

July 2008

Alberta News

# GREENHOUSE TIPS

Combat the high cost of heating.

Infiltration Series



Poly/Wire lock In the gutter present significant leakage areas.

## ENERGY CONSERVATION SERIES - LOCK IN THE GUTTERS

Seal the costly effects of infiltration and create a high thermal barrier.

Back in the early 1990's when we started constructing greenhouse projects in Alberta, we took extra effort to provide our clients with an active energy conservation program. What the heck you say !!!!!

Well even back then we took the extra effort and time to apply a bead of caulking onto the base of the wire lock or polylock before securing to the gutter.

Cheap , easy to do, sure it takes a bit of time. But folks it only costs about \$70.00 to by a case of the best elastomeric caulk.

And that case when applied with a little care can easily do an acre of gutter connected structures. Why do we bother ?

Having serviced greenhouse equipment, structures over the years. You would be amazed in how many places after a couple years the lock yields off the gutter and creates a gap. Yes folks, enough to slide a business card through. In the case of gutter connected houses you can be talking a lot of lineal feet of a small 1/64 to 1/32" gap. Even though the gap is small just due the virtue of the total footage

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**Energy Conservation**

Should be your first step in reducing your energy operation costs.

involved it amounts up. The greenhouses that rely on cheezy SDST screws instead of bolts and nuts to hold the lock onto the gutter are even worse. This is because as the screw drills through the lock, it dimples the lock, which allows the lock to sit off the gutter even at the connection point.

Some growers tell us that they are not concerned. "Helps melt the snow we are told. !" We suppose it does, but how about all the other times when the greenhouse is under operation and the snow is completely melted ? Well, you are paying to heat for those losses. It is just as simple as that. The \$70.00 for the caulking and a few minutes to apply before the lock is placed on is chicken feed compared to the increase energy expenses it imposes year after year after year.

Again if you refer to that pesky little illustration to the right that we keep repeating time and time again shows that

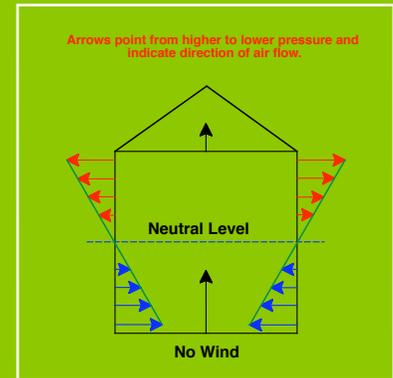
at high level ( ie the gutter line is getting up there ) exfiltration rates get higher. Well if you have a lot of high level cracks, all that occurs is the neutral plan level is elevated from the approximate mid point and now all those small low level cracks just leak more and more. After all, what goes in must come out.

An extra side benefit when caulking is provided under the base of the lock is less water / rain leakage. In those heavy rain events, particularly where gutters are set with shallow slope and long, leakage into the structure is drastically reduced.

To recap.

It's not all about insulation, fancy costly high efficiency equipment. Combating infiltration should be a major concern and it can be drastically altered with simple things such as a tube of chalking.

# INFILTRATION



Is the uncontrolled flow of air through openings in the building envelope driven by pressure differences across the shell. Infiltration is balanced by an equal amount of exfiltration. Uncontrolled/excessive infiltration will contribute greatly to your heating costs.

## TiD bit of Information

Bedding plant growers/tomato growers etc. etc. think they have it rough. How about the tree seedling silver culture growers ? Most located way up in Northern Alberta. Start their crops in January. Lots of -40 deg. F or C conditions and they are busy germinating crop. And quite successfully we must say. They indeed face challenges that most can only dream about. Even in the early 1990's they took their structure operational costs seriously.

## A Leaky Structure

Can easily cause 1/2 of your heating bill be comprised of heating air that enters at low level and exits at high level.

It is time to tighten up things and take control.

