

Recycled Content

Context

Steel is the most recycled material in the world and recycled steel is used in the manufacture of all new steel. So it is natural to ask the question “What is the recycled content of my steel?” on the assumption that steel with a higher proportion of recycled content might be more ‘sustainable’. But for steel this may not be true.

The concept of recycled content is a useful metric to stimulate economies of scale around recycling of materials which may otherwise be incinerated or land-filled. But this is not the case for steel. Steel has been recycled for over 150 years and the recycling process and infrastructure is efficient and economical without any added stimulus. Scrap steel is valuable, so wherever it can be recovered it is, and very little steel ever goes to waste.

A 2012 Eurofer study¹ supports this and outlines the following recycling and reuse rates:

Product	% Re-used	% Recycled	% Lost
Structural Tubes	7	93	0
Profile Steel Cladding (roof / façade)	9	90	1

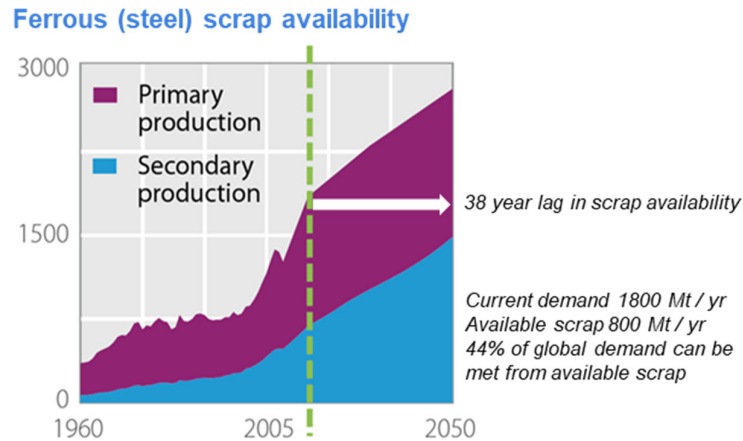
So, buying steel on the basis of high recycled content does not stimulate further recycling, but may actually stimulate the market to redirect feedstock away from products or markets where recycling is most economical – potentially reducing efficiencies and increasing costs and international transport of steel.

This view is shared across the metals industry and also by institutions like the Carbon Trust. Rather than attempting to increase the recycled content of steel, the way to make steel-based products more sustainable is to ensure that, at the end of their useful lives, the steel can be easily recovered to ensure continued, economic recycling.

¹ As part of a Eurofer led project, Tata Steel approached UK National Federation of Demolition Contractors for recycle and reuse rates. The Eurofer study covered all of Europe but most returns to the survey were received from the UK.

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Further, the availability of scrap equates to less than half the current demand for steel, therefore primary steel making is necessary to ensure the availability of volumes of the required steel, which of course will be the feedstock of steel manufactured in the future.



Building Certification Schemes

Despite recycled content being an inappropriate measure of the sustainability of steel, certain building certification schemes which cover multi-materials (for example Leadership in Environmental Energy & Design (LEED) certification of buildings) require information on this metric. In such cases, and to prevent inefficiencies, it is best to take a holistic view of recycled content. This means taking as broad a view of recycled content as possible such as a European steel making average (as below). Of course if the source of the steel is known and purchase confirmed then specific recycle rates for a producer can be used.

European Steel Industry Recycled Content

In the European steel industry as a whole, recycled scrap steel accounts for 56%² of total steel making, being made up of 32% pre-consumer and 24% post-consumer scrap. For purchases of European steel, we recommend using a recycled content figure of 56% which reflects the total industry position and prevents uneconomic distortions of the market.

Only by using the approach presented above, and by designing steel-based products to ensure efficient recovery of steel at end-of-life, will the steel recycling infrastructure remain highly efficient – ensuring that steel continues to be economically recycled and that impact to end-users of steel are kept as low as possible.

² <https://www.eurofer.eu/issues/environment/circular-economy/#:~:text=56%25%20of%20EU%20steel%20is,truly%20circular%20economy%20in%20Europe.>

Tata Steel NL/MLE Recycled Content

We recommend that this document is read in its entirety and simple extraction of recycle and reuse rates is not undertaken due to the potential unintended consequences of attempting to drive increased recycle content.

All steel manufactured by Tata Steel's European operations contains recycled steel. This is typically between 15 and 20% as an average across of our operations. This is optimized for our existing asset configuration.

For the financial year 19/20 Tata Steel NL produced 6.62 million tonnes of crude steel, recycling 1.151 million tonnes of steel scrap. This equates to a recycled content of 17%. A breakdown of the scrap by source shows that ~7% was internal pre consumer scrap. The remaining ~10% was externally sourced commercial scrap. As the exact mix of the scrap cannot be fully determined it is not possible to define this as pre/post-consumer scrap per the LEED v4 definition.

In order to use the above recycled content figures within any life cycle assessment or input to a building certification scheme credit assessment, it is essential to ensure that 100% of steel supply is sourced from Tata Steel – if there are any doubts that steel is not sourced from Tata Steel supply then, the industry-wide average must be used to avoid potential inconsistencies.