(23) T-451 COARSE GRAIN MATERIALS

Ultrasonic examinations of high alloy steels and high nickel alloy weld deposits and dissimilar metal welds between carbon steels and high alloy steels and high nickel alloys are usually more difficult than ferritic weld examinations. For the purposes of this paragraph, *high alloy steel* is defined as all stainless steels and any other alloy steel in which the sum of all elements, other than iron, exceeds 10% of its weight. Difficulties with ultrasonic examinations can be caused by an inherent coarse-grained and/or a directionally-oriented structure, which can cause marked variations in attenuation, reflection, and refraction at grain boundaries and velocity changes within the grains. It is necessary to modify and/or supplement the provisions of this Article in accordance with T-150(a) when examining such welds in these materials. Additional items, which are required, are weld mockups with reference reflectors in the weld deposit and single or dual element search units producing refracted longitudinal waves.