

Proving its mettle



New data have shown that the environmental impact of the entire aluminium value chain in Europe has significantly reduced in recent years, from metal supply – primary and recycling – to semi-fabrication – rolling, foil and extrusion. Based on 2015 production data collected from European Aluminium (EAA) members, *The EAA Environmental Profile Report 2018* (www.european-aluminium.eu/resource-hub/environmental-profile-report-2018/) provides accurate and reliable data on the aluminium industry’s environmental performance in



Europe and life-cycle inventory (LCI) datasets for the key process steps, essential for calculating the environmental impact of products using aluminium. The 2015 data demonstrate strong improvement by the industry. First, the environmental impact of the primary production has decreased significantly (by 21% for global warming potential) while the environmental performance of the primary aluminium consumed in Europe has remained stable. For the semi-fabrication (rolling and extrusion) and the recycling industries, there has been a strong improvement in the environmental performance of those processes in Europe.

The carbon intensity of primary aluminium production in Europe decreased by 21% versus 2010 and by 55% versus 1990.

The carbon intensity of the primary aluminium production in Europe is approximately 7kg CO₂e per kg of aluminium produced compared to a global average of 18kg CO₂e per kg of aluminium and a Chinese average of 20kg CO₂e per kg.

There is a strong decrease of the carbon intensity of semi-fabrication processes in Europe: the carbon intensity for the aluminium rolling mill process decreased by 25%



Justin Furness addresses CAB Manchester regional meeting in March, 2017

since 2010 and the carbon intensity for the extrusion process decreased by 11%.

The carbon intensity of process scrap recycling (remelting) in Europe decreased by 9% since 2010.

While this is great news, it is only part of the story. Aluminium, in common with other metals, enjoys excellent end of life recycling rates. In the building sector in Europe, around 90-95% of aluminium scrap from buildings is recycled. It is a valuable resource and a model material for the circular economy. When the end of life recycling rate is considered, the greenhouse gas emissions per kilogram of primary aluminium produced in Europe equate to just 1.8 kg CO₂e. Yet most life cycle assessment (LCA) methodologies such as EN 15804 do not promote the end of life recycling rate, focusing instead on the recycled content approach. This is very short-sighted, and we need to continue to educate the construction sector and standards committees that taking recycling at the end of life into account is of critical importance. Why should this matter to you? As architects and specifiers look increasingly at embedded carbon in construction products, they need to look beyond the ‘cradle to gate’ in the LCA they use, and properly consider the end of life stage if they truly want to promote the circular economy. □

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