

Technical Article Series

Fabricator Finds Flux Recycling Reaps Rewards

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The Forge/Fabricating Shop of Algoma Steel Corp., Sault St. Marie, Ontario, has saved nearly \$100,000 by having its flux recycled. In the fiercely competitive world of steel production, Algoma finds it has to cut costs and maintain quality wherever possible.

One way it is able to accomplish this goal is by sending slag generated during submerged arc welding to Titus Steel's Welding Fluxes Div. for fused flux recovery.

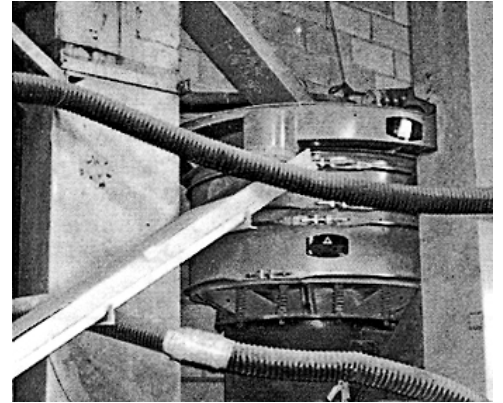
Titus recovers the flux by a process involving crushing, grinding, magnetic separation, and sizing with a vibrating screen. Initial inspection of the slag is necessary to remove debris such as cigarette butts and cups. Air filters snag the dust and debris while a drum magnet captures magnetic material.

A horizontal belt and vertical elevator then convey the flux to a set of rollers and crushers and into a 48 inch diameter VIBROSCREEN® vibrating screen separator made by the Kason Corp. Stainless steel screens are used to withstand the abrasive slag, which has a size range from 30 mesh to 80 mesh and a hardness of 4 to 6 on the Mohs scale. Slag enters the separator at rates ranging from 1000 to 2,200 pounds per hour, according to W. Usatis, president of Titus. Oversized material from the separator is recirculated for additional roll grinding.

On the vibrator, a 14 mesh, 16 mesh or 18 mesh screen is used for the top screen, depending on the customer's requirements. The screens are easily changed, allowing Titus to return flux with exactly the same size particles that the customer would get if he had ordered virgin flux.

Out of every 100 pounds of scrap flux, Titus reclaims 85 pounds and returns it for use at half the cost of the new flux. Using x-ray spectrography, it was determined that the chemical composition of the recycled flux isn't significantly different than that of new flux.

Screen Tips - Volume 4, Number 2 Summer 1989



VIBROSCREEN® separator at Titus Steel's Welding Fluxes Division.