3.2.3 Mechanical Tubing

Hot or cold finished, solution heat treated, and descaled.

3.2.4 Stock for Forging, Flash Welded Rings, or Heading

As ordered by the forging, flash welded ring, or heading manufacturer.

3.3 Solution Heat Treatment

3.3.1 Bars, wire, forgings, flash welded rings, and extrusions shall be solution heat treated in accordance with AMS2761 by heating to 1900 °F ± 25 °F (1038 °C ± 14 °C), holding at heat for a time commensurate with section thickness, heating equipment, and procedure used, and cooling as required to below 90 °F (32 °C).

3.3.2 Flash welded rings may be given a homogenization heat treatment prior to solution heat treatment when permitted by purchaser. When such treatment is permitted, the rings shall be heated to 2100 °F ± 25 °F (1149 °C ± 14 °C), held at heat for not less than 90 minutes, and cooled at a rate equivalent to, or faster than, an air cool.

3.4 Properties

The product shall conform to the following requirements; tensile and hardness testing shall be performed in accordance with ASTM A370:

3.4.1 Macrostructure

Visual examination of transverse sections etched in hot hydrochloric acid in accordance with ASTM E340 shall show no pipe or cracks. Porosity, segregation, inclusions, and other imperfections may be specified by macrostructure standards established by the cognizant engineering organization.

3.4.2 Microstructure

The product shall contain no more than 5% ferrite, determined in accordance with AMS2315.

3.4.3 Mechanical Properties

3.4.3.1 As Solution Heat Treated

Hardness shall conform to Table 2.

3.4.3.2 Response to Precipitation Heat Treatment

Samples from solution heat treated product up to 8.0 inches (203 mm) in diameter or least distance between parallel sides, precipitation heat treated to a particular condition in accordance with the corresponding temperatures and times shown in Table 2, and cooled in air, shall have the properties shown in Table 2 for that particular condition. Tensile tests and hardness tests shall be performed in the H900 precipitation heat treated condition, unless purchaser specifies another heat treated condition.

3.4.3.2.1 Mechanical property requirements for product outside of the range covered by 1.1 shall be agreed upon between purchaser and producer and reported per 4.4.7.