



Oxiduct®

Prevention of odour nuisance and corrosion in sewers

Hydrogen sulphide, which forms in sewer systems, not only smells bad, but also presents the operators of these sewer systems with serious problems. These include:

- Sulphuric acid corrosion which damages both the sewer system and the wastewater treatment plant (Fig. 1)
- Toxic sewer air which is hazardous to maintenance personnel
- Increased growth of filamentous bacteria which disrupt the wastewater treatment operation

This results from putrefaction in the wastewater, which starts as soon as the dissolved oxygen is used up. When there is no oxygen, sulphate is converted into hydrogen sulphide.

Putrefaction is particularly prevalent in long pressure sewers. Since the wastewater in these sewers is sealed off from the outside environment, it cannot absorb any additional oxygen from the sewer air. In the connecting gravity sewer or in the screening building of a wastewater treatment plant, hydrogen sulphide is easily released under turbulent conditions. It becomes enriched in the sewer air or screening building and then exerts its deleterious effects.

The number of long pressure sewers will continue to grow due to the increasing consolidation of wastewater treatment operations. This means that effective measures to prevent hydrogen sulphide formation will also become increasingly important.

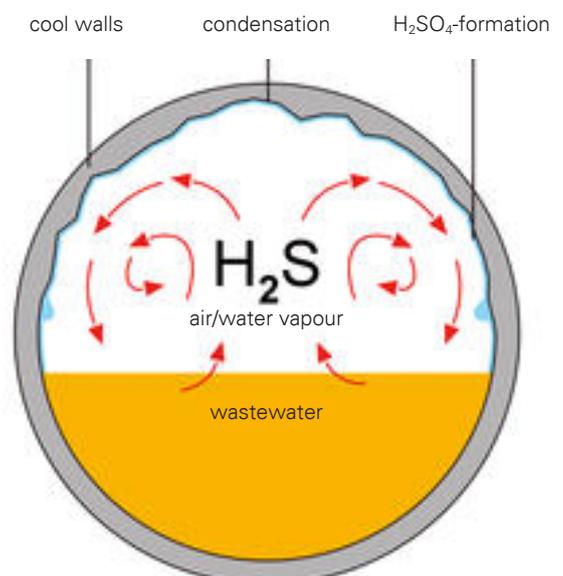
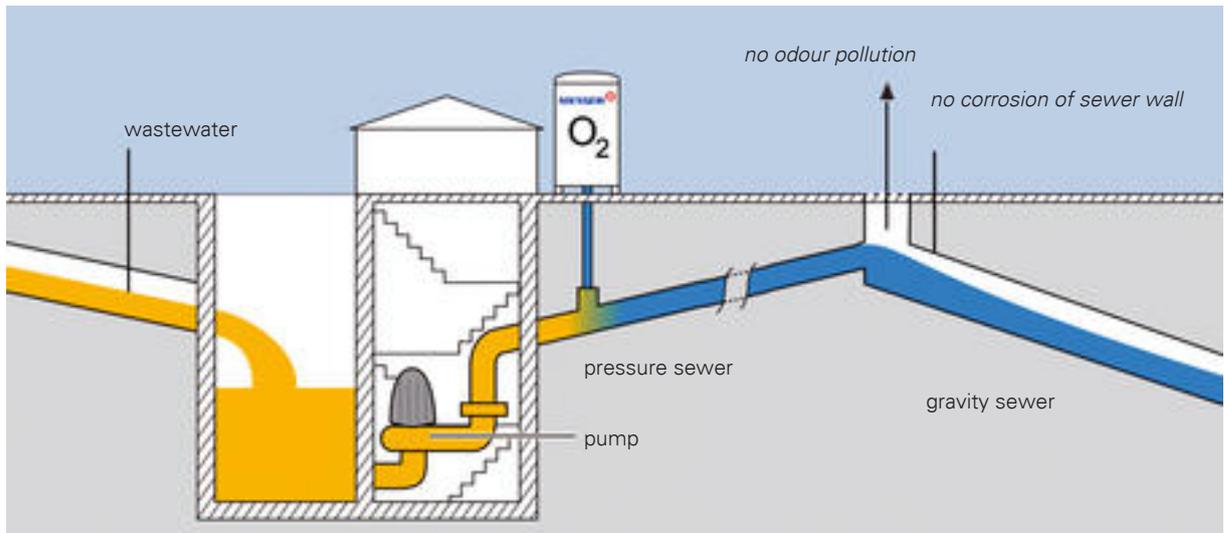


Fig. 1: Formation of sulphuric acid on the inner wall of a gravity sewer



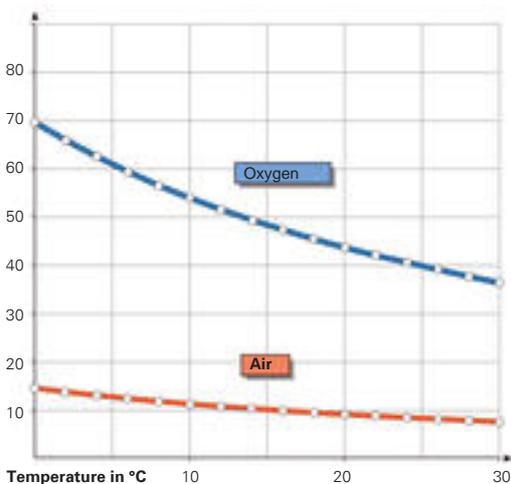
Adequate oxygen supply to a pressure sewer

Oxiduct®: cost-effective and tried and tested

There are many methods of combating hydrogen sulphide formation in sewers, ranging from compressed air injection and compressed air purging to the addition of chemicals and deodorisation. However, these measures are either very expensive or only provide a partial solution to the problem.

The Oxiduct® process from Messer is different: as well as being cost-effective, it has been tried and tested in practice over many years. Instead of compressed air, pure oxygen is injected into the sewer as required. Oxiduct® thus ensures that there is an adequate oxygen supply in the pressure sewer, which in turn suppresses anaerobic putrefaction.

Oxygen saturation concentration [mg/l]



Solubility of pure oxygen at 1013 mbar

Oxygen – the superior alternative

Since pure oxygen is 5 times more soluble than atmospheric oxygen, it dissolves more quickly in water.

Pure oxygen does not contain any nitrogen ballast. As a result, the wastewater receives a greater oxygen supply than with normal air. The formation of organic sulphides and mercaptans is also prevented by oxygen. It is therefore more effective than iron salts, yet doesn't leave any deposits. Another impressive feature of oxygen is that it is more cost-effective and fast-acting compared with hydrogen peroxide or nitrate.

Your advantages at a glance:

- Prevents formation of hydrogen sulphide and odours
- Prevents sulphuric acid corrosion
- No water-polluting chemicals
- Effective and economical
- Tried-and-tested technology

If you have any questions regarding the Oxiduct® process or would like an individual consultation with our application experts, please do not hesitate to contact us.

You can also download this brochure and many others in PDF format from our website at: www.messergroup.com



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