Big River Steel’s Water Model for Casting Video Transcript

This is a mold water model. And what that means – we’re using water to model what’s going on in the flow of the steel process. Obviously, we can’t use molten steel. You can’t see molten steel in the mold because it’s, you know, it’s a contained process. This allows us to see the flow of water and how steel will flow with certain SEN designs, certain widths, and thicknesses that we cast.

Water has the same viscosity as liquid steel when its 2800 degrees. So that allows us to simulate the flow of steel with water.

It allows us to be able to see if we have the right flow, if we’re running the right submerged entry nozzle which can give us different flow patterns in the mold. But we can also see the flow of steel at different casting speeds, different widths, and so on.

Instead of taking a design from a SEN supplier, this allows us to put it on this first. We can actually see if it changes our flow patterns to the properties that we’re looking for. Rather than set one up in the casting machine and actually run a trial and not knowing until after the fact if it’s good or bad. This allows us to put it on this water model first to give us a real good idea if it’s going to be what we’re looking for.

We can slow the mold down, we can slow it down, we can speed it up to see what our flow is going to do, how it’s going to mess with our turning points. There’s a lot that we can see by just this.

So, this process will continue, you know, it’s not just start up, get it going, five years, ten years. Because we are going to continually develop new processes in order to get what our customers need.