10 Qualification of welding procedures

10.2 Limitation of variables, (See Table 3 of CSA W47.2)

When welding aluminum in GMAW (MIG), GTAW (TIG) or PAW process, any following changes require re-qualification of welding procedure, by welding test (PQR):

- a change of base-metals alloy group (Note 1), filler-metals alloy group (Note 2 and 3), position, thickness, shielding gas, current type, cleaning procedure,

- a change in specified joint geometry (e.g., from single-V to double-V), omission of back gouging, omission of backing or substitution of backing to other than aluminum material,

- a change from vertical up to down or vice versa, change of current, voltage, preheat, travel speed, etc. over what are permitted in Table 3 of CSA W47.2 require re-qualification of WPDS procedure.

**Note 1:** Base-Metal Group numbers (1 thru 5) with metal alloys for each group are shown in Table 1 of CSA W47.2

**Note 2:** Filler metal alloy groups 1 (5183, 5356, 5554, 5556, 5654), 2 (4043, 4047, 4145) or 3 (1100) are shown in Table 2 of CSA W47.2

**Note 3:** Filler metals shall be certified by the CWB to the requirements of ANSI/AWS A5.10 (Clause 10.2.2 of CSA W47.2).

10.3 Position of test welds

10.3.1: Qualification of a joint in any one of the horizontal, vertical, or overhead positions shall qualify that joint in the flat position.

10.6.1.3 Acceptance of a PJP groove weld based on CJP groove weld test (PQR) of the same metal thickness range and the same welding position in which PJP groove weld is made.

**CJP:** Complete joint penetration groove weld

**PJP:** Partial joint penetration groove weld