GPDA

Gypsum Products Development Association

# Ashdown Agreement
# Final report to 31 December 2015

**The Ashdown Agreement on Plasterboard Recycling took effect from 1st April 2007. It sets out shared objectives for the diversion of waste plasterboard from landfill. This paper is a review by the GPDA of the industry's performance during the past 9 years.**

# Contents

# Introduction

**The Ashdown Agreement on plasterboard waste and recycling under the GPDA (Gypsum Products Development Association) set out shared objectives for the diversion of waste plasterboard from landfill. This paper reviews the GPDA's assessment of the industry's performance from April 2007 until the end of 2015.**

The GPDA is the trade association representing manufacturers of gypsum products, whose GB members operate all the production sites in the UK. The primary function of the GPDA is to develop and encourage the understanding of gypsum-based building products and systems and to pioneer new applications for these products. It also has an ongoing commitment to advise on matters of environmental impact, energy conservation and health and safety, wherever gypsum based products are used. More information on the GPDA can be found at www.gpda.com.

The Ashdown Agreement arose out of industry discussions regarding the recovery and recycling of plasterboard waste. From 2005 WRAP (Waste and Resources Action Programme) ran a programme to address the issue of plasterboard waste, working closely with the related industry sectors to identify and develop solutions. One output was to encourage the setting of targets to drive specific changes in working practices which would lead to increased diversion of plasterboard waste from landfill. In 2006 the GPDA proposed that their members enter into a voluntary agreement which would provide a measurable contribution to this objective; this agreement was then developed in collaboration with WRAP and the Market Transformation Programme (MTP), and signed by the GPDA and WRAP in March 2007.

The Agreement stated the following agreed targets:

- Target 1

To engage with all stakeholders to undertake activities which reduce the amount of new plasterboard waste to landfill and increase recovery of all plasterboard waste.

- Target 2

To reduce the amount of waste being sent to landfill, both monocell and co-disposal, from UK plasterboard manufacturing operations to 10,000 tonnes per year later amended to zero tonnes by 2015.

- Target 3

To increase the take back and recycling of plasterboard waste, for use in plasterboard manufacture, to 50% of new construction waste arising's by 2015.

- Target 4

To work with all parties in the supply chain towards achieving the ultimate objective of zero plasterboard waste to landfill.

An important element of the Agreement was that it was reviewed on an annual basis to evaluate progress against the targets and that they remained realistic and achievable yet sufficiently ambitious.

It was agreed with WRAP that targets should be re-based in line with construction activity, based on annual CPA/ONS market activity reports, the assumption being that during the recession the reduction in building would have resulted in less waste being generated on that basis. 2015 activity was 98% of 2007, i.e. adjusted base figure for waste of 294,000 t and the cumulative recycling new construction waste into new plasterboard (123.806 t from the 3 manufacturers' submissions to GPDA) for 2015 was **42%**.

Although re-use for new plasterboard is accepted by all parties as the preferred route for recycled gypsum, it is acknowledged that the environmental penalty of moving waste for long distances to a gypsum plant, and the limits to the proportion of recycled material that can be re-introduced into the production stream, makes it essential to exploit other environmentally beneficial uses. It was agreed with the Environment Agency that certain other re-uses can be considered as environmentally beneficial and as agreed with WRAP these can be added to overall amount considered as recycled under Ashdown, as follows:-

**Cement** - based on the 2011 figures (2012 report Environment Agency - Mineral Products Association estimate) annually 25,000 t of recycled gypsum used in cement manufacture.

**Agriculture** - Environment Agency estimated annually 80,000 t used for agricultural soil improvement and animal bedding in 2012. This was believed to have grown significantly following the general-landfill ban in 2009, until an agriculture land restriction was made public at mid-year 2014 which led to a rapid reduction in use. A low risk statement allowing 1 t per hectare annually from March 2015 has seen usage rise again and can be assumed to have regained the 2012 level, although the actual usage for all land (including non-agricultural and private gardens) may be considerably higher.

Use of any gypsum for animal bedding was banned in 2015 and the assumption is that current usage is zero.

WRAP have agreed 25% of the cement and agricultural usage is likely to have come from new construction, which equates to 26,250 t. The balance comes from refurbishment and demolition.

Adding these figures, that would bring the overall total recycled under Ashdown in 2015 to **46%**.

# Executive Summary

## For 12 months to 31 December 2015

Overall, excellent progress has been made towards achieving the agreement's overall objectives, with all four targets achieving some degree of success over the past twelve months.

The year has seen substantial improvements associated with target 3, relating directly to tonnages of post-consumer waste returned and recycled into new board.

**Target 2**
To reduce the amount of waste being sent to landfill, both monocell and co-disposal, from UK plasterboard manufacturing operations to zero tonnes by 2015.
**This had been consistently achieved since February 2012. However, in 2015 some 7,644 tonnes were sent to landfill. Manufacturers are working hard to avoid this reoccurring.**

**Target 3**
To increase the take back and recycling of plasterboard waste, for use in plasterboard manufacture (amended to accepted environmentally beneficial uses) to 50% of new construction waste arising's by 2015.
**Results for the 2015 were 123,806 tonnes recycled for use in plasterboard manufacture. This represents 42% of new construction waste.**

The Ashdown Agreement made provision for targets being delivered according to the best environmental option, with review and revision annually between WRAP and the GPDA, to ensure that these targets remained fair but challenging. These are seen

as being new plasterboard, in cement manufacture and for soil improvement.

### Targets 1 and 4

To engage with all stakeholders to undertake activities which reduce the amount of new plasterboard waste to landfill and increase recovery of all plasterboard waste, and to work with all parties in the supply chain towards achieving the ultimate objective of zero plasterboard waste to landfill.

These targets are not quantifiably measurable, but the manufacturers have participated in a range of initiatives, notably with other stakeholders in the formation of the Plasterboard Sustainability Partnership and engaging with the supply chain towards these goals.

- WRAP Life Cycle Assessment (LCA) Study of Plasterboard : published April 2008;
- WRAP / BRE Study on Plasterboard in Demolition Waste ('Scoping Study for the Evaluation of Plasterboard Waste arising from the Demolition Sector');
- WRAP / BRE Report: 'Calculating & Declaring Recycled Content in Construction Products: Rules of Thumb Guide';
- DEFRA Plasterboard 'Roadmap' to further improve the sustainability of plasterboard and reduce its lifecycle impacts;
- Eurogypsum Specification on recovered gypsum;
- WRAP/ Environment Agency Quality Protocol TAG (Technical Advisory Group) participation (see notes supporting Ashdown Target 3 on page 3 of the Agreement) which precedes the anticipated publication of a Quality Protocol for gypsum from waste plasterboard; and

- WRAP/ BSI Steering Group participation on PAS109 towards a Publicly Available Specification for recycled gypsum
- PSP (Plasterboard Sustainability Partnership) stakeholders' Action Plan on reducing carbon, improving safety, reducing waste and increasing recycling
- Active participation in the EU LIFE GtoG recycling project for 3 years 2013-2016. This included pilot trials with higher dosing rate of post-consumer gypsum.

# Evaluation of overall progress and success over the term of the agreement

The progress achieved between April 2007 and March 2016 in delivering towards the targets is discussed below. Also presented are the actions proposed in the Agreement document to facilitate delivery.

## Target 1

To engage with all stakeholders to undertake activities which reduce the amount of new plasterboard waste to landfill and increase recovery of all plasterboard waste.

GPDA manufacturers have continued efforts over the past 10 years through ongoing projects; the scoping study on plasterboard recovery from demolition waste, the Quality Protocol gypsum from waste plasterboard, Publicly Available Specification (PAS) 109, and the plasterboard Life Cycle Analysis (LCA).

Work on the Quality Protocol, PAS 109 and the LCA involved close collaboration with other stakeholders. The publication of the LCA in particular assists the industry to communicate the benefits which diversion from landfill can bring.

Manufacturers' technical advice services continue to provide customers with high quality advice on elimination of site waste by a rigorous process beginning at design and specification phase and continuing through to the installation phase.

The original concept of the Ashdown Agreement was to simultaneously engage other parts of the plasterboard sector, in order that activity for collection and reuse becomes consistent and coordinated. It is therefore important that similar agreements with other stakeholders are actively pursued, since delays here can impede progress with target 1.

## Target 2

To reduce the amount of waste being sent to landfill, both monocell and co-disposal, from UK plasterboard manufacturing operations to 10,000 tonnes by 2015 (subsequently the target was set at zero tonnes)

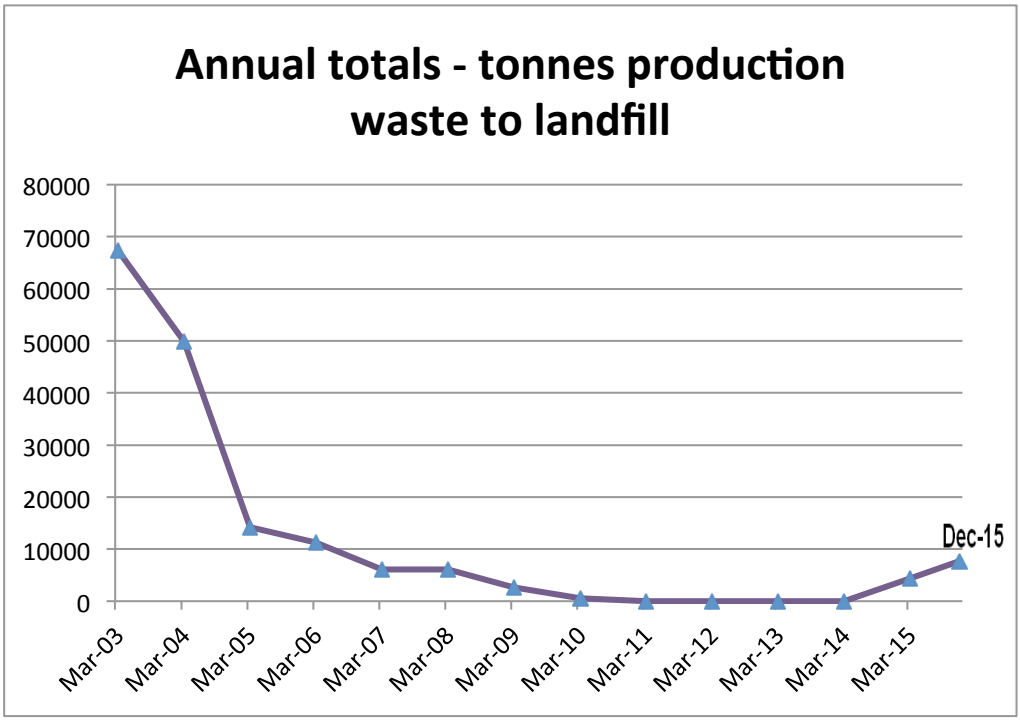
## Progress

Rapid progress was made through manufacturing plant investment and improved practice. This resulted in process waste to landfill of zero tonnes per annum by 2011.

Figure 1 shows the quantities of plasterboard waste disposed of to landfill by UK manufacturing operations from March 2003 to 2015.

Occasional peaks of plasterboard waste may still occur due mainly to the commissioning of new production facilities. Following three years of zero manufacturing waste, in 2015 some 7,644 tonnes were sent to landfill. This can be attributed to restrictions on recycled gypsum's use for agriculture land, which resulted in a sudden increase in production waste being sent via secondary recyclers to non-hazardous single cell landfill. Manufacturers are working hard to avoid this reoccurring and any excess waste is sent for alternative environmentally beneficial recycling.

**Figure 1** Historical production waste to landfill



## Target 3

To increase the take back and recycling of plasterboard waste, for use in plasterboard manufacture, to 50% of new construction waste arising's by 2015.

One difficulty in measuring progress against this target is quantifying the total amount of plasterboard waste arising from construction activities.

Most estimates agree with the WRAP estimate of 300,000 tonnes in 2007, although it is commonly acknowledged that this is an estimate with a wide margin of error and that the assumptions used to derive it are somewhat historic. It will also be impacted by construction activity levels. While the quantity of plasterboard used in this sector has increased, in common with all industries, the sector's awareness of the need to reduce waste is much improved. The Contractors and Developers target to reduce plasterboard waste alongside the Ashdown Agreement is a case in point.

WRAP undertook a number of studies from which site wastage rates for various construction materials have been obtained. Unfortunately, for plasterboard the range is exceptionally wide from 5% to 30% depending on the job.

Figure 2 shows the amount of post-construction plasterboard waste recycled back into new plasterboard from 2008 to 2015.

There has been a significant increase in the amount of post-construction waste plasterboard recycled into new plasterboard since 2008.

**Figure 2** Historical recycling of post-construction waste arisings for use in plasterboard manufacture:-


It should be noted that waste plasterboard is also recovered through other specialist plasterboard recyclers who supply the gypsum into alternative (non-plasterboard manufacture) applications and markets. Their recycling is not captured in the data as the Ashdown Agreement relates specifically to the plasterboard manufacturers only.

## Target 4

To work with all parties in the supply chain towards achieving the ultimate objective of zero plasterboard waste to landfill.

Target 4 expresses the commitment of the manufacturers towards the ultimate goal of zero waste to landfill. Therefore, all the activities mentioned under targets 1 to 3 inclusive are relevant to action towards that goal

A major driver chosen by the Government to incentivise waste reduction is the Landfill Tax currently set at £82.60 per tonne for non-hazardous, non-inert waste. Plasterboard is classified as a non-hazardous high sulphate waste. When present in a mixed load containing identifiable gypsum-based materials (e.g. plasterboard), this material must not be landfilled with biodegradable waste. Where a load of gypsum is sent to landfill it must be deposited in a separate cell with waste that does not have a biodegradable content that exceeds specified limits.

Efforts by, and cooperation with, the Contractors and Developers to reduce construction plasterboard waste have made significant progress towards the aim of zero waste to landfill. GPDA has worked through the PSP on several initiatives, not least the Plasterboard Roadmap Action Plan, manufacturer take-back schemes, investment in new plant and storage capacity, cut-to-length products and encouraging producers of gypsum waste to separate it for recovery and recycling wherever possible.

# Future prospects

## Contributing factors

These factors are as identified at the time of writing.

### Performance of the Market

It is anticipated that a number of factors in the regulatory environment will increase demand for plasterboard recycling services from construction clients:

- Ban from general landfill since 2009
- High cost of permitted non-hazardous separate cell landfill
- Availability of FGD as an alternative source of gypsum
- Restrictions on agricultural use
- Technological developments
- Site Waste Management Plans (SWMP)

These factors will encourage the construction sector to consider waste more closely, in particular reducing its generation and effectively recovering it for recycling. Plasterboard waste is known to be one of the largest arising's on construction sites after inert waste (concrete, blocks, bricks etc.), and one for which relatively simple solutions can make significant impacts on waste arising's.

### Availability of FGD

There is evidence that secondary recyclers have seen significant interest in recycled gypsum following the announcement of the closure of coal fired power stations in line with EU policy, which will restrict the availability of FGD gypsum, which accounts for over 50% of the gypsum used for new plasterboard. The announcement by the government that all such stations must

close by 2025 (unless new technology can facilitate carbon capture) was a significant acceleration of the closure timetable and can be expected to increase gypsum demand from other sources more rapidly.

## Offsite Construction/ Laminators

Offsite construction methods will continue to take an increasing proportion of the construction market. They have the potential to significantly reduce the quantity of plasterboard waste produced on a construction project and, being a factory based process, any waste that is produced is highly suitable for recycling. Such waste will therefore be accounted under Target 3. This sector has the potential to make a major contribution to reducing the amount of plasterboard waste to landfill.

## Recycling outside Ashdown

In addition to recycling post construction waste, significant quantities of refurbishment and demolition waste are also recycled but do not feature within the results reported for Ashdown Target 3.

## Wider Economic Situation

The credit crunch that started in the US had a disproportionate impact on UK construction, with wider implications than just the housing sector; repair, maintenance and improvement (RMI) work and the commercial sector were also be impacted by weakening of the global economy.

This inevitably put the customers of the manufacturers under pressure to protect profits by reducing costs wherever possible. In the handling of waste their main priority was eliminating it

wherever possible, or reducing it, but where they have to dispose of waste to do so at the lowest cost. WRAP have strong evidence to demonstrate that good materials resource efficiency, including good practice waste management, can result in significantly lower costs to the construction client/contractor, and work is on-going to instil this message within that sector.

## International Cooperation

The need for greater sustainability and waste reduction/recycling are not exclusively UK issues. The GPDA is a member of Eurogypsum, which is seeking to promote greater sustainability throughout the EU, which the industry sees as central to its future success.

The recently completed €3million Eurogypsum/LIFE 'Gypsum to Gypsum' project on recovery for re-use and closed-loop recycling is illustrative of this commitment and will impact the UK in benchmarking and implementing best practice. The main objective of the **GTOG project** was to change the way gypsum based waste is treated. It aims at transforming the European gypsum demolition waste market to achieve higher recycling rates of gypsum waste, thereby helping to achieve a resource efficient economy. 13 reports were published, covering trial deconstructions, current and best practices, increasing re-incorporation of recycled gypsum back into the manufacturing process, tools and techniques and communication of the project actions and results.
www.gypsumtogypsum.org

## Technological Developments

Introducing recycled waste gypsum back into the manufacturing process has a current technological limit considered to be around 20% recycled content, without risking stoppages. Trials using up

to around 30% have been shown to be feasible in the short term, but this would require significant investment by manufacturers in new equipment to sustain. However, given the other drivers outlined above, and further industrial developments, it is anticipated that the pace of such advances will inevitably accelerate.

## Circular Economy

The 'Circular Economy' approach is gaining increasing attention from industry and Government at all levels. The European Commission has adopted an ambitious 'Circular Economy Package', which includes revised legislative proposals on waste to stimulate Europe's transition towards a circular economy to boost global competitiveness, foster sustainable economic growth and generate new jobs. The measures aim at "closing the loop" of product lifecycles through greater recycling, improved waste management and re-use.

The Ashdown Agreement, signed in 2007, was a precursor to this development in viewing substantiality from a holistic perspective and setting clear targets for reduction of waste and establishing an ambitious and credible long-term path for waste management and recycling.

# Conclusions

The Government's *Waste Strategy for England 2007* cited the Ashdown Agreement as setting a positive precedent for the rest of the construction industry. Similar agreements for the other elements of the plasterboard sector supply chain followed and this has was adopted as a formal action of the Government's *Strategy for Sustainable Construction* published in June 2008.

During the operation of the Ashdown Agreement, the manufacturers made significant progress towards achieving the targets. The target for reducing production plasterboard waste being disposed of to landfill was achieved early, and progress towards recycling of post consumer waste can be said to have achieved its 50% target. It can therefore be considered a major success as a catalyst for the wider industry's sustainability.

## PSP Action Plan

With the end of the term of the Ashdown Agreement, the industry recognised that the momentum so far achieved could be lost. It was therefore considered essential that a successor commitment to Ashdown be adopted. The obvious location for future targets was seen as the PSP Action plan, which brings together targets adopted by the various stakeholders in the plasterboard industry. The decision was made because it was recognised that further achievements will require the commitment and participation of all stakeholders.

The following targets have been agreed to 2020:-

1. **Reduced injury rate**
   Targeting zero injuries.

2. **Cutting carbon**
10% reduction in carbon per unit of production by 2020 based on 2010 levels

3. **Post-consumer waste**
Target 10% post-consumer recycled gypsum content of new plasterboard by 2020

**Front cover photography:** In-feed to waste plasterboard recycling facility (photo courtesy British Gypsum)