

ABB LASER LEVEL MEASUREMENT APPLICATION



Solving the Problem of Vessel Build-up using the LLT100

Overview

Vessel build-up often creates reliability issues for non-contact level measurement. Laser level measurement provides an efficient way to overcome this problem.



Build-up on vessel walls and constant profile changes are real challenges for most non-contact level measurement technologies. These changes in the vessel change the way beams emitted by the instruments are detected. This often requires another mapping of the vessel, which is time consuming and costly.

ABB laser level measurement products are immune to this problem. Their laser beam is so narrow that it does not interfere with vessel walls. Whatever build-up or vessel changes occur, they do not interfere with the laser, which is pointing at the surface to measure. This greatly increases reliability and minimises operator intervention.

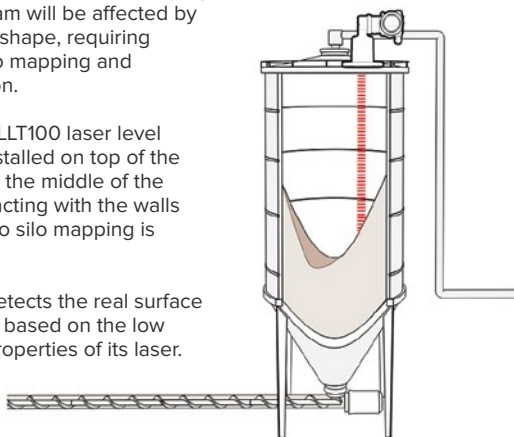
Dealing with Build-up for Solids

A wood chip silo provides a typical example of this problem. The wood chips stick to the walls and the build-up always changes shape.

Any measurement technique relying on a wide beam will be affected by the changing shape, requiring constant echo mapping and reconfiguration.

In contrast, a LLT100 laser level transmitter installed on top of the silo will aim in the middle of the silo, not interacting with the walls or build-up. No silo mapping is required.

The LLT100 detects the real surface automatically, based on the low divergence properties of its laser.



Dealing with Build-up for Liquids

Another typical condition where build-up is a problem is found in stilling wells. When the liquid inside is dirty or sticky, it can accumulate on the well sides and form a solid residue.

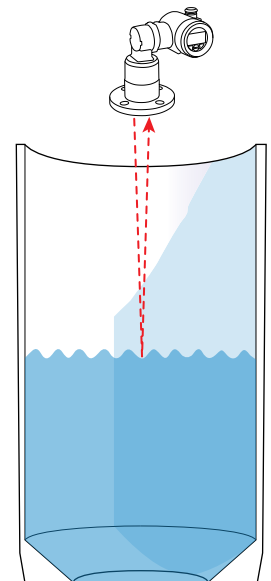
For instance, in a waste water surge tank application, the build-up was severe and interfered with all previous measurement techniques.

Contact measurements required the well to be cleaned on a weekly basis. Traditional non-contact techniques would not work because they would latch on the build-up almost immediately.

Laser level provided a significant reduction in maintenance since it works to the point where the well is completely filled up by residues. The time between cleaning periods went from every week to every six weeks: a significant reduction in cost and time.

These are only two examples, but such situations are quite common in industrial applications. Humid or sticky bulk solids often create vessel build-ups. Many liquids can also create accumulations of materials on vessel sides. Slurries and sludge also do the same.

Laser levels provide users with another way to perform non-contact level measurement. As we have seen, in many cases it leads to significant cost reductions. It makes measurement easy.



Conclusion

Vessel build-ups and constant profile changes occurring within silo walls constitute an issue for many level measurement technologies.



ABB lasers read silo levels without being affected by these factors, providing inventory measurement or process control without adjustment or maintenance.

