

# Plasterboard removal

## Introduction

'Plasterboard' is a wall covering with a gypsum plaster core and paper covering. It has been used in building construction since the 1960's as a replacement for wood and Masonite.

All plasterboard can be reused and recycled:

- Large pieces of plasterboard in good condition can be reused in building construction, while smaller pieces and pieces in poor condition can be recycled.
- Removing plasterboard in more useful sizes (to increase reuse) has been made easier by the use of metal studs and tracking systems.
- All sizes can be recycled into a range of new gypsum products: plasterboard, pottery, road surfaces, plaster of Paris (medical applications) and soil conditioner.
- Even painted plasterboard can be processed – paper coverings and other contaminants are removed from the board and the gypsum core is recovered.
- Gypsum is a 'clean green' soil conditioner, best for helping to improve structure in heavy clay soils.
- Reducing greenhouse gas emissions, environmental damage caused by mining new gypsum and the amount of waste sent to landfill.

## Recovery rates

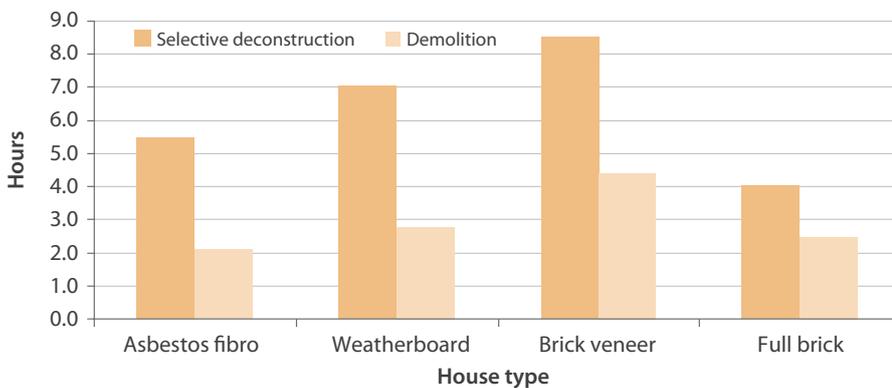
Maximise recovery by removing the outer covering (e.g. brick veneer, weatherboard) of a building first to allow easy access to and removal of larger pieces, creating greater opportunity for reuse.

## Deconstruction versus demolition

### Time

The time taken to remove and place plasterboard in appropriate bins varies depending on the type of house being disassembled. As illustrated in Figure 1, plasterboard removal takes between 1.5 and 2.5 times longer than demolition in most houses.

Figure 1: Time comparison for plasterboard removal



## Cost

Table 1 details the costs associated with the reuse, recycling and disposal of plasterboard for four building types.

- Time and labour are significant components of total costs.
- Reuse of plasterboard can offset removal costs by saving on raw materials costs and avoiding recycling and landfill fees (plasterboard was not reused in our study).
- Landfill rates (\$154/Tonne) for plasterboard disposal are considerably higher than recycling rates (\$60/tonne).

**Table 1: Costs associated with plasterboard removal**

Building type	Building area (m <sup>2</sup> )	Weight (t)	Costs/(income)		
			Deconstruction	Selective deconstruction	Demolition
Asbestos fibro	150	1	\$702*	\$702	\$453
Weatherboard	160	2	\$762*	\$762	\$453
Brick veneer	200	2.5	\$835*	\$835	\$548
Full brick	150	1	\$582*	\$582	\$263

\* Reuse did not occur in the original case studies so costs are based on recycling costs. Please note that disposal costs are average costs from a number of facilities in NSW.

## Conclusions

Because of the cost of labour, the disposal of plasterboard is the most economically viable option considered in our study. However, reuse and recycling options are recommended since landfill costs are increasing relative to recycling and the environmental benefits of recycling are significant.

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