

## Shell Bitumen

# Odour reduced by newly launched bitumen

Shell Bitumen has developed a way of minimising odour from bitumen manufacturing and asphalt laying operations – removing a nuisance for neighbours and improving working conditions for operatives and staff.

In most circumstances storage and handling of bitumen does not lead to issues with the odour of fumes. However, during storage and handling of bitumen at high temperatures, small quantities of fumes are generated, which are responsible for the typical odour of bitumen.

Complaints from local residents about odours from one asphalt plant have all but ceased after the plant's owners began using a new type of bitumen. Known as Shell Bitumen Fresh, the binder contains a liquid additive, Shell Bitufresh, designed to reduce – rather than mask – odour.

Use of the binder at one CEMEX asphalt plant this summer was the first time binders containing the Shell Bitufresh additive had been specified in the UK.

“Some people find the smell of bitumen a nuisance,” says Shell Bitumen’s Technical Services Manager Lee O’Nions. “With the Shell Bitumen Fresh portfolio, we have

**“As a result of the recent trials, the bitumen used to produce asphalt at this facility in the North West now contains the Bitufresh ingredient.”**

Dean Welburn, CEMEX

developed a range of low odour binders containing low doses of Shell Bitufresh, which effectively neutralise bitumen fume odours.”

Only a very small quantity of Shell Bitufresh is needed to neutralise the odour from the binder, as it is effective at low dosage levels due to a good balance of neutralising components. As a result, the bitumen’s characteristics remain unchanged.

Efforts to reduce bitumen fume odour have had limited success in the past. According to O’Nions, some companies tried adding chemicals scented with the smell of fruits, such as cherry. But this would only mask the odour with a second, often overpowering scent. Sometimes this would lead to further complaints from local people who did not like the smell of the scent used.

Shell Bitufresh works differently. The additive reacts in situ at a molecular level with key molecules identified as the source of bad smell – neutralising the odours. It does not mask the odour like other products.

Shell Bitufresh has been evaluated by an independent laboratory (SIA in Australia). For bitumen from three different sources it was demonstrated that odours could be reduced by 95-99% by using the additive. The product has also been successfully piloted throughout mainland Europe.

Various people were invited to test the effectiveness of the low odour Shell Bitumen Fresh binder. These included environmental health officers and Shell employees such as Lee O’Nions.

Asphalt produced using the new bitumen binder was laid by CEMEX on three sites local to the plant to verify the effectiveness of the low odour material.

CEMEX Asphalt Director Dean Welburn

Shell Bitufresh works at a molecular level to neutralise rather than mask unpleasant odour





Use of asphalt mixed and laid containing the Shell Bitumen Fresh binder has been found to produce less bitumen fume odours for neighbours and operatives

says: “We have been pleasantly surprised that the new binder does not smell during mixing or laying of asphalt material. As a result of the recent trials, the bitumen used to produce asphalt at this facility in the North West now contains the Shell Bitufresh ingredient.”

O’Nions says: “This product could represent the difference between accepting

or rejecting a proposal to build a new asphalt plant. Companies have been refused permission on the grounds of smell in the past. It would be frustrating if that were to happen to a client who had already met traffic and noise regulations.”

He adds that the neutralising agent may even prove to be effective in allaying concerns over the odour of laying asphalt on

a road. The effect of Shell Bitufresh is designed to last until after a road has been compacted and could be useful in reducing complaints when asphalt is delivered to a heavily populated area.

**email:** [info@modernasphalts.com](mailto:info@modernasphalts.com)

[emma.mallinson@shell.com](mailto:emma.mallinson@shell.com)

## REDUCING ODOUR AROUND THE WORLD

**F**urther demonstrations of bitumen binders containing the Shell Bitufresh additive have been carried out in Australia and New Zealand. One trial, carried out in a laboratory run by the ‘odour management’ company SIA (Sustainable Infrastructure Australia), found that the Bitufresh additive reduced odour particles in bitumen material by between 95 and 99%.

Shell Bitumen UK is now looking to promote its Shell Bitumen Fresh portfolio of binders within the UK.

Trials are also planned to assess the effectiveness of Shell Bitufresh in neutralising bitumen fume odours during the production of mastic asphalt used for roofing, flooring and paving applications.



Demonstration of Shell BituFresh has been carried out in Europe and Australasia