

World wide, approximately 2/3 of total crude steel production is via the basic oxygen furnace (BOF) process, also known as the integrated route. It is the method of steelmaking generally used for the production of flats ie sheet metal and plate, where the required characteristic is formability. The BOF process uses approximately 25-30% old steel to make new and is optimised at that level.

The electric arc furnace (EAF) method of steelmaking uses more than 80% old steel to make new. With so much of the product being created from scrap it is difficult to control the purity and consequent formability of the steel produced and therefore EAF steel producers tend to produce longs, which are used for rails, beams, rebar, wire etc in construction, where the major required characteristic is strength.

In understanding the recycled content of BOF and EAF steels, one should not attempt to select one steel producer over another on the basis of a simplistic comparison of relative scrap usage or recycled content. Rather than providing an enhanced environmental benefit, such a selection could prove more costly in terms of total life cycle assessment energy consumption or other variables. Steel does not rely on 'recycled content' purchasing to incorporate or drive scrap use, it already happens because of the economics. Recycled content for steel is a function of the steelmaking process itself.

Furthermore, the increasing demand for steel, in conjunction with the long service life of an average steel product means that for the foreseeable future, the total demand for steel cannot be satisfied solely by recycling of scrap. Attention should be focussed on improving scrap recycling rates in order to maximise the utilisation of all available scrap, rather than focus on recycled content.