



TERRA FIRMA AND SUSTAINABILITY

Composite Products (GFRP):

Fibreglass composites can significantly reduce the environmental impact of major building and infrastructure projects. Production of cement, iron & steel and other non-ferrous metals used in infrastructure account for 16% of all green house gas emissions. Using composites can reduce this impact through lower energy use in manufacturing, lower transport costs of lighter materials and more durable products. The world needs scalable solutions that address our challenges, and composites can be part of the answer in a world demanding sustainable solutions. Technology and innovation are critical to reducing carbon emissions and ensuring a sustainable future.

Fibreglass reinforced composites cause significantly lower emissions than alternative products (see graph below). The main CO2 emission in composites is from manufacturing the raw materials. When manufacturing our products, CO2 emissions are very low. Our manufacturing processes are low energy use. We only require energy to heat moulds to between 80-250°C. This is a significantly lower requirement than needed to cast aluminium or steel. Indeed, some of our products require no energy input, relying purely on a chemical reaction to harden the resins.

Air and water pollution in the production of glass fibre reinforced composites is very limited compared to alternatives such as aluminium, steel or concrete.

Transport:

Another factor to consider in CO2 emissions is the impact from transporting the product. Being a lighter weight product this means that emissions from transport are far lower than heavier steel & concrete alternatives.

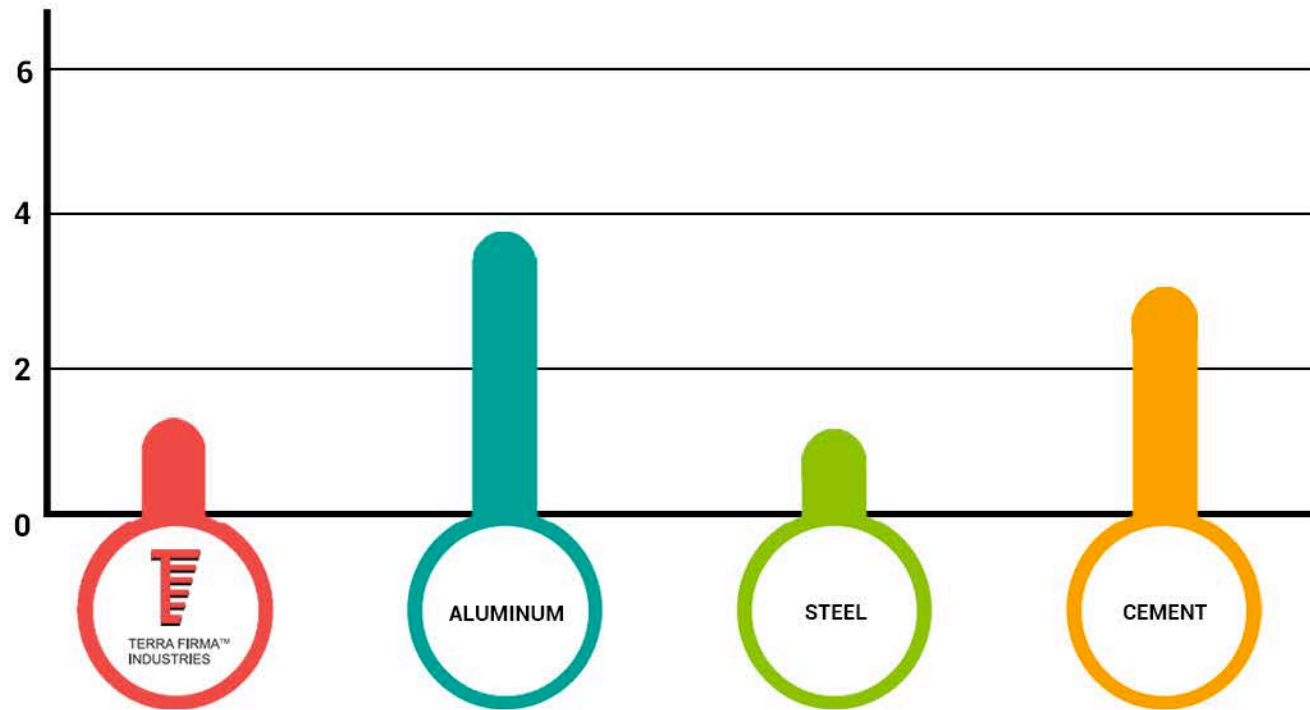
Sustainable Energy:

The Terra Firma premises are solar powered with a 10.5KW system. This enabled us to generate 14.19MWh of power in 2019 and produce over 60% of our daily needs (averaged over the year) while exporting back into the grid during peak production and weekends. Solar power generation has resulted in Terra Firma saving 17.93t of CO2 emissions since mid 2018.

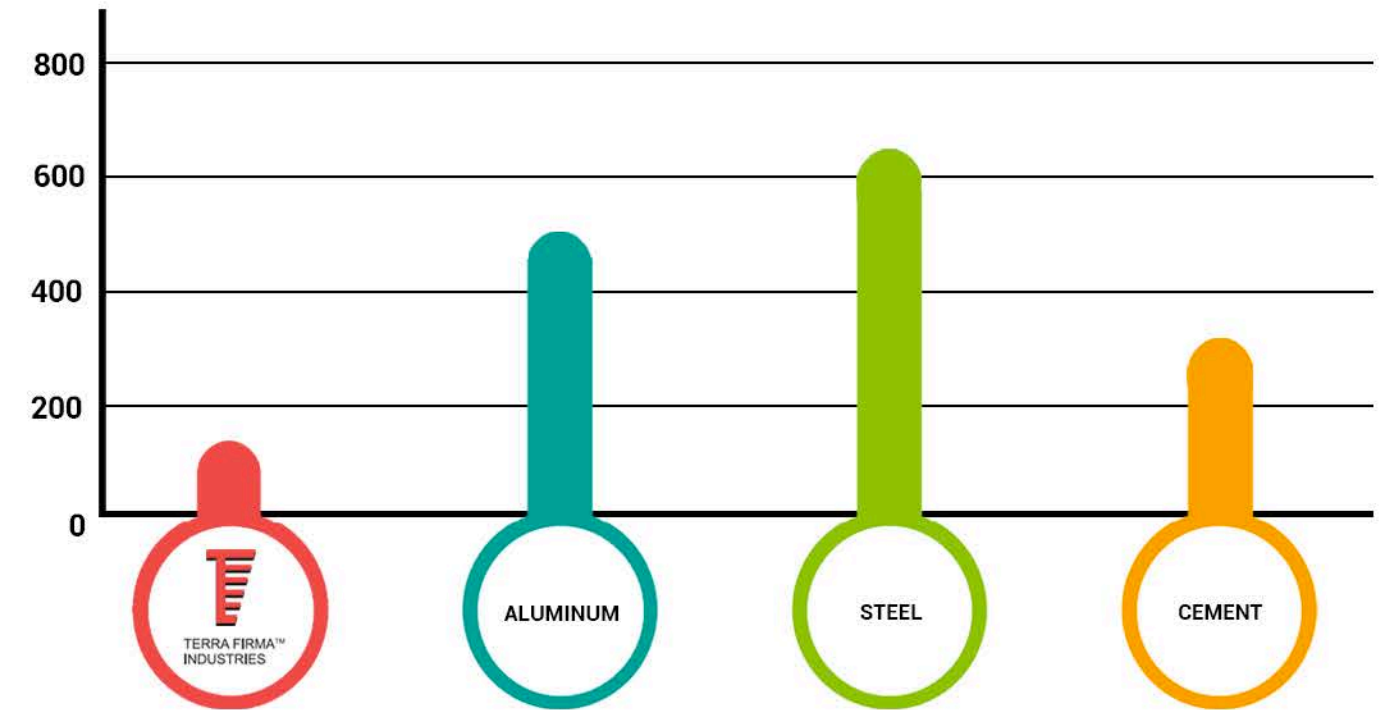


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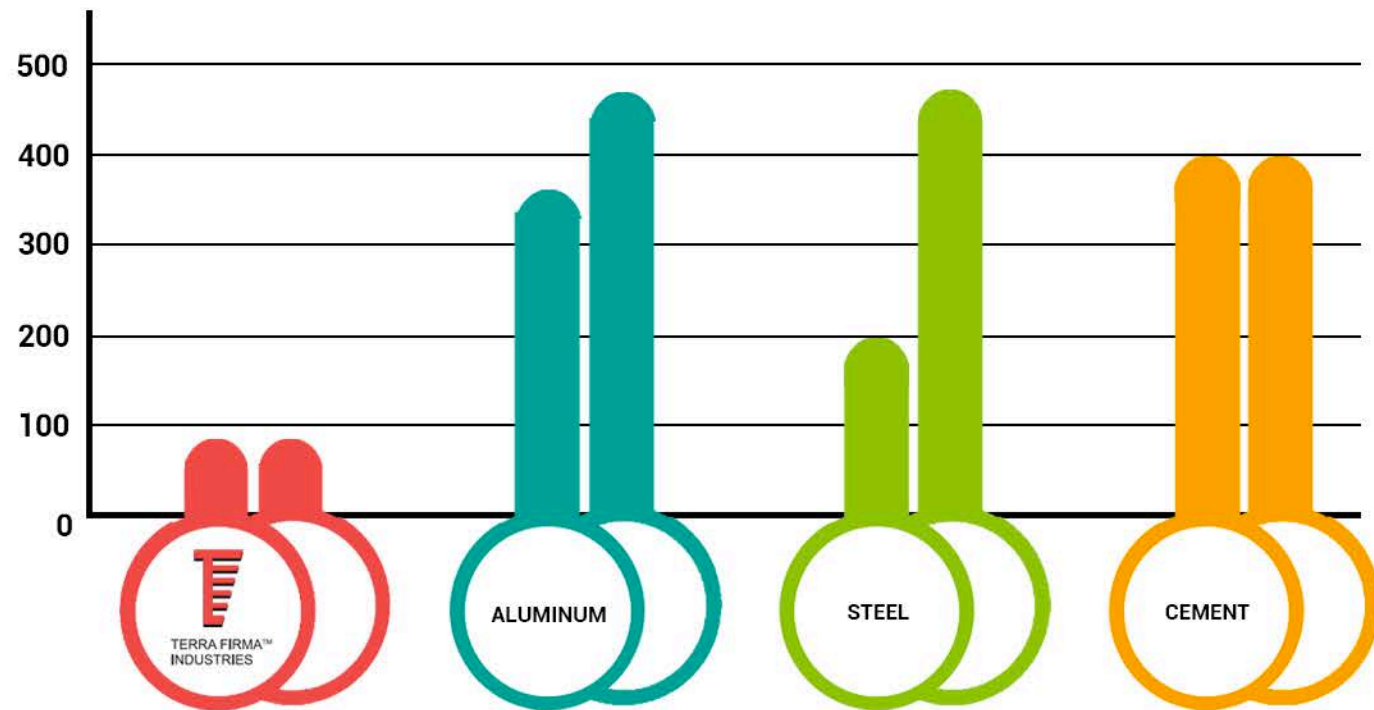
AIR POLLUTION - E 10⁶m³



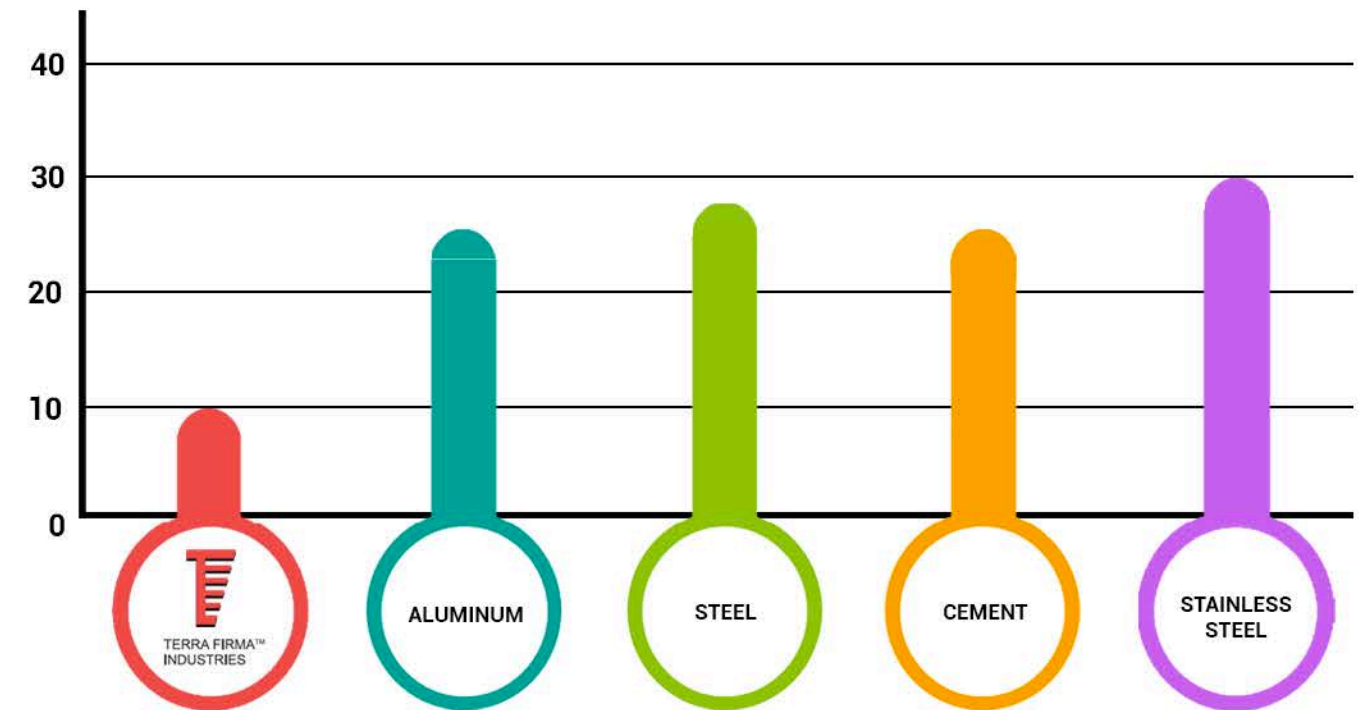
WATER POLLUTION - m³



CO2 Emissions from the same performance %



Energy Consumption 10⁴ MJ



legend: equal bending modulus equal strength