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up (↑) and Nickel prices
are down (↓) for
April deliveries.

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Ultrasonic Examination In Place of Radiographic Examination

Certificate Holders may not fully understand the requirements for properly applying Ultrasonic Examination (UT) in lieu of required Radiographic Examination (RT) as permitted by Section I and Section VIII, Division 1 and 2. For all three code books, the permitted ultrasonic examinations are restricted to Time of Flight Diffraction (TOFD) (a pair of ultrasonic probes sits on opposite sides of a weld. One of the probes, the transmitter, emits an ultrasonic pulse that is picked up by the probe on the other side, the receiver. In undamaged pipes, the signal picked up by the receiver probe are from two waves: one that travels along the surface and one that reflects off the far wall. When a crack is present, there is a diffraction of the ultrasonic wave from the tip(s) of the crack. Using the measured time of flight of the pulse, the depth of a crack tips can be calculated automatically by simple trigonometry.) and **Phased Array (PAUT) (the probe consist of many small ultrasonic transducers, each of which can be pulsed independently. By varying the timing, for instance by pulsing the elements one by one in sequence along a row, a pattern of constructive interference is set up that results in a beam at a set angle. In other words, the beam can be focused and steered electronically. The beam is swept like a search light through the tissue being examined, and the data from**

Multiple beams are put together to make a visual image showing a slice through the object.) with computer based data acquisition and analysis abilities using automatic or semi-automatic equipment that is mechanically mounted and guided on the examination surface. Manual straight beam UT, manual angle beam UT and manual Phased Array are not permitted as substitute techniques when using UT in place of required RT.

Section VIII Div 1 & 2. Section VIII Division 1 & 2 permit UT in lieu of the required RT, Section VIII Division 1, UW-51(a)(4) states that this UT must meet the requirements of Section VIII Division 2, paragraph 7.5.5 As a result, a Certificate Holder performing UT as permitted in UW-51(a)(4), needs to have access to a Section I Division 2 code book. UW-51(a)(4) further references Section V, Article 4, Mandatory Appendix VIII, which utilizes fracture mechanical based acceptance criteria in conjunction with Mandatory Appendix IX. Mandatory Appendix VIII, paragraph VIII-431 requires that UT examination must be performed, "using a system employing automated or semi-automated scanning with computer based data acquisition and analysis

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abilities". Semi-Automated and automated were defined above. There are some specific allowances in Section VIII Division 1 to use manual UT in accordance with Mandatory Appendix 12, such as for the final closure seam examination. Section VIII Division 2, paragraph 7.5.4 also permits manual UT examinations on Type 7, and 8 joints in some instances. These allowances for using manual UT should NOT be confused with the requirements for using UT in lieu of RT.

NON FERROUS SURCHARGE CHART

Stainless prices are up (↑) and Nickel prices are down (↓) for June deliveries. Remember, this chart is for surcharge only, it does not include the base price for materials.

Alloy	Jan	Feb	March	April	May	June	July	Aug	Sept
2205	0.3715	0.385	0.3714	0.3787	0.3964	0.4615			
304 CLAD	0.1723	0.1752	0.1689	0.1771	0.3367	0.3603			
304/304L	0.3352	0.3321	0.3195	0.3315	0.3433	0.3668			
304H	0.3352	0.3321	0.3195	0.3315	0.3433	0.3668			
304LN	0.3352	0.3321	0.3195	0.3315	0.3343	0.3668			
304N	0.3352	0.3321	0.3195	0.3315	0.3343	0.3668			
309/309S/309H	0.4592	0.451	0.4334	0.4518	0.4596	0.4891			
310/310S	0.6373	0.6208	0.5963	0.6278	0.6303	0.6712			
316/316L	0.4112	0.4155	0.4003	0.419	0.4333	0.4918			
316LN	0.4112	0.4155	0.4003	0.419	0.4333	0.4918			
316Ti	0.4267	0.4303	0.4146	0.4341	0.4477	0.5069			
317/317L	0.4724	0.4801	0.4628	0.4834	0.4982	0.5737			
347	0.6186	0.6145	0.6012	0.6157	0.6269	0.6521			
AL-6XN Plus	0.9877	0.9569	0.7962	0.7521	0.7456	0.7111			
alloy 20	1.2687	1.3089	1.0928	0.9979	0.9648	0.9287			
AL-200 TM	2.5184	2.7585	2.1593	1.8684	1.7556	1.6621			
Al-400 TM	1.8595	2.014	1.5694	1.357	1.2601	1.2208			
Al-600 Tm	2.0577	2.2246	1.7855	1.5694	1.4859	1.4144			
Altemp 625	3.733	3.7687	3.4028	3.2682	3.2249	3.155			
Alloy 276	2.9592	2.9126	2.5444	2.4467	2.4246	2.3485			



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