American Iron and Steel Institute

Steel Recycling Institute

Radio Frequency Identification (RFID) Tags
Copper Content Detrimental to Recycling
April 2006

The steel industry observes that RFID tags are being considered for universal usage on steel packaging units (drums, cans, and other vessels) and for the myriad of durable steel products in commerce, ranging from subassemblies and parts within automobile and appliance units, to the vast array of structural members and other construction products for buildings and societal infrastructure. Given the advance of such RFID technology into the marketplace, the steel industry supports only those RFID tags, which use aluminum as the antenna component. Such aluminum-based RDIF tags, when present on steel components being recycled as end-of-life scrap, will have no discernable effect on furnace operations or steel chemistry and quality.
At the very high temperatures of steel making, any incidental scrap aluminum from such tags would be consumed in an exothermic reaction.

Conversely, RFID tags with copper as the antenna component would be devastating for steel recycling and the steel industry. Copper-based RFID tags in the aggregate would quickly and adversely change the chemical and structural properties of new steel and also negate its use for future recycling consumption as end-of-life scrap. Excess copper contamination in the melt causes new steel to be either softened or embrittled, making it unusable for its intended purpose. This effect is cumulative and irreversible. Massive influxes of new "virgin" iron units from nature might be used to help dilute the deleterious effects of copper in steel-making but this is not an option due to the immense expense and associated environmental challenges. There is no mythical Philosopher's Stone or modern economically viable chemical process that readily removes copper once it is alloyed within steel. The steel industry therefore cites the dire effects of cumulative copper contamination and calls upon all government and business entities to reject the development and use of copper-based RFID tags on any and all steel products.

For further information, please contact Chip Foley at 202.452.7177.