



NORTH AMERICAN STAINLESS



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Dear Valued Customer,

This letter is in response to your inquiry regarding the energy efficiency of the North American Stainless (NAS) steel production process. NAS utilizes state of the art Electric Arc Furnaces (EAF) which became operational in 2002 and 2007. The EAF employs the use of various energy conservation technologies including thermal heat insulating covers and computer controlled exhaust gas damper systems. Since energy is a major cost of the production process in our industry, NAS is constantly evaluating and incorporating the latest technology from around the world. The molten material is then transferred to an Argon-Oxygen Decarburization (AOD) unit which uses the energy of the molten material combined with gas inputs to produce a chemical heat during the refining process further reducing energy consumption. Our vessel size is one-third larger than the US norm, which further enhances our efficient use of energy. The downstream processes are primarily natural gas sources which all have ultra-low NOx burners which greatly reduce NOx emission which is a listed Green House Gas (GHG).

The operating practices of NAS also reduce energy consumption by controlling excess oxygen, employing precise process controls, and a high level of preventive maintenance.

NAS uses recycled scrap to produce stainless steel. The type of scrap includes both stainless and carbon, and is a mixture of post-consumer, post-industrial, and home scrap. The recycled content varies per heat and grade of steel. The average recycled content for 2011 has been greater than 90%. Approximately 80% of this scrap is post consumer scrap with the remaining 20% being home scrap. Post-consumer scrap is defined as waste material generated by households or by commercial, industrial, and institutional facilities in their role as end-users of the product which can no longer be used for its intended purpose. However, NAS does not guarantee any specific recycled content per steel grade or heat. NAS's goal is to maximize the quantity of scrap used per heat while maintaining the quality of the steel.

The stainless and carbon scrap are procured from sources in North America. Carbon scrap typically comes within a 100-mile radius of NAS. Stainless steel scrap is procured from many locations in North America (within a 1000-mile radius of NAS).

All equipment at NAS has been installed since 1992 and much has been subject to Prevention of Significant Deterioration (PSD) review for emission control that meets or exceeds Best Available Control Technology (BACT) by US EPA (and has established new BACT in many cases). By installing this better control technology, a larger portion of the particulate waste streams are able to be captured and recycled, while emissions of other pollutants have been significantly reduced.

NAS actively pursues waste minimization, reuse of materials, and recycles many byproducts to reduce our environmental impact. Some byproducts are processed and reused at NAS, while others are sold for use by others. NAS also encourages the use of recycled materials versus virgin materials as energy, water usage, and natural resources are conserved.

The entire process, from the melting to the final flat and long product are located on 1,400 acres of land and consolidated on one site. This reduces the energy usage to ship from a mini-mill to a rolling or finishing facility. Our facility is located such that we are able to use barge and rail for raw material (scrap, alloys, etc.) receiving and for shipment of products, further reducing the energy consumption associated with our products.

For the reasons outlined above, I feel confident that NAS uses the most efficient stainless steel production methods in the United States and arguably the world.

Another aspect to consider is the life cycle of stainless steel. Stainless steel has a very long life as a structurally and aesthetically appealing material. This is due to the formation of the Chrome Oxide layer that forms on the surface of the steel (approx. 3 molecules thick) that protects the surface of the material from corrosion. The Chrome Oxide layer is a 'self healing' feature. When scratched new chrome is exposed to the air and the oxygen immediately forms a new chrome oxide layer to protect the material. This results in a material that is longer lasting and more corrosion resistant than carbon steels and other metals.

Stainless Steel is a closed loop or self sustainable material in that stainless is 100% recyclable. It is considered a valuable material at the end of the life cycle providing consumer motivation to ensure the material is directed back into the scrap stream to be recycled. This conserves natural resources further reducing energy consumption in the mining and refining process of the valuable elemental components (such as Iron, Nickel, Chrome, etc.).

If you have any questions please do not hesitate to contact me or your NAS Sales Representative at 502-347-6000, or via our website.

Sincerely,



Maria Eichelberger
Environmental Manager
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