

## ZERON® 100 Chosen for FGD Guillotine Dampers at Texas Based Power Plant



### Specifications

**UNS:** S32760 **W. Nr./EN:** 1.4501 **ASTM:** A 182 (Grade F55), A 240, A 276, A 314, A 473, A 479, A 789, A 790, A 815, A 890, A 928, A 988, A 995, EN 10028-7, EN 10088-2, EN 10088-3, EN 10272, EN 10216-5, EN 10217-7  
**ASME:** B16.5, B16.34, B16.47, B31.3, Section VIII Division 1 Case 2244-2, 2245-1, Section III Division 1 Case N-564-2, SA-240, SA-182 (Grade F55), SA-479, SA-815, SA-789, SA-790 **NACE:** ISO 15156 / MRO175 Part 3 **API:** 5LC **BSI:** PD 5500 - Enquiry Case 5500/87

### Chemical Composition, %

	Ni	Cr	Mo	Mn	Cu	Si	C	N	S	P	W	Fe
MIN	6.0	24.0	3.0	—	0.5	—	—	0.2	—	—	0.5	—
MAX	8.0	26.0	4.0	1.0	1.0	1.0	0.03	0.3	0.01	0.03	1.0	balance

### Case History

ZERON 100 Super Duplex Stainless Steel was chosen as the material of construction for three guillotine dampers fabricated by Wahlco Metroflex using nearly 60,000 pounds of plate, sheet, round bar, and ZERON 100X welding consumables. Plate thicknesses ranging from 3/16-in. (0.1875-in.) up to 3/8-in. (0.375-in.) were formed and welded together to fabricate the dampers. The guillotine dampers will be installed in the outlet ducting at a Texas power plant to control the flue gas flow from the FGD absorbers. At this stage in the process, the flue gas is relatively cool and when it contacts the alloy damper, acids condense. As a result, an alloy resistant to sulfuric acid and chloride attack was required.

Wahlco Metroflex, located in Lewiston, ME, services many industries with its engineering and manufacturing expertise. The Wahlco Metroflex families of products are in service around the world in power plants, refineries, chemical plants, pulp & paper mills, steel mills, incinerators and combustion and hot gas systems of many kinds. Wahlco Metroflex was officially formed in 2001, however, their technology and expertise goes back over 50 years. Wahlco Metroflex continues to be a leader in controlling and isolating gas flows and supplying related duct systems around the world.



### Case History, Continued

The Texas based power plant had specified that super duplex stainless steel be used for the guillotine dampers for their plant, however, a specific alloy was not chosen. Rolled Alloys® worked with both Wahlco Metroflex and the engineering firm in selecting ZERON 100 super duplex based on its superior availability in all product forms over other super duplex stainless steels. ZERON 100 alloy was a new material to Wahlco Metroflex. Rolled Alloys worked with them to ensure they could form and weld the material. Sample plate coupons and weld wire were provided to familiarize them with the alloy before making the final decision to use the ZERON 100 for this project.

ZERON 100 is a 7-percent nickel, 25-percent chromium 3.6-percent molybdenum super duplex stainless steel with additions of tungsten and copper for added corrosion resistance to various acids and other corrosive environments. With its low alloy content, ZERON 100 could be considered an alternate to other alloys such as C-276, 6% Moly Alloys, and other high nickel bearing alloys. ZERON 100 could be considered as an alternate to these alloys in other applications such as absorber vessels, slurry pumps, agitators and piping, as well as ductwork and other areas of the unit that are subjected to the corrosive environment inside an FGD. ZERON 100 has also been used extensively in the oil and gas, power generation, seawater desalination, chemical processing, and other industrial applications around the world.

Rolled Alloys stocks the ZERON 100 super duplex stainless steel in plate, sheet, round bar, pipe, fittings, flanges, and ZERON 100X welding consumables in their US based facilities. Rolled Alloys has facilities located in Michigan, Ohio, Connecticut, Illinois, Oklahoma, South Carolina, Texas, and California.



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