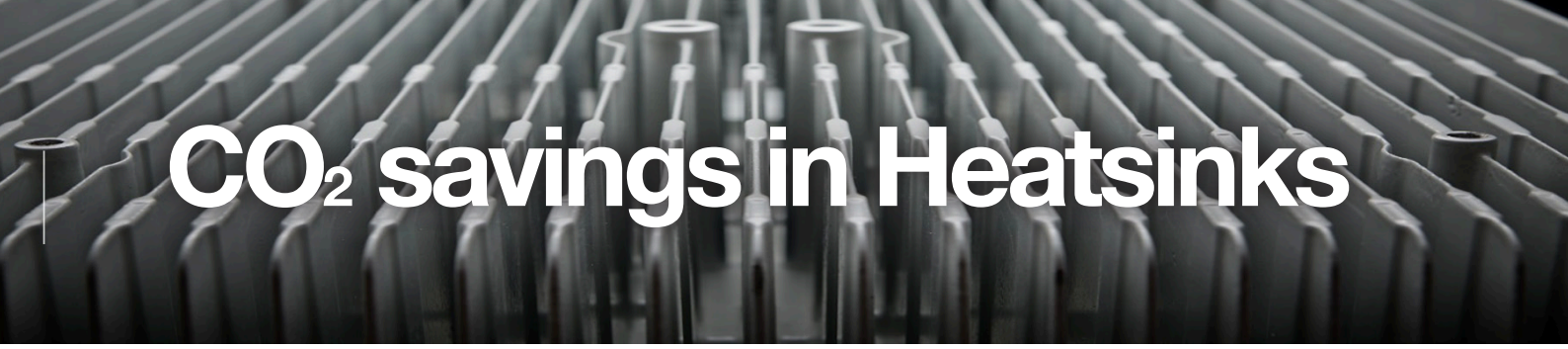


CO_2 savings in Heatsinks

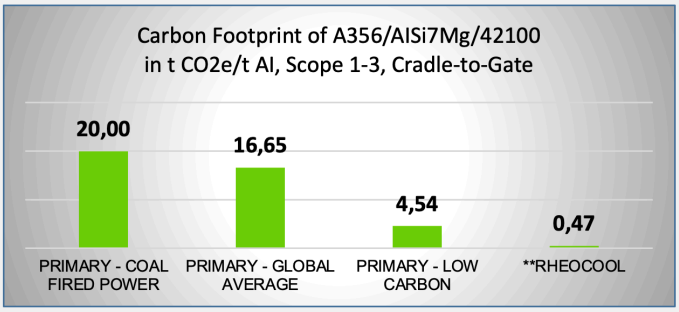
Why Rheocasting for Heatsinks

Heatsink castings for thermal management usually uses primary based alloys in order to reach requested characteristics. But with Rheocasting it is possible to use other alloys that are secondary that show interesting properties that can satisfy the expected levels. With Rheocasting there are also excellent flow behavior to fill thin cooling fin structures. Lower temperatures are positive on die life.

Used alloy: Rheocool

	TENSILE STRENGTH RM	YIELD STRENGTH RP0,2	ELONGATION	THERMAL CONDUCTIVITY
RHEOCOOL	170-210 MPa	70-110 MPa	5,5-12,5 %	190 W/mK (100°C)

CO_2-effect by using Rheocasting and Rheocool



*Life Cycle Assessment Report of the Aluminum Association

**Stena Aluminium

In the table below a comparison has been made between the different alloys. Some key players in industry says that 1 kg of CO2 = 0,1 EUR which gives below savings. The calculation is based on a heatsink of 30 kg with an annual volume of 100 000 pcs.

Type of alloy	CO_2 kg/kg Al	CO_2 impact	Saving compared with Stena (kg)	Saving in EUR
Primary, Coal based power	20 CO_2 kg/kg Al	60 000 000	58 590 000	5 859 000
Global Average	16,6 CO_2 kg/kg Al	49 800 000	48 390 000	4 839 000
Hydropower	4,5 CO_2 kg/kg Al	13 500 000	12 090 000	1 209 000
Stena RheoCool	0,47 CO_2 kg/kg Al	1 410 000		

Conclusion: If the value of CO_2 is true there are huge savings to be made by changing HPDC into Rheo for these heatsink castings.

China
Jiangle Rheocomp Machinery Co.Ltd
Edward Zhao
Edward.zhao@comptech.cn

ROW
Comptech Rheocasting AB
Staffan Zetterström
staffan.zetterstrom@comptech.se

COMP tech Rheocasting