THE INSIDE LINE: 2010/12/10 - Special Edition - Lane Conditions and Cold Snaps

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In last month's article, we touched base on some of the effects weather can have on lane machines, lane conditioner, and ball motion. We wrote about these effects in the sense that the environment has already become more stable. But because of a few recent technical calls, we have decided to release a Special Edition of THE INSIDE LINE, and continue the discussion on how weather can affect lane conditions.

We have found that the biggest problem in a bowling center occurs when there is a drastic and quick temperature change. Kegel's lead chemist, Dennis Sheirs, found this out during the US Open in 1998. The air conditioner wasn't working in the bowling center, and it was 80 degrees inside the center, and on the lanes, for the first two days of the tournament.

Sometime in the middle of the afternoon on the second day of the tournament, the air conditioning was fixed. That evening, someone cranked the air conditioning down and by the next day, both the bowling center and the lane temperature were 60 degrees.

The bowlers started practice that morning and found the lane pattern played 10 boards tighter. Luckily, since Kegel was doing the lanes and strictly following our Process Verification Procedure, we could prove it wasn't because the laneman, or the lane machine, did something different. But we did learn a valuable lesson; when doing lanes, take control of the climate control system!

So how does this affect you in daily life? We find the same thing can happen when you typically get a cold snap up north and it's instant. Normally you will see everything get a little tighter at first. Then as everything goes through equilibrium, and bowling centers kick on the heat, all the other properties change, and eventually everything will settle back in. That's when the lanes will start to hook more from the point where they got tighter at.

We said before that when the temperature of lane conditioner gets lower, the viscosity goes up, so the ball hooks more and it does, but that is only one part of the equation. The other part of the equation is the surface tension also increases, which makes the lane conditioner move more until everything settles back down. This unsettledness can last over a week because during a cold snap, the whole system is in flux.

On a synthetic lane, usually during the summer time when the humidity is typically greater, the lanes tend to be a bit more crowned. We know from our testing, crowned lanes tend to create "hang spots" if in the break point area.

But in the winter time when the heat is turned on in the bowling center, or humidity decreases, synthetic lanes tend to depress which makes the ball move towards the center, or in other words, hook more. It however takes a little time for all that to occur.

If your area gradually gets colder throughout the year, you won't experience drastic changes because everything is just slowly moving there. It is those abrupt environmental changes that create these effects. But from our experience, in most scenarios, those quick "cold snaps" (change from warm to cold), tend to make lanes play tighter first. Then, as the inside environment equalizes and the heater settles things down, lanes depress; that's when we see more hook again from that September to October time frame.

Wood lanes however tend to stay more stable versus synthetic lanes because synthetics panels are made from composite materials. The phenolic panels are made from wood paper pulp, with phenolic resin, so they do tend to vary. But just like all wood components, when there is more moisture in the air, they tend to swell a little bit, and when there is less moisture in the air, they tend to dry out and lose some of that swelling.

So as we stated before, typically in the summertime, synthetic lanes tend to crown a little bit, and in the winter time, they tend to depress a little bit. In recent topography measuring using the Kegel LaneMapper, we have documented examples of synthetic lanes changing over .030" from summer to winter.

So what do we suggest for quick weather changes? Don't respond to the change too fast. Give everything a chance to settle down. Most of the time our first response is something went haywire, and we have to change something, it's human nature. But you are better off to first perform your Process Verification Procedures, to ensure your machine is operating correctly, and if so, just let everything settle down.

If it has been 80 degrees for weeks on end, and that first cold snap hits and it's a drastic one, give it a week for everything to settle down and let your center get into equilibrium before trying to change or adjust things. Otherwise, you're going to be trying to change something while everything is transitioning.

A non-bowling analogy to the transition is like when you get into a pool for the first time. The water may feel cold, and that could be your first reaction. But if you stay in for a little while, you start to adjust to the temperature. Your core body temperature does not change; you just begin to acclimate to it.

To end, and we can't stress enough, every center is unique and the solutions to any problems are just as unique. Just know that Kegel's Tech Support department is full of dedicated people trying to do the same thing you are; provide our customers with the best possible experience as we can. And don't forget, we are only a free phone call away.