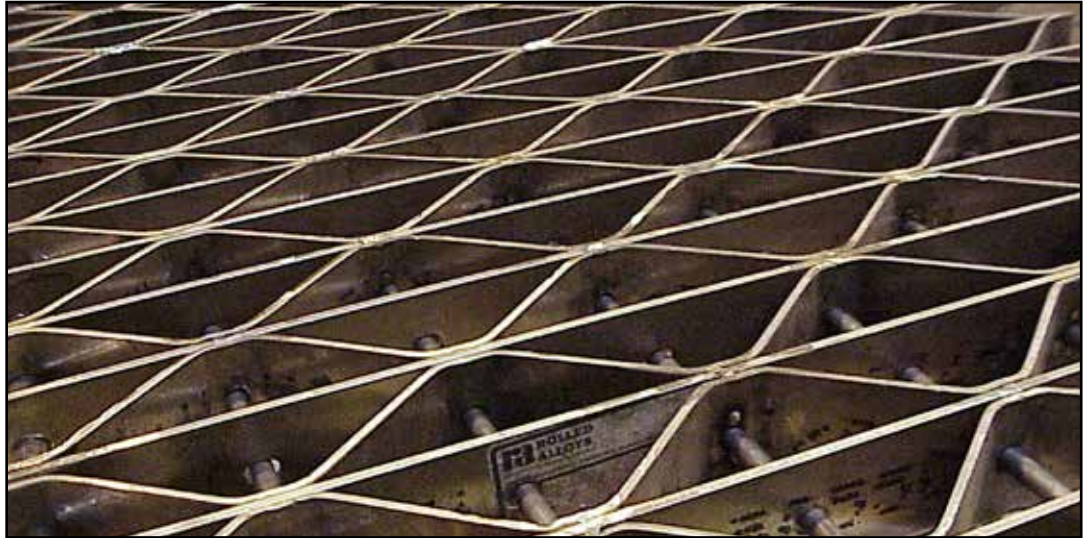


RA 602 CA Alloy Serpentine Grid Surpasses 2000 cycles in Severe Vacuum Service



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

After more than 2000 cycles, RA 602 CA is still in use at a captive heat treat shop in the southeastern United States. This is quite an accomplishment since the grid is required to support loads weighing as much as 2000 lbs at temperatures reaching 2260°F.

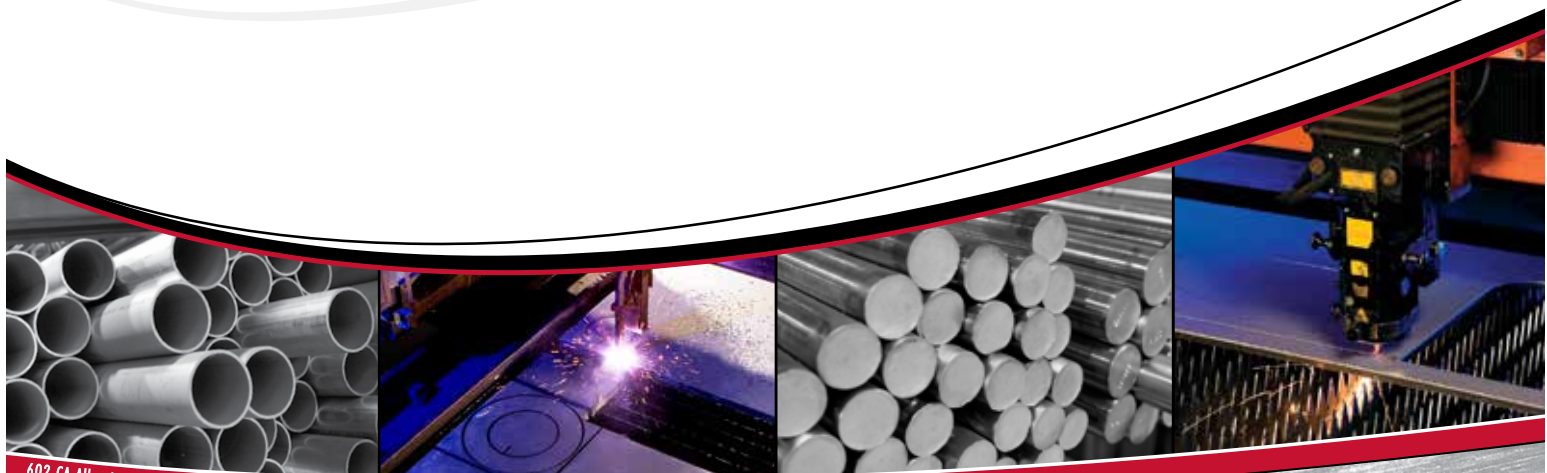
Traditionally, lighter duty trays have been made of RA330® alloy. In order to vacuum heat treat some large nickel superalloy castings, a heavier duty tray design was necessary. The tray was designed to carry loads from 700-2000 lb. inside the furnace during heat treatment in the 2175-2260°F range followed by up to a 6 bar nitrogen quench. RA 602 CA was selected for its superior high temperature strength, which kept the tray as light as possible. Lower fixture weight allows for faster heating and cooling and reduced energy consumption.

The tray design utilized 3/16" inch thick flat bars of RA 602 CA alloy. The dimensions of the tray were 36" by 54". After 18 months of operation and 1200 cycles, no cracking was observed, however, some distortion is evident. A follow up was done on this application 11 months later. The tray continues to be used and has surpassed 2000 cycles without needing replacement.



Case History, Continued

RA 602 CA alloy is a 62Ni-25Cr-2.2Al-Y-Zr-Ti alloy. RA 602 CA offers superior strength and oxidation resistance to most heat resistant alloys. RA 602 CA is now stocked by Rolled Alloys in plate, sheet, round bar, and welding consumables. A full data sheet (Bulletin 1602) on RA 602 CA is available by request from Rolled Alloys or can be downloaded at the www.rolledalloys.com website.



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