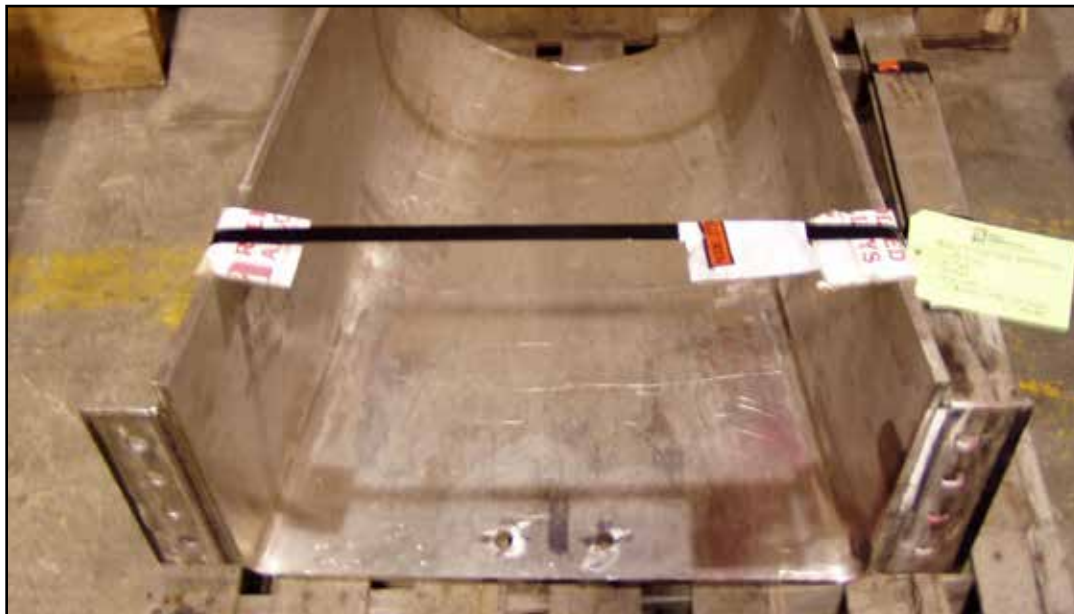


RA 602 CA® Proven Superior to other Heat Resistant Alloys for Steel Mill AOD Chute



Specifications

UNS: N06025 W. Nr./EN: 2.4633 ASTM: B 168, B 166 ASME: SB-168, SB-166, Code Case 2359

Chemical Composition, %

	Cr	Ni	Cu	P	S	Fe	C	Al	Ti	Y	Zr	Si	Mn
MIN	24.0	—	—	—	—	8.0	0.15	1.8	0.1	0.05	0.01	—	—
MAX	26.0	Balance	0.1	0.02	0.01	11.0	0.25	2.4	0.2	0.12	0.1	0.5	0.15

Case History

RA 602 CA has proven to be the alloy of choice for the Argon Oxygen Decarburization (AOD) Chute at a steel mill. RA 602 CA AOD chutes, fabricated by Alloy Engineering, Berea, OH, lasted at least four weeks longer than prior AOD chutes fabricated of HAYNES® 230®, RA309, and RA 353 MA®.

The AOD chutes are fabricated from ½ inch plate, weigh over 250 pounds and have approximate dimensions of two feet in width, one foot in height, and three feet in length. The AOD chute is used to add alloying elements to 400 series stainless steels being melted in an AOD vessel. The molten steel can reach temperatures as high as 2750°F. The AOD chute lies in close proximity to the molten metal and the AOD chute can approach the melting temperature of most nickel alloys.

Type 309 stainless was used for this application for many years. The short life led the mill maintenance group to investigate alloys that could increase the life of the component. Several alloys had been tried prior to RA 602 CA including HAYNES 230 and RA 353 MA. RA 602 CA has been found to provide the greatest longevity.

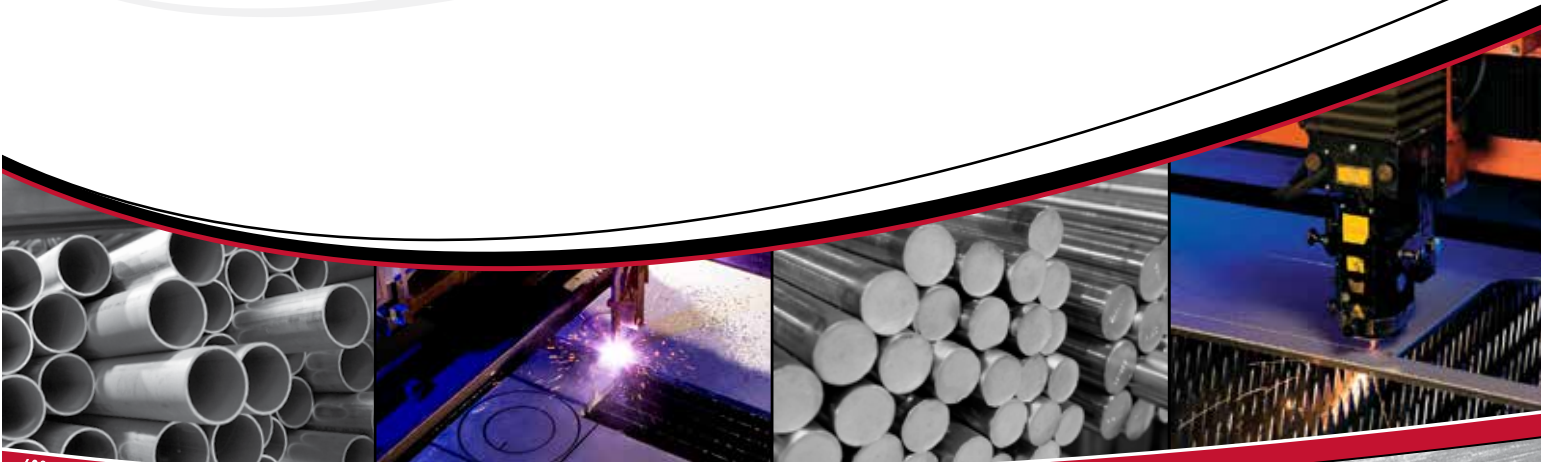


Case History, Continued

The picture above shows the RA 602 CA AOD chute after removed from a service life of 16 weeks. Small cracks down the edges of the sidewalls and minor deformation of the walls were the only evidence of failure and reason for removal from service.

The second picture to the above right (Figure 2) shows the failed HAYNES 230 alloy AOD chute after 12 weeks of service. This AOD chute had numerous wall cracks along the entire wall. Also a large section at the hot end of the chute had broken off during service. This made the AOD chute unusable for future service. These results were also typical for the RA 353 MA and RA309 AOD chutes as well. Alloy Engineering has made some design modifications to the chutes recently. The photo on the previous page shows a new RA 602 CA chute with a radiused end. This new design has further improved the life of the chutes.

RA 602 CA is carried in inventory by Rolled Alloys in plate, sheet, and round bar products. Matching welding consumables are also available from Rolled Alloys in MIG, TIG, and covered electrodes. For more information on the RA 602 CA alloy, contact Rolled Alloys and ask for Bulletin 1602.



602 CA Alloy is a registered trademark of ThyssenKrupp VDM, RA and RA330 are registered trademarks of Rolled Alloys



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