

Mäkelä Alu has prepared separate total carbon dioxide emissions calculations for the production of its various aluminium profiles (raw, painted, and anodised). Separate calculations have also been prepared for products manufactured from primary raw materials and for products made from scrap aluminium melted at Mäkelä Alu’s own foundry.

Figure 1 below contains an overview of all phases of the product’s life cycle (cradle to grave). These calculations apply to the cradle-to-gate section, meaning that focus was on estimating carbon dioxide emissions created during the production phase (A1-A3; the red outline).

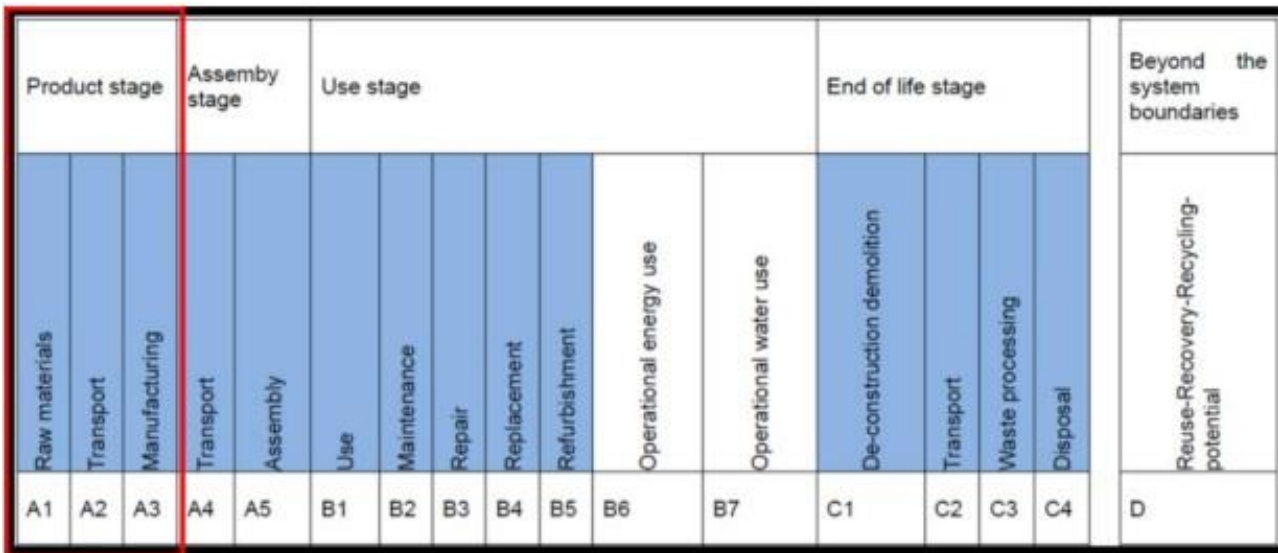


Figure 1. All phases of the product’s life cycle (cradle to grave).

Carbon dioxide emissions for various products are shown below in accordance with the emissions calculations. Emissions are given by product and for annual manufactured quantities. Table 1 shows emissions from the production (A1-A3) of aluminium profiles made from our own foundry’s recycled aluminium, and table 2 shows the emissions from the production (A1-A3) of aluminium profiles made from primary aluminium.

Table 1. Emissions from the production (A1-A3) of aluminium profiles manufactured from our own foundry’s recycled aluminium, shown separately for profiles that have not been surface treated, painted profiles, and anodised profiles.

Own foundry’s recycled aluminium	Unit	A1	A2	A3	Total
Non-surface treated aluminium profile	tn CO ₂ eq / t	1,01	0,0033	0,094	1,11
Painted aluminium profiles	tn CO ₂ eq / t	1,24	0,003	0,32	1,57
Anodised aluminium profiles	tn CO ₂ eq / t	1,03	0,005	0,28	1,32

Table 2. Emissions from the production (A1-A3) of aluminium profiles manufactured from primary aluminium, shown separately for profiles that have not been surface treated, painted profiles, and anodised profiles.

Primary	Unit	A1	A2	A3	Total
Non-surface treated aluminium profile	tn CO ₂ eq / t	6,36	0,057	0,094	6,51
Painted aluminium profiles	tn CO ₂ eq / t	6,59	0,057	0,32	6,97
Anodised aluminium profiles	tn CO ₂ eq / t	6,37	0,058	0,28	6,72

An assessment of the emissions calculations’ and initial data’s compliance with the content and quality requirements outlined in the EN ISO 14044:2006 “Environmental management. Life cycle assessment. Requirements and guidelines” standard was carried out by Ramboll Finland Oy.