How do we achieve our hazardous location classification?

We strive hard to ensure that our hazardous location and or explosion proof vacuum systems are constructed to meet or exceed the current codes set forth by the NFPA. We achieve this by utilizing certified pressurization or purge panel integration. These units come in three different configurations depending on the classification requirements.

- Type X - Used in Class I or II, Division 1, Groups A, B, C, D, E, F & G. These units must disconnect power from the machine upon protective pressure loss.
- Type Y - Used in Class II Division 2, Groups E, F & G. These units must be equipped with an alarm indicating protective pressure loss. Power does not have to be disconnected.
- Type Y purges are typically found in combustible dusts environments.
- Type Z - Used in Class I, Division 2, Groups A, B, C & D

We also use intrinsically safe barriers and isolators in conjunction with locating oven mechanics and heating sources in non hazardous locations. "Intrinsically safe" products receive their classification because their electrical power usage is below the level of power required to set off an explosion within a given hazardous area. In addition, "intrinsically safe'" products are incapable of storing large amounts of energy which might spark an explosion when discharged.

How do I know what hazardous location is right for me?

This is common question asked of us. Most of the time buyers or equipment procurers will know what classification is expected of them because they either have a building and or room rated for a specific Class, Division and Group. But sometimes that is not the case. One thing you have to understand is just because you have bought an explosion proof piece of equipment does not mean you can just put it anywhere in a factory and it is safe. These units are only as good as its surroundings. If the area is not rated at the same classification as the equipment then the equipment is de-rated as well.
The installation of this equipment is the sole responsibility of the end-user or buyer.
Let’s look at some of the more typical non classified installations and there potential ratings:

- Clean Rooms - Most likely not classified but could potentially carry a Class I, Div 2 rating
- Laboratories - Typically use a Class I, Div 2 rating but could be higher
- General Factory - Most likely unclassified

For instance you do not need to buy an explosion proof oven for an area that isn't rated for any Class or Division.

So what type of Oven do I need to be safe in a non-rated room? Well first lets ask ourselves, do you really need a vacuum oven, or did you think you needed a vacuum oven because it was rated explosion proof?

If the answer is yes, then what you really want is a Class “A” Safety Oven. These ovens are constructed for processing solvents and or flammables under normal pressure at elevated temperatures. There are many manufacturers of these ovens such as Blue M. Keep in mind when specifying these ovens that you know how much solvent or flammables you are putting in the oven. A good oven manufacturer will ask you and base the oven selection on the LEL (Lower Explosive Limit) of the material.

If you have a non-rated room and you need to process solvents and or flammables in a vacuum then a Class I, Div 2 rated oven works great. It gives you an element of safety similar to a Safety Oven but allows you to process more because you do not need to worry about LEL (Lower Explosive Limit) of the materials you are processing. This would be with Georgia Ovens Model STX or CNX.

Are there other design considerations for Hazardous Locations?

Yes there is! You should know that when specifying an oven for a classified area that it will be required by the oven manufacturer to know what type of materials or substances will be processed. The flammable materials auto ignition temperature regulates the maximum operating temperature of Georgia Ovens STX's heated surfaces. Once the auto ignition temperature is known, the oven will be assigned what is called a T-code or temperature rating. It is a system developed by the NEC & NFPA that indicates what the hottest surface could potentially reach. Once a T-Code has been assigned to the oven it will only be able to process solvents with the same or higher auto-ignition temperatures. However it is possible to adjust T-code ratings once the oven has been installed. This is typically done by a factory trained individual.