

New Polystyrene Recycling System from Purex Helps Reduce Landfill

Enough waste polystyrene to fill 15,000 Olympic sized swimming pools is sent to landfill every year in the UK alone. The new Styromelt polystyrene recycling system from Purex can help recycle this waste into new products, fuels and energy.

Feb. 16, 2007 - [PRLog](#) -- Polystyrene (EPS) is produced in thousands of different forms for specific packaging requirements and is also used to make products such as disposable cups, trays, cutlery, cartons, CD cases and containers.

It is conservatively estimated that well over 300,000 tons of waste EPS are produced on an annual basis in the UK. In the USA according to the EPA over 377,579 tons of Polystyrene are produced in California alone.

Because EPS is so light, the volume of landfill space it takes up compared to its weight is considerable. To put this in perspective 300,000 tons equates to approximately 37.5 million cubic metres or enough to fill 15,000 Olympic sized swimming pools each year!

This material is not generally a high profile target in recycling terms unlike glass, paper, aluminium cans, batteries, tyres and the like. Many companies and local authorities may not have considered the implications of just how much EPS they are dumping. So what is the solution? The answer is separation, compaction and recycling.

Separation

One of the first things a company or local authority recycling centre can do is to take note of just how much waste EPS they produce. Running a trial of separating EPS before it goes into a skip may show just how much could be potentially recycled.

Compaction

EPS is compacted to reduce the amount of space needed for storage and also to reduce transport costs. The historical method of EPS compaction is by mechanical means. The EPS is pushed through a compactor to reduce its volume by around half, it is then formed into blocks and stored.

The main drawbacks of this method are that it only compacts EPS by around 50%, it can also create lots of noise and dust, a full time operator is usually required to feed the compactor and foreign objects introduced in error (or deliberately) can damage the machine itself leading to expensive repair costs and downtime. Contaminated EPS such as fish boxes cannot be compacted in this way due to health and safety reasons as blood and other organic matter will be present. Storage of boxes contaminated in this way can also be a problem as they take up significant space, can create an odour problem and attract vermin.

The new alternative to mechanical compaction is the Styromelt 'Thermal Compaction and Densification System' from Purex International.

Using these systems is simplicity itself. The machine has a loading area of two cubic metres which is filled with EPS, the door is then closed and locked and the machine switched on. Two temperature controlled thermal plates then heat the EPS to melting point where it releases all the air and other gases it contains forming a dense resin which is collected in a tray where it cools. Once cool, the resin block is removed from the tray and stored for recycling.

The most astonishing thing about this process is that the EPS is reduced by up to 95% of its original volume and the resin block is completely sterilised so it can be stored indefinitely, easily handled or transported without a problem.

Fumes from the process are passed through a filter system and the machine is IP56 rated and manufactured from stainless steel so it can be situated outdoors.

Recycling

Reducing the amount of landfill space EPS takes by up to 95% would be reason enough to thermally compact and densify this material.

But EPS holds a few recycling secrets.

This material can be recycled into a myriad of new products. The thermally condensed blocks can be turned into coat hangers, picture frames, replacement hardwood, disposable cameras and CD cases to name but a few. There is also an emerging market for EPS blocks for the production of fuels such as green diesel and LPG.

The thermally compacted blocks can also be sold to a variety of outlets for incineration (or energy recovery). The reason for this demand is that incineration of polystyrene generates large quantities of usable energy - approximately 16,000 BTUs/pound, which is twice that of coal!

Alternatively organisations who produce thermally compacted blocks can also take advantage of a service to collect the material in the UK free of charge subject to volume agreements.

Summary

It is a fact that as a society we produce too much waste. Landfill sites are becoming increasingly full and cannot last forever. Therefore any method of taking a product from cradle to grave and recycling it has to be more than welcome.

For further information visit <http://www.styromelt.com> or call 01709 763000 for a free site survey and consultation.

Website: www.styromelt.com

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