

# Roof surface removal

## Introduction

'Roof surfaces' – terracotta and concrete tiles and sheet steel roofing – have good reuse and recycling potential. Tile and steel are 100% recoverable.

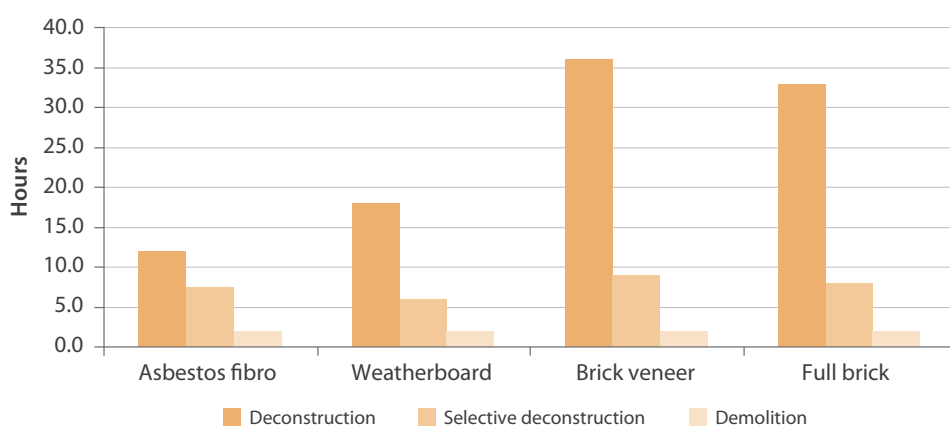
- Tiles can be reused if they are in excellent condition but require care during removal. Using a brick elevator and up to three labourers is recommended.
- Recycling tiles requires less care during removal.
- Good quality terracotta tiles are sought after for renovations and repairs, particularly on older homes, and may attract good resale prices.
- Low quality terracotta tiles can be crushed and recycled as a landscaping medium, saving on landfill disposal costs.
- Concrete tiles typically require a thorough clean, re-colour and reseal prior to reuse, a costly process. Instead, they can be crushed and used as a low grade aggregate in drainage media and road base.
- Sheet steel roofing can be reused if in good condition; all other steel products are recyclable.
- Where weathering has occurred, tiles need to be thoroughly washed and re-sealed prior to reuse.
- Reusing and recycling roofing materials can significantly reduce energy and resource use, greenhouse gases and the amount of waste sent to our landfills.

## Deconstruction versus demolition

### Time

More time is needed to recover tiles for reuse than if a roof was to be demolished. Removing tiles for recycling requires less care: tiles can just be thrown into bins for transport.

Figure 1: Time comparison for roof surface removal (tiles)



The time taken shown in Figure 1, includes labour (total man hours) and active plant hours.



## Cost

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

- A good initial survey will take note of the condition of tiles and the potential to sell them to offset labour costs while avoiding landfill fees.
- Cost differences between recycling (\$11/tonne) and landfill disposal (\$115/tonne) provide incentives to recycle where resale is not feasible – save on landfill fees to offset labour costs.

**Table 1: Costs associated with deconstruction of roofing materials (tiles)**

Building Type	Building area (m <sup>2</sup> )	Weight (T)	No. tiles	Costs/(income)		
				Deconstruction	Selective deconstruction	Demolition
Asbestos fibro	150	5	2,000	\$483*	\$717	\$955
Weatherboard	160	5	2,000	\$790*	\$506	\$955
Brick veneer	200	12	4,000	(\$1219)** income	\$808	\$2,033
Full brick	150	8	3,500	(\$1110)** income	\$619	\$1417

\* Tiles were not of sufficient quality to sell, but were taken free of charge so landfill fees were avoided.

\*\* Tiles were sold at retail rate so income was generated.

## Conclusion

Landfill disposal costs and potential income from the sale of roofing materials make both reuse and recycling attractive deconstruction options. Reuse is the cheapest option with good environmental benefits. If time is short, recycling can still save costs and benefit the environment.

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