



# CWA UpDate



Canadian Welding Association | Association canadienne de soudage

Issue 4- February 7<sup>th</sup> (2017/2018 season)

Hamilton and Region Chapter

**Please plan to attend our next seminar**

Wednesday February 7, 2018

**Holiday Inn Burlington Hotel & Conference Centre**

Located at 3063 South Service Road, Burlington. Attitude adjustment: 5:30 p.m. Dinner: 6:00 (Sharp) Seminar 7:00 pm Dinner entrance fees for this meeting are: \$20 for students, \$35.00 (members and \$40 for non-members

Note: "First year" basic membership is free (*at present*)

You **must** reserve for Dinner.

## Topic

### Advancements in Automated Weld Grounding

By: **Bob Bosworth**

Efficient secondary weld grounding has long been plagued by an absence of facts. Welding technology continues to develop and relies greatly on the application of a ground to complete the welding circuit, plus many machines now require electrical feedback making an inconsistent ground connection an invisible culprit in many welding issues. This course will review the essential elements required to make your grounding as predictable as possible in both automation and manual application. Equipment selection, surface inconsistencies, location and other variables will be explored.

Bob began his apprenticeship in boiler & jobbing shops in Brantford, Ont. in 1980. By 1986 he earned his Certificate of Apprenticeship as a Fitter/Welder, Certificate of Qualification as a Structural Steel Plate Fitter, and most currently the Metal Fabricator certification. Over the past 30+ years he has worked in many aspects of welding from being a ticketed pressure vessel welder and welding inspector, to the welding of speciality metals such as tool steel, copper alloys, tin & lead (Babbitt), and many of the thermal spray welding processes. His experience includes decades of high production automotive technical development, support and training in MIG/MAG, GTAW (Production & Maintenance), Resistance & Projection Welding, and Solid-State Bonding. Bob also taught the Metal Fabricator Apprenticeship programs at Mohawk College for 20 years part-time.



Next meeting: Wednesday March 7/2018  
Topic: Metallurgical Inspection of Explosive Welding.

By Kusay Rafo

Contact any Hamilton Chapter Board Member  
for Tickets.

**Note! You must reserve in advance**

Please register  
by contacting **Franco Piccoli**  
(905) 317-6543

by Friday February 2, 2018

Alternate Contact:

Don Hutt (905) 548-7200 (ext.3079)

*Basic Inspection Technology*

As X or Gamma radiation is directed at the weld a certain amount will be absorbed by the structure of the metal and the remainder will pass through, onto a film which is placed into position. The amount of radiation absorption depends upon the material type and thickness; each material (steel, aluminum, copper, etc.) having a different coefficient of absorption.

When a weld has internal discontinuities such as slag or gas holes, more radiation will reach the film under these areas than in an adjacent area which has no discontinuities and is therefore absorbing more radiation. In this manner differential amounts of radiation reach the film and react on the sensitized emulsion in varying degrees. These differences in radiation absorption through a defective weld appear on the developed film as shadows and are interpreted by the shape and density as to what they represent. (Slag, porosity, gas holes, etc.)

When a defect in a weld does not constitute a relatively substantial difference in the total cross section of the weld, the difference of radiation absorption will be less and therefore the image on the film will not be pronounced. With certain defects such as tight cracks, cold lap, lack of side wall fusion etc., there is a strong likelihood that no discernable image will appear on the film. Where the beam of radiation is not directed into the plane of defect, Fig. 5, the defect can be completely missed.

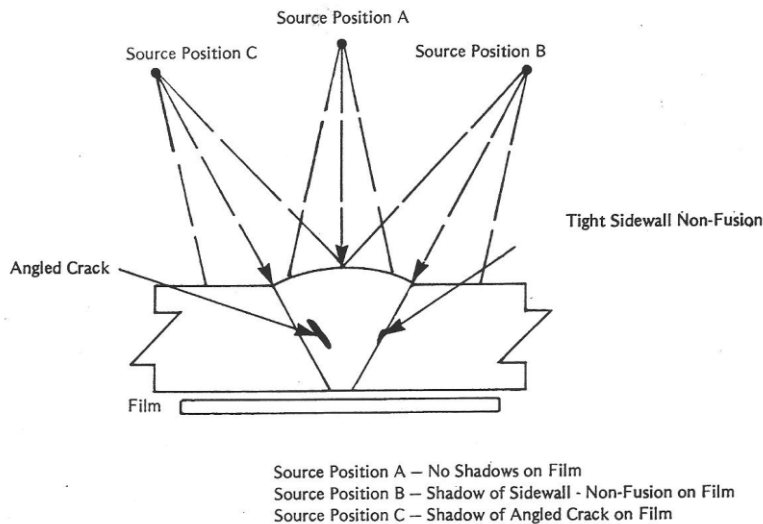


Fig. 5

(for more information see page 11 CWB module 11 “*Basic Inspection Technology*”)

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How to contact us  
 Canadian Welding  
 Association  
 Administration Office  
 8260 Park Hill Drive  
 Milton, ON L9T-5V7

Toll Free  
 1-800-844-6790,  
 ext. 256  
 Fax: 905-542-1318  
 E-Mail:  
 Hamilton@cwa-acis.org  
 Web site:  
[www.cwa-acis.org](http://www.cwa-acis.org)

Former Chair: **Don Gemmell** Niagara College (905) 735-2211 (7371)  
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 Lawson Products Inc-Cronatron/Certanium Divisions (905) 317-6543  
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