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Influence and Interaction of Temperature, H2S and pH on Concrete Sewer Pipe Corrosion

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Abstract : Concrete sewer pipes are known to suffer from a process of hydrogen sulfide gas induced sulfuric acid corrosion. This leads to premature pipe degradation, performance failure and collapses which in turn may lead to property and health damage. The above work reports on a field study undertaken in working sewer manholes where the parameters of effluent temperature and pH as well as ambient temperature and concentration of hydrogen sulfide were continuously measured over a period of two months. Early results suggest that effluent pH has no direct effect on hydrogen sulfide build up; on average the effluent temperature is 3.5°C greater than the ambient temperature inside the manhole and also it was observed that hydrogen sulfate concentration increases with increasing temperature.

Keywords : concrete corrosion, hydrogen sulfide gas, temperature, sewer pipe
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