4.5.6 Embrittlement relief test for steel parts (see 3.3.3).

4.5.6.1 Preproduction process qualification test for embrittlement (destructive tests). Four round notched steel specimens, with the axis of the specimen (load direction) perpendicular to the short transverse grain flow direction shall be selected from four individual heats (total of sixteen specimens). These specimens shall be prepared using the specific steel alloy for which preproduction qualification of the process is to be demonstrated. They shall be heat treated to the maximum tensile strength range representing production usage. The configuration shall be in accordance with figure 8 of ASTM E 8 for round specimens. Specimens shall have a 60-degree V-notch located approximately at the center of the gage length. The cross section area at the root of the Vee shall be approximately equal to half the area of the full cross section of the specimen's reduced section. The Vee shall have a 0.0100 inch (0.25 mm) $\pm$ 0.0005 inch (0.013 mm) radius of curvature at the base of the notch. The specimens shall be given the same pretreatments, electroplating and post plating treatments in accordance with the process proposed for production. The specimens shall be subjected to a sustained tensile load equal to 75 percent of the ultimate notch tensile strength of the unplated material for a minimum of 200 hours (see 6.2.1). The process shall be considered satisfactory if all specimens show no indication of cracks or failure. The test results and process control information shall be submitted to the procuring activity for approval. Until approval has been received, parts shall not be plated.