**Pureflex Process – Control Philosophy**

* Flammable process. A reaction takes place between diisocyanate and polyol liquids. The MDI is melted in steam heated ovens prior to charging into the vessel. Reaction is blanketed with nitrogen for the reaction to take place under atmospheric pressure. 1 agitator in the vessel. Reaction is temperature sensitive at 60-90˚C and reaction is exothermic regardless of moisture presence.
* Vessel is left clean for the next batch.
* Several liquids added and mixed, heat added as required:

1. Polyether Polyols
2. Stabiliser.
3. Monomeric diisocyanate MDI
4. Ethyl Acetate

* Any solvent vapour is refluxed in the condenser back to the reaction vessel.
* Temperature maintained as required. Testing for & NCO for the reaction progress. Viscosity also monitored.

1. Ethanol (95% Denatured Alcohol)/IPA
2. Ethyl Acetate (Vessel 1 wash/flush)
3. Ethyl Acetate (Vessel 1 + line wash/flush)

* Testing for & NCO for the reaction progress. Viscosity also monitored.
* Apply cooling to the vessel by central coil to <40˚C using chilled water from the chillers.
* Pack down into various packaging, IBC’s, Metal drums, tins etc.
* Take the solvent from the last clean down and used for an ambient temperature wash of the vessel. This cleaning solvent is then packed down into drums and is used to dilute the next batch of material.
* Clean Ethyl Acetate added to the vessel from the bulk tank and heat until boiling to reflux the vapour to clean the vessel thoroughly.
* The vessel is cooled down and packed into drums and goes into the next batch as the start.