



Cycletime Tips - Automotive

Volume 31: Desiccant Bed Dryer Maintenance

It's that time of year again. The humidity is rising and your hygroscopic materials will begin to do their thing - absorbing moisture from the humid atmosphere. While maintaining your drying equipment is a year around activity, it becomes especially critical in the summer months here in the Midwest. This month's tech tip briefly lists some items to monitor on those pieces of equipment.

1. **Dewpoint** - This is the "catch-all" dryer quality measurement. We are checking the amount of moisture in the air being supplied to the resin pellets. It is also very simple to check and maintain. Simply implement a schedule for periodic monitoring of the air and hookup a dewpoint meter at the inlet of the dryer. This non-invasive procedure can be done as the equipment is being utilized and requires little downtime (unless something is discovered to be defective). Typically, we try to achieve a -40°F dewpoint value for all desiccant beds. These beds aren't inexpensive, so don't replace them until you're certain that the entire dryer is functioning the way it should.
2. **Filters** - One of the primary ratings for a blower within a dryer is the amount of CFM that can be delivered to the material. This is sized depending upon the throughput of the material in the dryer hopper. If the filters are clogged with fines from the material, it can inhibit the amount of air being circulated through the hopper. If running regrind, these filters will need to be cleaned more often (daily).
3. **Regeneration Heaters** - As the desiccant beds become saturated in a multiple bed system, the dryer PLC rotates them and the idled bed gets regenerated. During this portion of the process, this bed gets heated in excess of 400°F and the water contained within this absorbent media is driven-off. If the heaters have failed, then your dewpoint will begin to rise. Monitoring the regenerated exhaust air temperature long-term will give you an indication of their effectiveness.

Other key items include measurement of the delivery air temperature at the hopper inlet, insulating the delivery air hose from the dryer unit, as well as making sure the hopper on the machine isn't too large. If the dryer hopper isn't mounted on the machine, we can expose the raw material to moisture again if it is exposed to the humid atmosphere. Don't forget to dry that colorant also, as the carrier is often times hygroscopic as well.

Please feel free to contact me, should you require further information.

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