

The Art of Losing

There is an art to losing. It takes a special person of unusually bad habits to achieve the highest ranks in the art of losing. Sad to say, the older I get the closer these loftier ranks become.

First it was my head that started to grow a "sunroof" and I lost most of my hair and I definitely did not like that. Then it was my teeth but I have a good dentist so no one will ever know. I still do not like losing anything but now I have had to accept it and/or try to find ways to avoid it. Losing is only good for debt, weight and bad politicians.

Now what does "losing" have to do with windows?

Have you ever walked through a window factory and seen a clean floor? Usually there is debris of some sort on the floor from vinyl scraps to broken glass to discarded aluminum pieces. When I see this I see dollar signs. I see wasted money.

There may never be a window factory that uses 100% of every piece of material that it purchases with zero waste but every window and door manufacturer must daily strive to reduce expensive material shrinkage. If not then they are accomplishing the art of losing through complacency. This is called "Complacency Losing."

This is also true of the inert gas used to fill Insulated Glass Unit's (IGU's). If an IGU manufacturer puts argon or krypton in their window or door via a hand filled system then, on average, there is approximately 30 to 40% waste of gas per window. Only 60 to 70% of the gas will end up in any IGU. I hate this! I see dollar signs being sent into the air.

Now there are many good reasons for this waste of gas starting with "speeding up" the filling time per window to reduce labor. However, this only causes turbulent flow within the IGU and sends more expensive gas into the atmosphere. (See chart #1)

You should always follow the recommended gas filling procedures by your equipment manufacturer. Trying to "speed up" IGU manufacturing by reducing the gas fill time causes a greater loss of gas than needed and therefore decreases productivity. This is called "Shooting yourself in the foot losing" and it hurts.

Laminar Flow vs. Turbulent Flow

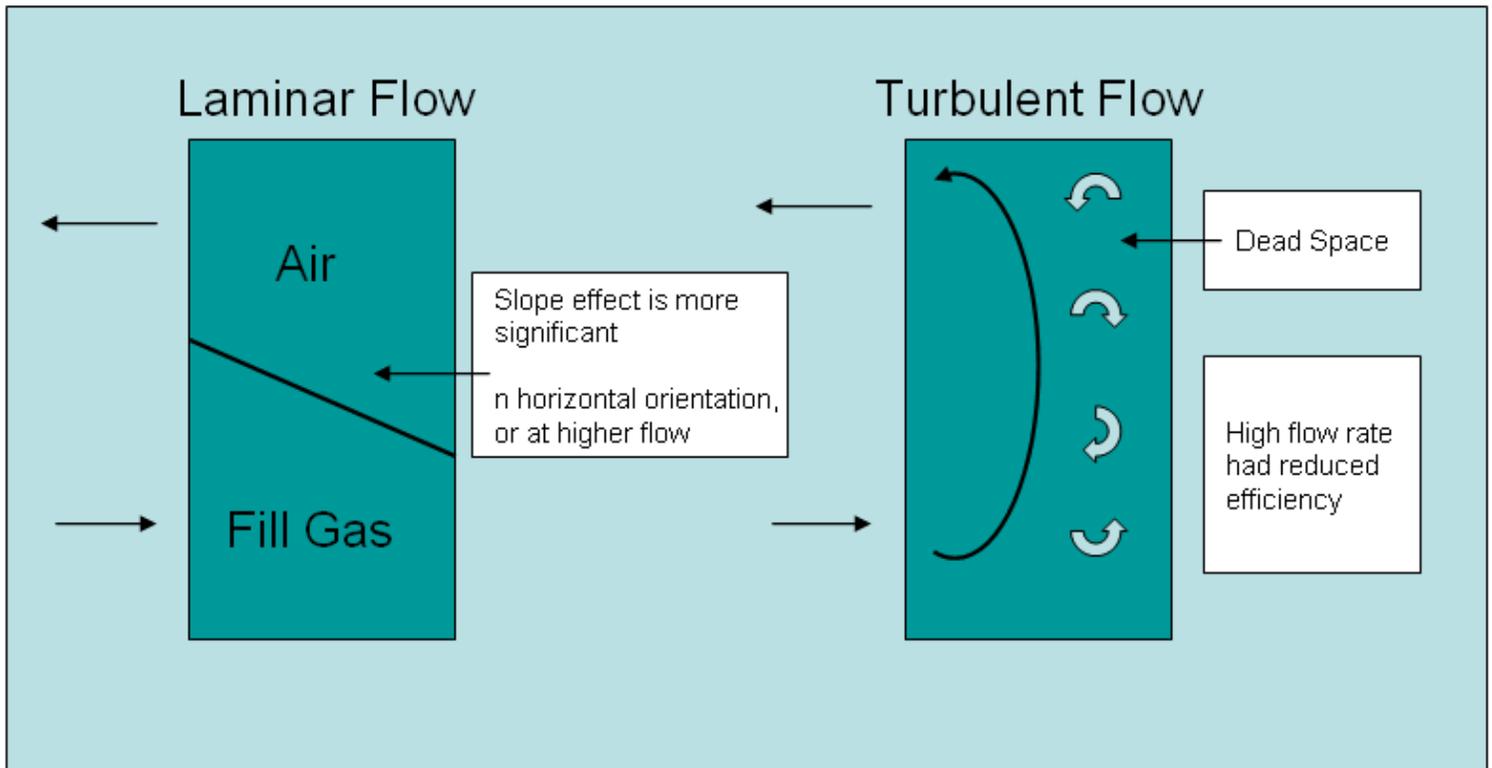


Chart #1

IGU GAS VOLUME FORMULA

The formula to determine the amount of gas, at one atmosphere, in each IGU is:

Length X Width X Inner Diameter X 0.01639 = Number of liters of gas at one atmosphere in each IGU

Let's take a sample IGU with the dimensions of:

Height: 24" X Width: 24" X Inner Dimension: 0.5"

Multiply 24" X 24" X 0.5" = 288 cubic inches

Then multiply by 0.01639 liters per cubic inch to obtain 4.72 liters of gas at one atmosphere (14.7 psig) in this size IGU.

In this sample size IGU during the normal filling process approximately 2 liters will be wasted and sent back into the atmosphere. By "speeding up" production this could increase to 4 to 5 liters due to turbulent flow. Each IGU manufacturer should strive for laminar flow during their IGU gas filling process to increase productivity.

CHECK AND BALANCE GAS AUDIT

I would highly recommend that every IGU manufacturer who has either a hand held gas filling system or especially an automatic IGU gas filling processing equipment to do a weekly or monthly check and balance audit of how many cubic feet of IGU gas chamber space they produce versus the quantity of gas purchased. This would tell them the percentage of productivity they are achieving with gas filling.

“PRIDE IN WORK EQUATES TO A QUALITY PRODUCT”

The most critical aspect of IGU gas filling is the person doing the filling. If this person forgets to close the gas cylinder valve when they go home at night or over the weekend, there is the possibility of gas leakage through a loose connection. Always close the gas cylinder off at the cylinder valve! Do not use the gas regulators as a replacement for a cylinder valve.

Gas regulators were never designed as cylinder valves. This could be called “Big Time Losing” and I usually get telephone calls on a Monday morning asking me to rush out a cylinder of gas because of a “slight” oversight in the plant. Sorry to say but this does happen. Also, the IGU gas filler must always take proper care of the gas filling equipment. Too many times I have seen sensitive gas filling nozzles thrown on the floor and stepped on causing unnecessary damage.

In addition I have often heard the lunch bell ring and see the person doing the IGU gas filling leave a partially gas filled IGU to go on break. Of course the gas escapes from the window when this happens. Pride in work equates to a quality product!

GAS RECOVERY SYSTEMS

New technology is now here to help the larger IGU manufacturers from losing expensive krypton gas. Gas recovery systems used in the lighting and detector industries for decades has reached the fenestration industry in the form of the R-20 Krypton Gas Recovery System. The R-20 is designed to interface with Fill/Purge hand held gas filling systems gas, and helps IGU manufacturers to improve gas utilization efficiency through recycling. A 15 to 20% annual krypton gas recovery rate can be achieved by following proper recovery procedures. This is called “Winning” not “Losing”.

R-20 GAS RECOVERY SYSTEM



SUMMARY

There are many ways to lose in an IGU manufacturing facility. You can lose material through complacency and this will lead to losing at the bottom line which leads to losing your patience. All this losing is not good. One can grow a "sunroof" over night! Seek ways to avoid losses. What was done in the past and overlooked because of inexpensive material costs should be reviewed on a regular basis to achieve maximum profit returns.