

Bitumen Kettle Guidance

MPA WG7

Purpose:

These guidelines provide best practice for overspill protection for bitumen kettles on asphalt plants.

A suitable and sufficient risk assessment shall be completed on these areas of plant to determine the full extent of protection and frequency of maintenance intervention required.

Scope:

The procedure covers the basic layers of protection required for the safe operation of bitumen kettles on an asphalt plant in order to reduce the risk of overfill of the bitumen kettle and consequent uncontrolled loss of containment

Bitumen Kettles:

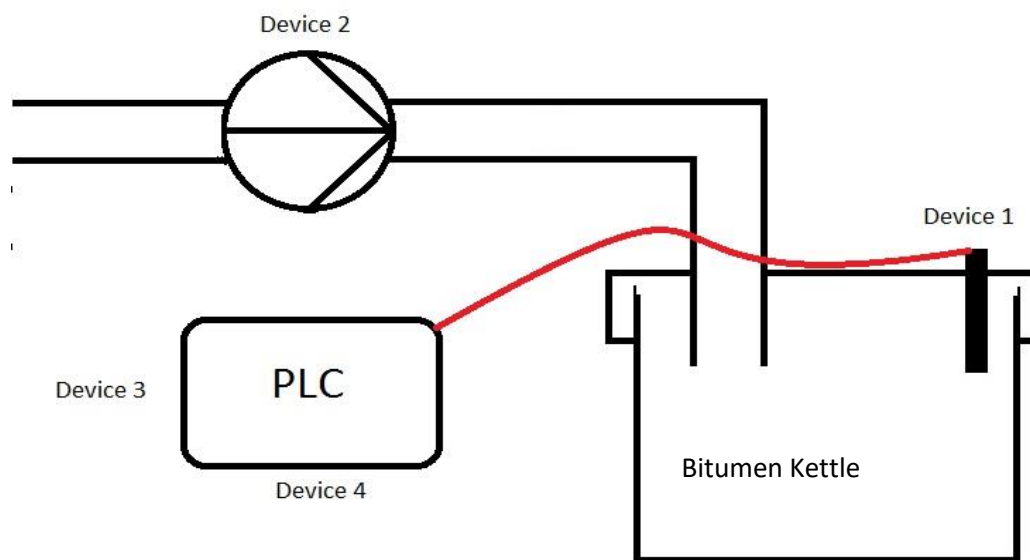
A Bitumen kettle should have a minimum of four of the below safety protocols:

Device 1: High Level Probe

Device 2: Pump timer cut out

Device 3: Maximum kettle capacity

Device 4: No flow/ weight gain.



Device 1 – High Level Probe:

The probe is installed in the top of the bitumen kettle, away from the bitumen fill point to reduce the risk of activation due to bitumen entering the kettle and splashing onto the probe. The probe positioning is determined by the safe working capacity of the kettle, taking into consideration the fill point. Note the probe activation should be set at 95% of the capacity of the bitumen kettle. The probe should be removable to allow inspection / checks and cleaning.

Device 2: Pump timer cut out –

A stand-alone timer which cuts out the pump, when the pump has ran the required time to fill the bitumen kettle. The run time needs to be calculated from the fill rate (pump speed) and the target tonnage into the kettle. This control is independent of the PLC and will have a standalone display.

Device 3: Maximum kettle capacity -

The Safe working Capacity of the bitumen Kettle can be calculated using the usable volume of the kettle x 90%. This volume (the safe working capacity) of the kettle should be programmed into the PLC such that when this volume is reached the flow of bitumen is automatically stopped. This system uses the bitumen inflights to measure the bitumen flow.

Device 4: No flow/ weight gain.

This feature is part of the PLC and involves a comparison of the inflight value (bitumen flow) compared to the actual weight gain in the kettle. Where the two figures are not balanced, the PLC will automatically shutdown the pump and stop the flow of bitumen.