Inline Viscosity Measurement of Asphalt Polymer Blends

Temperature and viscosity are two very critical and closely monitored parameters of polymer blended bitumen for the production of Hot Mix Asphalt (HMA). Delivering real time results is an essential step in maximizing efficiency.

Quality control in the laboratory and in the production process

The viscosity or consistency of asphalt varies with temperature and asphalt is graded based on ranges of viscosity at a standard temperature. A standardized viscosity test is commonly specified to measure paving asphalt consistency. AASHTO T316 and ASTM D4402 are the industry standard laboratory methods used to measure the rotational viscosity of asphalt binders. The ability to measure and monitor these same properties in production and to correlate the values to the above laboratory references leads to considerable time savings for asphalt binder producers. Without the capability to measure the inline viscosity of the polymer blend, the producer is forced to wait until the laboratory results are final before releasing the tank truck or rail car for delivery. This resulting time loss could potentially be detrimental to the quality of the end product upon delivery.

Additionally, many production facilities have the ability to blend many different asphalt binders and there is the risk of transferring the wrong blend to a transport vehicle. An inline viscosity measurement is a simple and very cost effective way to eliminate this risk.

L-Vis 510 Inline Viscometer

It's clear there is a great benefit to having a fast and consistent real time process viscosity measurement. The L-Vis 510 Inline Viscometer is the complete solution. With numerous integration possibilities the L-Vis 510 is immersed directly into the process liquid and provides 24 hour monitoring of viscosity and temperature values that can be correlated to the laboratory reference values. Data exported to the production control can be utilized to maintain the product within the defined specifications.

The L-Vis 510 is especially suited for extreme process environments. The robust design uses a new measuring principle based on the measurement of dynamic fluid pressure, which is directly proportional to the liquid's viscosity and is not influenced by drops in flow or pressure and can measure a liquid's viscosity with a process temperature range of -5 C to +200 C.

L-Vis 510 Specifications

Viscosity range: 1 to 50,000 mPa.s
Accuracy: 1 %
Process conditions:
- Temperature: -5 to 200 °C
- Pressure: 0 to 25 bar
- Wetted Parts: Stainless steel, diamond-coated SIC seal, Viton O-ring seal
- Degree of protection: IP 65

Do you have any questions?

Contact Anton Paar directly:
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