



## Advanced steel solutions for a sustainable and economic bridge infrastructure

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### Abstract

The present paper gives insights in the current efforts of the steel industry to reach net-zero in 2050. Different steel solutions can be combined to achieve major savings in weight, material, building time and costs in construction and infrastructure projects. **XCarb<sup>®</sup> recycled and renewably produced** steel is already available on the market: by combining scrap and renewable electricity, it offers very low levels of CO<sub>2</sub> emissions per ton of finished steel. Weathering steel can be used without any additional painting of the steel girders – preventing the detrimental impact of the paintings on the environment.

In the paper, the beneficial application of hot-rolled sections in weathering steel (Arcorox<sup>®</sup>460) and XCarb<sup>®</sup> is shown based on recently realised bridge projects in Poland.

**Keywords:** Decarbonization; XCarb<sup>®</sup>; High strength steel; Weathering steel Arcorox<sup>®</sup>; Steel-composite bridges.