



MEETING & SEMINAR

UPdate

Volume 5

Canadian Welding Association Hamilton Chapter

March 4, 2009

Please plan to attend our next seminar

Wednesday March 4, 2009

Holiday Inn Conference Centre located at 3063 South Service Road, Burlington.

Attitude adjustment: 5:30 p.m. Dinner: 6:00 (Sharp) Seminar 7:00 pm

Dinner Tickets for this meeting are \$35.00 per person

You **must** reserve Dinner Tickets. Call Al Lundrigan (905) 979-0285

Please reserve your Dinner Tickets
by contacting Al Lundrigan
(905) 979-0285
by Friday February 27, 2009

Topic

“Welding Advanced High Strength Automotive Steels”

By Elliot Biro.

Elliot Biro graduated from Mechanical Engineering at the University of Waterloo where took the welding specialization. He stayed at UW to do graduate work investigating laser welding of thin sheet for electronics industry. After graduating in 2002 he took a position at Dofasco in the Research Department investigating customer and production welding issues on sheet steels. He is currently a research leader with ArcelorMittal Dofasco Research.

With increased regulatory pressures on the automotive industry to both improve fuel

economy and vehicle safety, automotive companies are turning to the families of advanced high strength steels to design many structural parts. As these materials are stronger than conventional automotive steels they allow designers to down-gauge parts to save weight while retaining overall part strength. However, these steels get their strength from the martensite and austenite within their structure, which break-down as heat is applied during welding, so the adoption of these new material create new issues that must be addressed during vehicle assembly and after-market repair.

“Help keep our mail list up to date”

If your e-mail has changed let us know. If you know someone who used to get these updates and doesn't anymore, get their e-mail to us. cwa_publicity@cogeco.ca

Wednesday April 1/2009

Topic: **Industry Education Forum**

By: “”

Contact any Hamilton Chapter Board Member for Tickets.

Note! You must reserve in advance



“Weld Faults and Causes”

Undercut can occur at any stage of the welding process, for example:

- Root undercut in a single Vee Butt Weld without back welding (Fig. 15).
- Undercut of the sidewall of a welding groove at the edge of a layer or bead must fuse (Fig. 16).
- Reduction in base metal thickness at the line where the last bead is fused to the surface (Fig. 17 – external undercut).

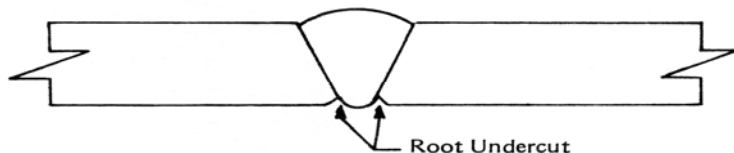


Fig. 15

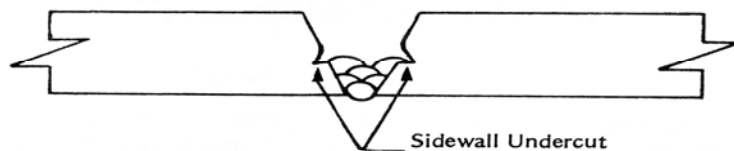
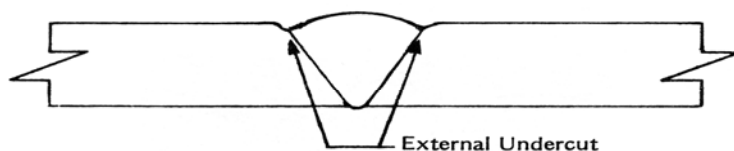


Fig. 16



Undercutting of the side walls of a groove does not affect the completed weld if sufficient care is taken to correct the condition before depositing the next bead. Failure to correct the condition may lead to slag being trapped in the cavity during the welding of the next pass. Surface undercutting, both internal and external, should be corrected. However, some construction codes and standards allow limited amounts of undercut to remain in the weld. For example, CSA Standard W59 paragraph 5.9.5 and AWS D1.1-80 paragraph 9.25.1.5, state that undercut shall not be more than 0.010 inch (0.25mm) deep when the weld is transverse to the primary stress in the part that is undercut. They further state that undercut shall be no more than 1/32” (0.8mm) deep when the weld is parallel to the primary stress in part that is undercut.

Reprinted from CWB Module #10, Weld Faults and Causes - Page11

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