



Nye Manufacturing Ltd.

3585 Mavis Road Mississauga, ON Canada L5C 1T7
905 897 2311 Fax: 2312 nye.ca sales@nye.ca



Custom Attachments for Heavy Equipment, Welding Repairs and Alterations

General Welding Procedures

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Most Nye products are made from QT100 (T1 Structural) and AR400 (T1 Abrasion Resistant) Quenched & Tempered steel plate. This extra strong heat-treated alloy steel is heat sensitive and must be treated properly during welding to prevent any unwanted hardening, softening or embrittlement due to hydrogen contamination.

Non heat-treated materials like Mild Steel, 33MAX, and 44W do not require pre-heating, but will not be harmed by it. When in doubt about the type of steel, assume it is Quenched & Tempered and follow these procedures:

- The area to be welded must be completely clean and free from hydrogen sources: dirt, rust, paint, grease and moisture. (Hydrogen contamination is the leading cause of HAZ cracking.)
- Use a temperature indicating crayon or suitable instrument for monitoring material temperature.
- If gouging is required, preheat area to be gouged to 100°C [200°F].
- Completely gouge out all traces of cracked material. (Gouge right through if necessary)
- Grind out all traces of carbon and slag.
- Preheat area to be welded to 150°C [300°F]. (Use welding blankets to keep the heat in)
- Do not allow inter-pass temperature to exceed 260°C [500°F] or fall below 120°C [250°F].
- To prevent hydrogen contamination, only use fresh new electrodes taken from a sealed bag.
- Use several “stringer” beads as opposed to a few wide beads.
- Blend gusset or bracket end welds smoothly into the base plate they are welded to by grinding. Avoid sharp changes in material thickness, taper-off and blend-in welds as opposed to running the welds out past the end of a gusset or perpendicular plate.
- After welding, cover with welding blankets and allow the material to cool slowly in still air.

Suitable (approved) electrodes:

SMAW - Stick Electrodes:

- For all repairs use: E48018 [E7018]

FCAW – Flux Core Wire

- For basic repairs use: AWS A5.20 CSA W48.5 E70T-1 (ESAB Dual Shield R-70 Ultra)
- For heavy Q&T sections use: AWS A5.20 CSA W48.5-M E70T-5 (Hobart FabCO85)

For more information, contact Nye technical support. Call 905 897 2311 or Click: nye.ca