

## RA 602 CA® Alloy Tubes selected by Syracuse Heat Treat for Their Super Allcase® Furnace Upgrade Exceed 6 years in Service



### 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

Syracuse Heat Treating Corporation, a commercial heat treater, located in Syracuse, NY, selected RA 602 CA alloy as the material of construction for two Trident® radiant tubes. These tubes replaced the original tubes constructed from type HU castings.

The tubes were installed in their Super Allcase® furnace in November 2002. As of June 2007 these tubes were reported to be in excellent condition. Both tubes are still in service and show little distortion. One minor repair weld was required on one of the tubes during its lifetime, while the other tube has been maintenance free. Three additional RA 602 CA tubes were fabricated in 2005 to replace cast tubes in other furnaces. Typical operating temperatures in the furnace range from 1550-1650°F with a carbon potential of 0.95 to 1.0.

Cast HU tubes were originally used, but were not preferred due to the difficulties associated with their installation and removal. The thicker walled castings (¼ inch) are much heavier than wrought tubes made of 11 gage (0.120 in.) sheet material. A typical RA 602 CA fabricated tube weighs roughly 165 pounds compared to 350 to 400 lbs for a ¼ inch cast tube.



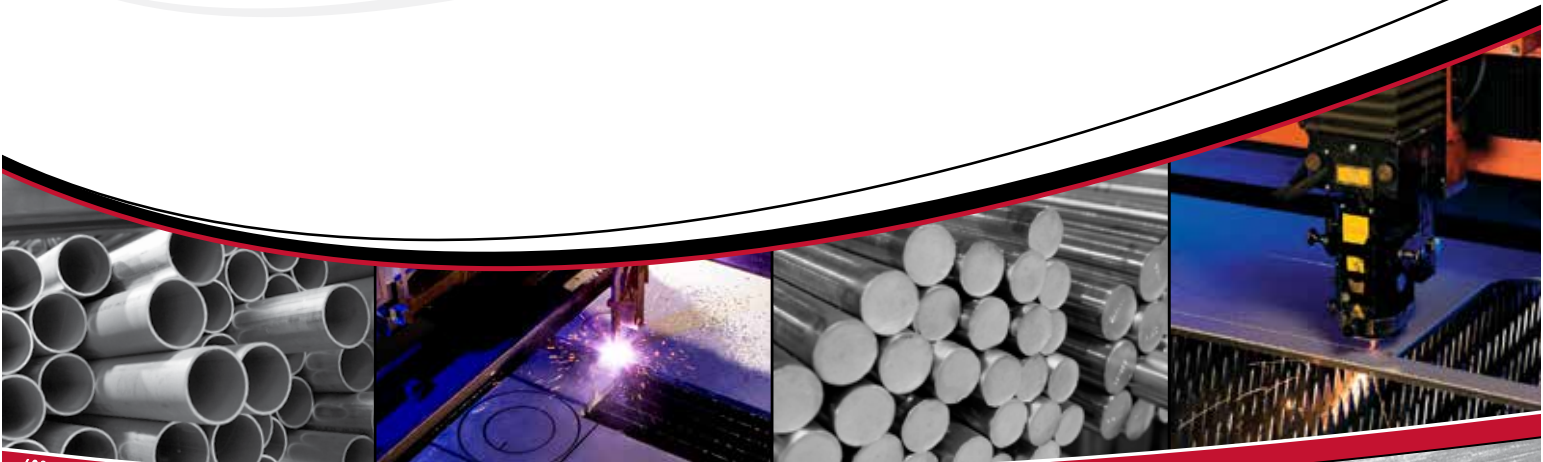
RA 602 CA Tubes - Taken after 1 year in service at Euclid Heat Treat

### Case History, Continued

The 6" diameter tubes were rolled and welded out of the 0.120 inch RA 602 CA sheet material using similar setups as other nickel based heat resistant alloys. All seam welds were made using matching 0.045" diameter RA 602 CA spooled MIG wire, also supplied by Rolled Alloys. The return bends were press formed from 0.120 inch RA 602 CA sheet.

Syracuse Heat Treat has subsequently added three more RA 602 CA tubes to date. Additionally, two RA 602 CA Trident tubes are also in test at Euclid Heat Treat in Euclid, OH. These tubes have surpassed 4 years in service.

For more information on the RA 602 CA alloy contact Rolled Alloys and ask for bulletins 1027 and 1602.



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