



## SAFE HANDLING OF BITUMEN

	Paving grade bitumens (including polymer modified bitumens) are supplied and stored as hot liquids at temperatures between 150 and 200 °C.	Oxidised and hard grade bitumens are supplied and stored at temperatures up to 230 °C.
<b>PRINCIPAL HAZARDS</b>	<ul style="list-style-type: none"> <li>• Severe thermal burns (up to third degree). Shock.</li> <li>• Fire and explosion. If bitumen is over-heated flammable decomposition products may be formed resulting in a fire or explosion hazard.</li> <li>• Boil-over of tanks due to the presence of water.</li> </ul>	<ul style="list-style-type: none"> <li>• Fumes. Respiratory problems or nausea may be induced by high concentrations of fumes from hot bitumen.</li> <li>• Hydrogen Sulphide. In confined spaces hydrogen sulphide may accumulate and may reach hazardous levels.</li> <li>• Pyrophoric deposits may develop in bitumen tanks which may self-ignite.</li> </ul>
<b>SAFETY MEASURES</b>	<ul style="list-style-type: none"> <li>• Storage temperatures should not exceed 200 °C for paving grades and should not exceed 230 °C for oxidised grades or national limits whichever is the lower.</li> <li>• Head protection: helmet, neck apron</li> <li>• Visor to protect the face (goggles only protect eyes)</li> <li>• Heat-resistant gloves (with cuffs worn inside coverall sleeves)</li> <li>• Heat-resistant hoses free from twists, kinks, damage and supported along their length should be used. They should be clean dry and free from plugs of solid bitumen.</li> </ul>	<ul style="list-style-type: none"> <li>• Protective clothing should be worn, including: Safety boots, Coveralls (with legs worn over boots).</li> <li>• Do not use steam to empty pipelines or hoses to avoid water in the system. Use suction pumps or compressed air or blanket gas.</li> </ul>
<b>FIRST AID</b>	<ul style="list-style-type: none"> <li>• Burns from hot bitumen: Remove heat by treating the affected part with cold running water:  <ul style="list-style-type: none"> <li>treat eyes for at least 5 minutes</li> <li>treat skin for at least 10 minutes</li> </ul>                     After cooling, no attempt should be made to remove bitumen adhering to the skin since it forms a sterile protective layer on the burnt area. Usually the bitumen layer detaches itself after a few days.                 </li> </ul>	<ul style="list-style-type: none"> <li>• If for any reason the bitumen must be removed, this can be done using a slightly warmed medicinal liquid paraffin.</li> <li>• Seek medical assistance or hospitalization in all cases of serious burns.</li> <li>• Respiratory problems due to excess fume exposure: Under safe conditions remove person from contaminated atmosphere into fresh air. Seek medical assistance if breathing remains difficult. Apply emergency first aid measures.</li> </ul>
<b>BITUMEN FIRE</b>	<ul style="list-style-type: none"> <li>• Call the fire brigade immediately.</li> <li>• Switch off all electrical power to heaters, circulation pumps, etc.</li> <li>• Close valves [if safe to do so] in order to limit the spread of fire.</li> </ul>	<ul style="list-style-type: none"> <li>• Attempt to extinguish fire by using dry chemical powder, foam, inert gas, or water spray (fog).</li> <li>• Never use waterjets.</li> </ul>