Understanding Single-Point Variables - continued

Poor Material Feed to Proportioner

Cold Chemical: Probably the most common issue causing poor material feed is the material in the drums/totes/tanks is too cold. For spray foam materials viscosity increases as material temperature decreases. As viscosity increases it becomes more difficult to pump. If the feed pump is undersized or not designed to handle viscous materials it may struggle to adequately feed the proportioner with the necessary volume of material to stay on-ratio.

This issue can be resolved by properly conditioning the chemical(s) prior to use or using a feed pump properly designed to pump more viscous materials. This issue is common in colder climates where the material temperature can fall below the recommended storage and pumping temperature. For common spray foam materials, viscosity increases exponentially as temperature decreases. Figure 7 shows how cold temperatures increase material viscosity.

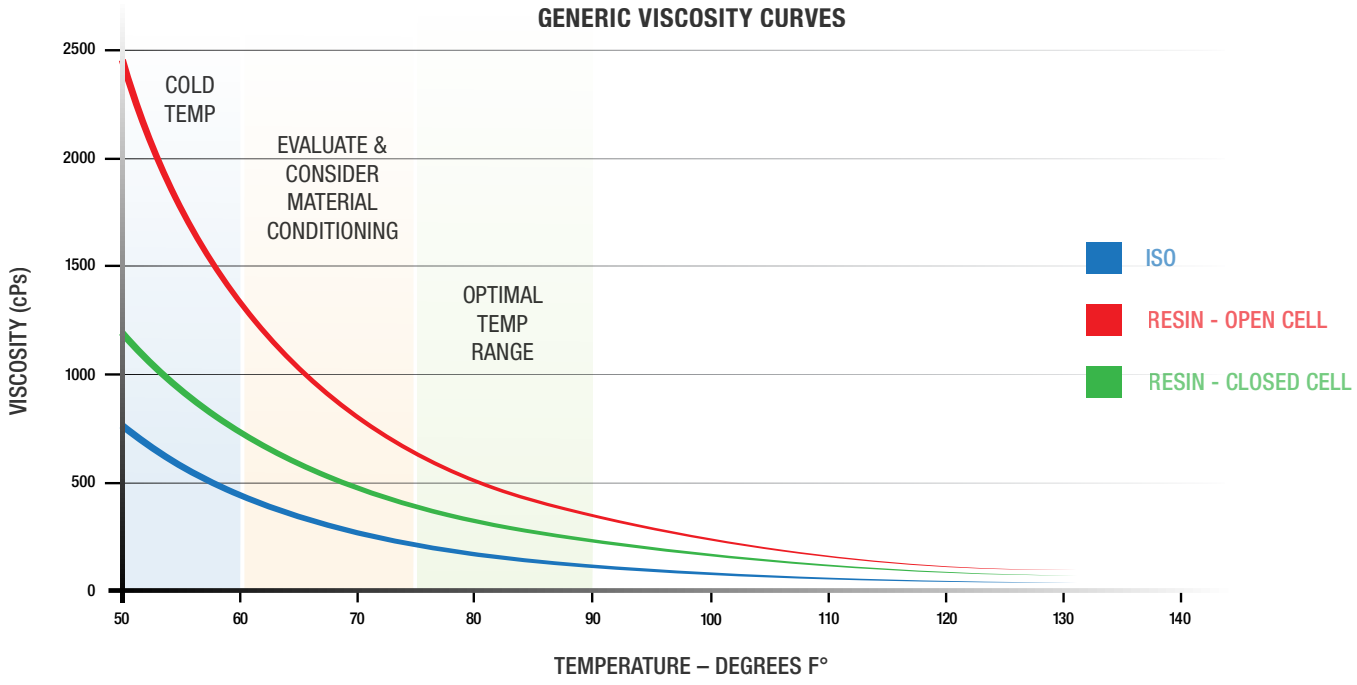

Figure 7: *Graph shows how viscosities are affected by temperature. At temperatures less than room temperature the viscosities quickly increase which may cause feed pump issues. The graph is a generic representation of spray foam chemicals. Viscosities of actual materials used should be verified with the chemical manufacturer.*