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CHEWING GUM LITTER

Discarded chewing gum sticks firmly to pavements. It does not degrade over time and is difficult to remove. The Department for Environment, Food and Rural Affairs (Defra) recently put forward proposals to tackle this issue. These included encouraging manufacturers to take responsibility for helping to reduce chewing gum litter and clarifying legislation so that chewing gum would be treated in the same way as other litter. This briefing considers the options for preventing and for cleaning up chewing gum litter.

Background

Sales of chewing gum have been increasing steadily in recent years, with sugar-free gum the fastest growing sector. Wrigley's, which owns many of the chewing gum brands sold in the UK, has seen its sales across Europe and the US grow by over a third since 1998.

Most consumers dispose of their chewing gum responsibly. However, where chewing gum is dropped onto pavements it sticks firmly to the surface as it dries. Chewing gum does not break down over time and so the deposits gradually accumulate. The government believes that these chewing gum deposits compromise the quality of public spaces in the same way as other litter. A national survey commissioned by Defra, and to be repeated annually, reported in 2002 that chewing gum was the major source of staining on pavements.[1] Defra reports that the greatest problems are around facilities such as schools, cinemas and swimming pools that are frequented by children and young people.

Government policy

Defra has proposed tackling the issue from two angles.[2] The first is to amend legislation to make it clear that chewing gum should be classified as litter. Local authorities (LAs) have a legal duty to clear litter from public places.[3] Acceptable standards of cleanliness are defined and citizens can take legal action where these are not enforced. LAs also have the power to take action against people who create litter, either through formal prosecution or by appointing street wardens who can issue £50 on-the-spot fines. There is currently confusion over whether these powers apply to chewing gum and practice varies between LAs.

Defra's other strategy is to reach voluntary agreements with chewing gum manufacturers over how they could contribute to managing the problem. This is in line with the 'polluter pays' principle, which aims to make companies who pollute the environment responsible for their actions. Defra is continuing discussions with manufacturers and other interested parties, such as the Local Government Association, and will be presenting a range of proposals to manufacturers in September 2003.

Reducing chewing gum litter

Prevention

Fines for dropping chewing gum

Leicester City Council has introduced £50 on-the-spot fines for dropping litter, including chewing gum. This is enforced by a team of street wardens who patrol the city centre. Defra hopes to encourage other LAs to use similar powers through its amendments to legislation.

Restricting the sale of chewing gum

Singapore introduced a complete ban on chewing gum in 1992. However, this was relaxed in 2002 when sugar-free chewing gum was made available on prescription as part of a trade deal with the United States. This year, all restrictions on the sale of sugar-free gum were lifted.

In the UK, Defra has proposed that LAs and retailers develop voluntary schemes to restrict the sale of chewing gum in areas with particularly heavy deposition.[2] However, manufacturers argue that this is unlikely to have much effect because few people buy, chew and dispose of their gum all in the same area. Further, LAs have expressed concerns that such voluntary schemes would be unworkable.

Developing non-sticky or biodegradable gum

Chewing gum is made from synthetic rubber to which softeners, sweeteners and flavourings are added. Chewing gum therefore shares properties with other rubber-based products such as car tyres, shock absorbers and some glues. Synthetic rubbers are stretchy, retain their properties indefinitely under all weather conditions, are resistant to aggressive chemicals and have strong adhesive properties.

A change in the stickiness or the biodegradability of chewing gum would require a change in the chemical structure of the rubber gum base. However, the gum base also determines commercially important features of chewing gum such as flavour retention, chewiness and shelf life. The challenge is to develop a non-sticky or biodegradable gum base that does not compromise the other features. Manufacturers are reluctant to release details of their research programmes for reasons of commercial confidentiality. However, it is generally assumed that little progress has been made. Wrigley's says that it has invested some £5million on research in this area in the last five years but no new products are yet ready for consumer testing; other manufacturers say that they see little incentive to invest in this area because there is no obvious financial return.

Education and awareness campaigns

Wrigley's argues that educating people not to drop chewing gum on the street is the most effective long term solution for reducing litter. It first printed the advice to "Use this wrapper to dispose of gum" on packaging in 1933 and other manufacturers have followed suit.

National campaigns aiming to educate people to dispose of gum responsibly have been run by manufacturers and by ENCAMS, an environmental charity that is part funded by Defra. LAs run local campaigns, often in conjunction with clean-up operations and other preventative measures. For example, Bournemouth Council followed removal of chewing gum from pavements in 2002 with the introduction of GumTarget boards. These poster-sized panels, which are papered with images nominated by the public, are erected in target areas. On average 1,600 pieces of gum are collected from the boards each week and the council reports that there has been a significant decline in chewing gum litter on pavements.

Preventing chewing gum from sticking to pavements

A less sticky chewing gum could be swept up with other litter while a biodegradable product would disappear over time. However, developing such gum is not easy (see box above). Defra is considering how it could stimulate further research in this area. An alternative is to coat pavements with 'non-stick' substances designed to make gum removal easier.

Clean-up

There are various methods available for removing chewing gum from pavements (see box opposite). Specialist gum removal companies typically charge between £0.45 and £1.50 per square metre with the cost depending on the method, the type of surface and the amount of chewing gum: Trafalgar Square was cleaned in June 2003 at a cost of £8,500. An initial 'deep clean' of an area is more expensive than repeat cleans, which are usually recommended for every 3-12 months. Some LAs have chosen to purchase specialist equipment and use in-house teams to carry out cleaning.

Removing chewing gum from pavements

The most widespread methods for removing gum from pavements use water or steam, sometimes with chemical agents, to soften and then dissolve or break up the gum. Factors for LAs to consider in choosing a method include:

- Water or steam used under high pressure can damage grouting between paving stones
- Cleaning may damage the surface material. For example, tarmac melts at high temperatures.
- Spot cleaning of individual pieces of chewing gum causes less damage but is more time consuming than methods that clean whole paving slabs in one go.
- Approaches that use large quantities of water or bulky equipment will be disruptive to pedestrians. Work is therefore often carried out at night, which means that the noise level needs to be considered.
- Access may be needed for bulky equipment.
- Generation of steam can use large amounts of energy.

ENCAMS would like to see more LAs instigating clean-up programmes but recognises that this would have cost implications. Any legislative amendments that placed a duty on LAs to clean up chewing gum would need to be costed by Defra and supported by a definition of acceptable standards of cleanliness in relation to gum.

Paying for cleaning up chewing gum

LAs already spend over £400million on street cleaning each year. Cleaning up chewing gum would add to this and may lead to further costs in the long term from damage to pavements. Several LAs have said that they would like central government to collect a levy from manufacturers as a contribution to clean-up costs. As an alternative approach, the Irish Government is currently consulting on a proposed tax of ~7p on each pack of chewing gum sold. The money raised would be ring-fenced for an Environment Fund and redirected to LAs.

Overview

A reduction in irresponsible gum disposal coupled with an increase in pavement cleaning will be required if chewing gum litter is to be reduced. Currently costs fall largely to local authorities. Defra hopes to tackle the issue through liaison with gum manufacturers and other stakeholders; an alternative would be to use legislation to enforce compliance.

Endnotes

1 *Local Environmental Quality Survey of England*. ENCAMS, 2002. Available via www.encams.org
2 *Living places: powers, rights, responsibilities.* Defra, 2002. Available via www.defra.gov.uk
3 Environmental Protection Act 1990

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