroom side. If the red ball is not sucked into the room with the door closed, and you can see the ball, a problem exists before you even open the door.

The same logic holds for a positive pressure room such as a hospital operating room. Before you open the door into the room, you should see the green ball. If not, the ball is inside the room and there's a problem before you even open the door.

Animal Rooms: Another example which comes up often is the application of procedure room within an animal resource holding room. The holding room is straddled by a clean corridor and a dirty corridor. There is a general hallway that connects via doors to the clean corridor via an anteroom. The general hallway also connects via doors to the dirty corridor. The HVAC Engineer desires the airflow to travel from the general hallway, to the dirty corridor. The air from the clean corridor goes out into the anteroom and into the general hallway. The air from the clean corridor also goes into the animal holding room and then into the procedure room within the holding room. The air from the holding room also goes out into the dirty corridor.

Here's what we recommend. First, starting from the street and headed to the procedure room via the Clean Corridor: Before you open the door to the clean corridor, there should be a positive pressure indicator at the door with ADI's positive pressure wall label. As you walk through the clean corridor and approach the holding room door, there should be a negative indicator with an ADI Negative Room wall label indicating the holding room is negative relative to where you are. Once in the holding room, there should be a negative indicator in the wall to the procedure room and the ADI Negative Room wall label should be next to the procedure room door before you enter the procedure room.

Now, let's say you are walking in from the street and want to go to the procedure room via the Dirty Corridor. Take the test by circling the capitalized choices to the following: Before you walk into the dirty corridor from the general hallway, there should be a NEGATIVE POSITIVE pressure indicator in the wall and you SHOULD SHOULD-NOT see a NEGATIVE POSITIVE ADI-supplied wall label before you walk into the dirty corridor. Once in the dirty corridor, before you walk into the holding room, there should be which type of indicator and wall label : NEGATIVE POSITIVE. Once in the holding room, what should you see before you walk into the procedure room: a NEGATIVE POSITIVE indicator with ADI wall label. The answers are:

NEGATIVE  
SHOULD  
NEGATIVE  
POSITIVE  
NEGATIVE

Any questions? Feel free to contact Brian at ADI

END