AKO Pinch Valves Control Cement Flow

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The secrets of the sleeve surprisingly are also in the elliptical body shape of the AKO Pinch Valve. The body shape ensures the sleeve folds in the same place every time it closes, this results in a better mechanical memory ensuring longer life. This feature is unique to the AKO Pinch Valve meaning longer life than the pinch valve competition as well as very importantly having up to 40% less air consumption when in operation. Saving 40% on air consumption with a valve that is operating every 10 seconds on a 24 hour shift is a huge power saving to every manufacturer.

At the Hope Valley cement works, in the mill house, where clinker is milled into the cement, at normal temperatures up to 120c, the elevators transport the finished cement at rates up to 200 tonnes/hour. Entrained in the cement are small numbers of nibs milling medium (17mm manganese balls). These are removed at the head of the elevator, where the cement enters a centrifugal separator, via a nib trap, where the nibs are extracted from the cement flow. The collected nibs are conveyed through an air slide incorporating an AKO pinch valve. The discharge side of the pinch valve empties onto a vibrating screen, where any stray cement is filtered back into the elevator via a second chute. The used nibs are then dumped.

Two 600hp cement mills together use four elevators, fitted with 200mm dia pinch valves, at normal combined production rates of 200 tonnes/hour.

The 120c line temperature far exceeds the normal maximum to which the rubber sleeves of the pinch valves are rated. Because of this, the Blue Circle maintenance engineers routinely replace the sleeves at intervals of about 18 months. Any inadvertent extra increase in cement temperature could have a baking effect on the rubber – thereby shortening its life.

Pinch valves are used in this type of application because of their utter simplicity and reliability, There are no knives, gates, balls or bearings to clog with sand. In this hostile environment most valves, regardless of type, will need frequent refurbishment – and AKO pinch valves offer greatly reduced costs in this respect, since a new rubber sleeve is dramatically-less expensive than a reground butterfly seal, gate seat or knife blade. In addition most AKO valves are a bore so there are no intrusive elements into the flow of sand. Sand transfer & mixing can therefore be carried out on a more-consistent basis.

Elsewhere in the plant, other AKO valves are also used. The 500 tonne storage and discharge silo loads outgoing cement into rail wagon though an AKO valve.

With proven reliability in the industry for over 23 years many engineers, OEMS and manufacturers are now realising not only does the AKO Pinch Valve offer the best and most reliable solution for conveying difficult products, it can also compete and beat ‘traditional’ valves on price.