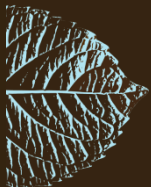




# Okala Impact Factors 2014



# Understanding Okala impact factors

The Okala impact factors were created with modifications to the TRACI impact characterization method that was developed by scientists at the US Environmental Protection Agency (EPA). The factors combine ten environmental impact categories in one single-figure score.

Designers can discern much about the environmental performance of materials and processes by looking at the factors.

# Anatomy of Okala impact factors

material or process	impact factor points	unit	description	source	CO2 eq. lbs
Light clay brick	0.093	/lb.		EI	0.2
Bricks, basic	1.5	/lb.	temperature resistant refractory brick	EI	2.3
Concrete, exacting	6.7	/cu.ft.		EI	20

**Material or process**  
Concise description of the item.

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**Material or process**  
Concise description of the item.

**Impact Factor points**  
The quantity of Okala 2014 points created, in two significant figures.

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## Material or process

Concise description of the item.

## Impact Factor points

The quantity of Okala 2014 points created, in two significant figures.

## Unit

Unit for many materials is “/pound”, but may differ. You should pay close attention to the unit.

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Concise description of the item.

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## Description

Further identification and useful information.

# Anatomy of Okala impact factors

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Further identification and useful information.

## Source

Who collected the process inventory data.

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Unit for many materials is “/pound”, but may differ. Pay close attention to the unit.

## Description

Further identification and useful information.

## Source

Who collected the process inventory data.

## Lbs CO2 eq.

The value for global warming potential.



# Polymers and elastomers

The range of potential impacts values within plastics is relatively small.

Secondary (recycled) thermoplastics have lower impacts than primary (virgin) thermoplastics. The secondary plastic factor values assume that the recycled plastic has not been contaminated by other plastics or other substances.



# Metals

Metals have a wider range of impact values. Stainless steel is more damaging than regular steel per pound, and some exotic metals have extremely high impacts.

Secondary (recycled) metals have lower impacts than primary (virgin) metals because primary metals require large amounts of ore to be sifted through and smelted.

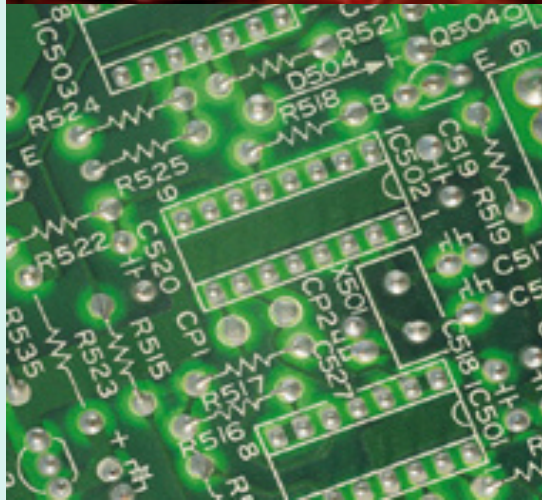
Metal processing usually creates lower impacts than production.



# Other materials

Additional materials include papers, glass, construction materials, wood types, fuels, fabrics, leather, agricultural products, electronic integrated circuitry, batteries, and computer peripherals.

The materials list allows designers to estimate the impacts of production and use of these materials.



# Energy and transportation

Air transport is much more damaging than land transport, and train and water transport are the least ecologically demanding per ton-mile.

Photovoltaic (solar) electricity (excluding storage batteries) has lower impacts per kilowatt-hour than typical electricity from typical utility generated electricity. Wind generated electricity is even better.



# Landfill and incineration

The vast majority of products in North America now end their lives in a landfill. These landfill factors assume that the landfill is sealed and cared for according to regulations.

Incineration is rare in North America, but common on other parts of our planet.

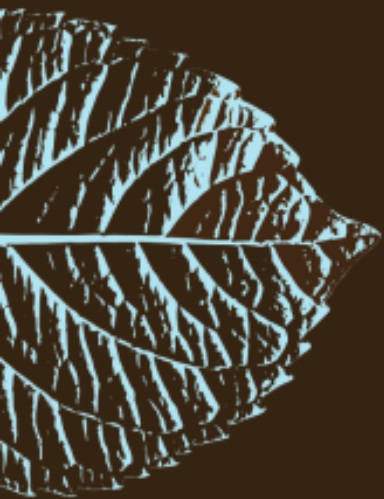


# Discussion

Please look at the impact factor values on pages 44-48 of *Okala Practitioner*.

Are some factors higher or lower in comparison to each other than you would have guessed?

What materials or processes would you add to the table if you could?



# Okala Practitioner

## Integrating Ecological Design

This presentation is part of an educational presentation series that supports teaching from the *Okala Practitioner* guide.

*Okala Practitioner* and these presentations were created by the Okala Team to disseminate fact-based knowledge about ecological design to the design disciplines and business.

Unless provided in the presentations, Information sources are found in the *Okala Practitioner* guide.

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The Okala Team initiated the collaboration with the US EPA and the Industrial Designers Society of America (IDSA) in 2003. The team developed *Okala Practitioner* with support from Autodesk, IBM, Eastman Chemical and the IDSA Ecodesign Section.

*Okala Practitioner* is available through [amazon.com](http://amazon.com).

More information and the free *Okala Ecodesign Strategy App* are found at [Okala.net](http://Okala.net).

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