Sherwin Alumina to discontinue operations at Gregory plant

According to the sources close to Sherwin Alumina, the company is contemplating closure of operations at its Gregory plant. The company had filed for Chapter 11 bankruptcy protection earlier this year and had undergone an auction that landed alumina refinery business in the hands of Glencore owned Corpus Christi Alumina (CCA).

Sherwin Alumina plans to sell the assets of CCA to address $95 million in debt. The transition to closure, hence, is an orderly wind-down of operations, a strategy adopted by the company to pay off debts in the market.

The company has also been negotiating with labour unions for more than a year and a half now. Union spokespersons have stuck to their demand of a return to work.

Sherwin Alumina in its latest release issued pointed out that a recent bankruptcy filing by Noranda Alumina and the subsequent rejection of a contract to purchase bauxite from the Gregory plant has played a significant role in its decision to halt operations.

"We are extremely grateful to all of our hard-working, talented employees for over 60 years of dedicated service to Sherwin, and saddened at the way our company's story has to end. Throughout this period of uncertainty our employees have continued to impress, performing their jobs with professionalism. Sherwin was able to establish itself as an economic pillar of the Corpus Christi region for so many years," wrote Thomas Russell, President and Chief Executive Officer of Sherwin Alumina.

The alumina refinery in Gregory opened in 1953. It has been a hub for incoming bauxite ore and outgoing refined alumina, which is used as the prime raw material for aluminium smelting. Over the decades, the plant expanded significantly and was acquired by the multinational company Glencore in 2007.

Researchers explore use of Aluminium Alloys in Metal 3D printing

3D printing with metal is something that is quickly picking up as a process in a number of manufacturing units by major metal producers. 3D printing with metal is used extensively in production facilities by Alcoa and GE. Development and functionality of a range of metal alloys especially aluminium is at top priority for discussion and exploration considering the strength and power metal 3D printing can offer to products.

A group of researchers at Michigan Tech Open Sustainability Technology (MOST) Lab recently started working on a project to explore the potential of using aluminium alloys in 3D printing. The recently published research paper 'Structure Property Relationships of Common Aluminium Weld Alloys Utilized as Feedstock for GMAW-based 3D Metal Printing' explores how microstructures and properties relate to each other in 3D printing.

The researchers claim that metal 3D printing is now being used to make various components in jet engines and medical implants as well as fuel nozzles for jet engines. The research team explains that compared to the inexpensive use of polymers, metal 3D printing is now used in the industrial sector with equipment that can cost above $500,000. The paper focuses on gas metal arc welding (GMAW) technology, which they think is open to many more usage, and allows for much of 'traditional welding literature' to be used in GMAW-based metal 3D printing.

"3D printing via GMAW most closely resembles single-layer, multi-pass welding, also known as multi-run welding. This type of welding process reheats previously welded material, thus altering the grain structure, which can improve weld mechanical properties such as ductility while reducing residual stress," state the researchers in their paper.

The researchers focused on aluminium alloys in order to develop new materials resulting in new processes and products. The team tested aluminium weld filler in terms of tensile, compressive, and microstructural properties. They tested the following aluminium alloys: ER1100, ER4043, ER4943, ER4047, Er5356.

Using an open-source GMAW-based metal 3D printer, the research team found that the 4000 series is superior to both 1100 and 5356 in the following ways: Printed bead width, Porosity, Strength, Defect sensitivity.

The research paper will open up more avenues for the study of metal 3D printing with their open-source GMAW technology and offer useful information for their peers and engineers in manufacturing new components with new materials and technology. The experiments have been successful in concluding that aluminium and especially the 4000 alloy could be considered equal and in most cases superior to other materials for 3D printing technology.

This section is a compilation from various company press releases, business dailies & trade publications