

SAFETY ALERT

HiPo – BITUMEN PUMP GASKET FAILURE



DETAILS OF THE INCIDENT

A failure in the bitumen trace heating system on an Asphalt Plant resulted in the pipework cooling. After the trace heating was repaired the pipework was brought back to the operating temperature. The plant was then started successfully, mixing 6 tonnes without any problems; however, as the Manager passed by the bitumen system, he observed bitumen leaking beneath the pump cover box. He promptly notified the plant operator, leading to the shutdown of the equipment.

KEY FINDINGS

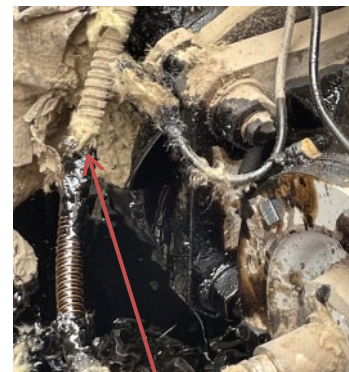
Pipework	The pipes connected to the pump were installed at an angle, which likely complicated the installation of the sealing gaskets during the pump's fitting. Additionally, the pump flange was square while the pipe flange was round, and a portion of the flange had been removed to accommodate the bolts on the side where the failure occurred.
Gasket	The gasket appeared to have been 'pinched' during installation, resulting in a vulnerable area that permitted the gasket to split.
Inspection & Maintenance	The piping and pump have been installed for several years without any problems or indications of malfunction
Air system	The cables and air pipes were raised, apart from one pipe positioned at ground level. This pipe ruptured when it became enveloped in bitumen, resulting in a spray of hot bitumen at an approximate temperature of 135-140 degrees being projected upwards.

HOW COULD THIS HAVE BEEN AVOIDED

- Assessing the existing condition of equipment, ensuring components are compatible, standardisation of equipment where practical, considering the consequences if a failure was to occur.

KEY REVIEW POINTS

- Review bitumen systems to determine if there are water or air pipes situated at ground level that may come into contact with bitumen in the event of a spillage from any section of the system.
- Is the bitumen pump adequately shielded to prevent the outward spraying of bitumen?
- Are all flanges enclosed to prevent bitumen spray in the event of a seal failure?
- Are relevant inspections in place for bitumen systems?
- Are there signs of leaking from pipework?
- It is essential to promptly address and repair any leaking bitumen pipework.



Failed gasket



A rupture in the air pipe caused bitumen to spray upward.



Look after yourself and each other

Don't let anyone act unsafely, always stop unsafe practices.

Tools and Equipment

Use the right, well maintained, tools/ equipment for the job. Never make do.

Safe Systems

Follow safe systems of work, site rules, signage and traffic signals.



STOP THINK ACT