(c) have a record, maintained and certified by the manufacturer or assembler, containing objective evidence of the qualifications of the CI and the training program provided

**PG-73.7.2 Duties of the Certified Individual (CI).**

The CI shall

(a) verify that each item to which the Certification Mark with the “V” Designator is applied has a current capacity certification and meets all applicable requirements of this Section

(b) review documentation for each lot of items to be stamped to verify, for the lot, that requirements of this Section have been completed

(c) sign the Certificate of Conformance, Form P-8, prior to release of control of the pressure relief valves

**PG-73.7.3 Certificate of Conformance, Form P-8.**

(a) The Certificate of Conformance, Form P-8, shall be filled out by the manufacturer or assembler and signed by the Certified Individual. Multiple duplicate pressure relief valves may be recorded as a single entry, provided the valves are identical and are produced in the same lot.

(b) The manufacturer’s or assembler’s written quality assurance program shall ensure that each lot of items to be stamped has met all applicable requirements for fabrication in the Parts of this Section that pertain to the methods of construction used.

**PG-76 CUTTING PLATES AND OTHER STOCK**

**PG-76.1 Plates may be cut by machining, punching, shearing, or cutting by the electric arc or gas process, providing enough metal is left at any unfinished edges to meet the requirements of PG-79.**

**PG-76.2** When end faces of nozzle or manhole necks are to remain unwelded in the completed vessel, these end faces shall not be cut by shearing unless at least 1/8 in. (3 mm) of additional metal is removed by any method that will produce a smooth finish.

**PG-77 PLATE IDENTIFICATION**

**PG-77.1** When the boiler is completed, there shall remain visible on shell plates, furnace sheets, and heads, one group of the plate manufacturer’s stamps, consisting of the manufacturer’s name, plate identification number, material specification number with grade, class, and type as appropriate, except that heads containing tube holes and buttstraps shall have visible at least a sufficient portion of such stamps for identification.

**PG-77.2** It is permissible for an authorized representative of the boiler manufacturer to transfer the markings on the plate provided a record is made of such transfer. In lieu of the above and PG-77.1, identification may be by applying a coded marking traceable to the original required markings or by recording the required markings using methods such as material tabulations or as built illustration which ensure identification of each piece of material during fabrication and subsequent identification in the completed boiler. Such transfers of markings shall be made prior to cutting, except that the Manufacturer may transfer markings immediately after cutting, provided the control of these transfers is described in the written Quality Control System (A-301 and A-302). The procedure for making such transfer shall be acceptable to the Authorized Inspector.

**PG-77.3** An authorized representative of the plate manufacturer may duplicate the required stamping on any material wherever located.

**PG-77.4** When plate specification heat treatments are not performed by the mill, they shall be performed by or under the control of the fabricator, who shall then place the letters “MT” following the letter “G” in the mill plate marking (see SA-20) to indicate that the material specification heat treatments have been performed. The fabricator shall also show by a supplement to the appropriate Mill Test Report that the specified heat treatment has been performed.

**PG-78 REPAIRS OF DEFECTS IN MATERIALS**

Defects in material may be repaired by the boiler manufacturer provided acceptance by the Inspector is first obtained for the method and extent of repairs. Material that cannot be satisfactorily repaired shall be rejected.

**PG-79 TUBE HOLES AND ENDS**

Tube holes shall be drilled full size from the solid plate, or they may be punched at least 1/8 in. (13 mm) smaller in diameter than full size, and then drilled, reamed, or finished full size with a rotating cutter. The thermal- or plasma-arc cut holes, when made, shall be sufficiently smaller in diameter than full size, such that subsequent machining to full size shall completely remove all metal whose mechanical and metallurgical properties have been affected as a result of the thermal- or plasma-arc cutting. Tube holes may be counterbored where the metal is thicker than that required to get a proper bearing by expanding, so as to form narrow seats into which the tube ends can be properly expanded, provided there is space available to permit a proper amount of flare of the tube end.

The sharp edges of tube holes shall be taken off on both sides of the plate with a file or other tool.
acceptance value shall be 75 ft-lbf [100 J] minimum for each test specimen and the lateral expansion in mils [micrometers] shall be reported.

12.1.5 Test Temperature—The test temperature shall be as specified in the purchase order, except that the manufacturer or processor shall have the option of using a lower test temperature. If a test temperature is not specified in the purchase order, tests shall be conducted at a temperature no higher than is given in Table A1.15 [A2.15] for the applicable product specification, grade, class, and plate thickness. The actual test temperature used shall be reported with the test results.

12.1.6 Acceptance Criteria—Unless otherwise agreed upon, the acceptance criteria shall be as given in Table A1.15 [A2.15] for the applicable product specification, grade, class, and plate thickness.

12.1.6.1 If the acceptance criteria is based upon energy absorption of a full-size specimen, the acceptance criteria for the various subsize specimens shall be as given in Table A1.16 [A2.16], except as otherwise provided in 12.1.4.1.

12.1.6.2 If the acceptance criterion is based upon lateral expansion opposite the notch, the acceptance value shall be the same for all sizes of test specimens.

12.1.7 Marking—The letters “LTV” shall be stenciled or stamped on each plate following the class number, grade, etc.

12.1.8 Variability—The impact properties of steel can vary within the same plate-as-rolled or piece, be it as-rolled, control-rolled, or heat-treated. The purchaser should, therefore, be aware that testing of one plate-as-rolled does not provide assurance that all locations within a plate-as-rolled will be identical in toughness with the location tested. Normalizing or quenching and tempering the product will reduce the degree of variation.

12.1.8.1 Appendix X3 provides additional information on the variability of Charpy V-notch test properties in plates for pressure vessels.

12.2 Drop-Weight Tests:

12.2.1 Where specified, one drop-weight test, consisting of a set of two test specimens, shall be made to the same frequency stated in 12.1.1 in accordance with Method E208.

12.2.2 The test coupons shall be obtained adjacent to a tension test coupon. For plates produced from coil, the test coupon locations shall be the same as for Charpy V-notch tests. (See 12.1.) The provisions of 12.1.3 shall also apply.

12.2.3 The testing temperature shall be as specified in the applicable product specification or the purchase order.

12.2.4 Acceptance shall be based on the basis of no-break performance of both test specimens at the specified testing temperature.

12.2.5 The plates shall be marked as required in 12.1.7, except that the letters “LTD” shall be used instead of “LTV.”

13. Identification of Plates

13.1 Required Markings:

13.1.1 Except as allowed by 13.4, plates shall be legibly marked with the following information: applicable ASTM designation (see 1.1) (year of issue not required); “G” or “MT” if applicable (see 13.1.2); applicable grade, type, and class; heat number; plate identifier; and name, brand, or trademark of the manufacturer (for plates produced in discrete cut lengths of flat product) or the processor (for plates produced from coil and for subdivided plates (see 13.4)).

13.1.2 Plates that are required to be heat treated, but have not been so heat treated, shall be marked, by the manufacturer or processor, with the letter “G” (denoting green) following the required ASTM designation mark, except that “G” marking is not necessary if such plates are for shipment, for the purpose of obtaining the required heat treatment, to an organization under the manufacturer’s control. Plates that are required to be heat treated, and have been so heat treated, shall be marked, by the party that performed the heat treatment, with the letters “MT” (denoting material treated) following the required ASTM designation mark.

Note 2—Any stress relief of test specimens intended to simulate post-weld heat treatment is not included in the above heat treatment.

13.2 Types of Markings:

13.2.1 Except as allowed by 13.4, the required markings for plates over ½ in. [6 mm] in thickness shall be by steel die stamping, unless paint marking is specified in the purchase order.

13.2.2 Except as allowed by 13.4, the required markings for plates ¼ in. [6 mm] and under in thickness shall be by paint marking or by steel die stamping using low-stress (either round-nose or interrupted-dot) impressions.

13.3 Location of Markings:

13.3.1 Except as allowed by 13.4, the required markings for plates with a maximum lengthwise or crosswise dimension more than 72 in. [1800 mm] shall be in at least two places on each finished plate, at least 12 in. [300 mm] from the edges of the plate.

13.3.2 Except as allowed by 13.4, the required markings for plates with a maximum lengthwise and crosswise dimension of 72 in. [1800 mm] or less shall be in at least one place on each finished plate, approximately midway between the center and an edge of the plate.

13.4 Subdivided Plates:

13.4.1 By agreement between the purchaser and the manufacturer or processor, each subdivided plate (a plate separated from a master plate) shall be legibly marked with the name, brand, or trademark of the organization that subdivided the plate plus a code traceable to the required markings, provided that the information required in 13.1, cross referenced to that code, is furnished with the plates.

13.4.2 By agreement between the purchaser and the manufacturer or processor, subdivided plates that are from the same master plate and placed in secured lifts shall have the information required in 13.1 paint marked on the top piece of each lift or shown on a substantial tag attached to each lift.

13.5 Bar Coding—In addition to the requirements of 13.1 to 13.4 inclusive, the manufacturer or processor shall have the option of using bar coding as a supplementary identification method.

Note 3—Bar coding should be consistent with AIAG Standard B1.

14. Permissible Variations in Dimensions or Mass

14.1 One cubic foot of rolled steel shall be assumed to weigh 490 lb, unless otherwise stated in the applicable product