Registration Form:

Name:
Title:
Company:
Address:
City:
State: Zip:
Phone:
Email:
Fax:
Date of Seminar:
Visa/MasterCard:
Card #:
Expiration Date: Code:
Signature:
Purchase Order #:
Check #:
Shirt Size:

2018 Dates:
March 27-29 (Traverse City Northwestern Michigan College)
April 10-12 (Swedesboro, NJ)
July 17-19 (Traverse City Northwestern Michigan College)
October 2-4 (Appleton, WI)

Fee: $495 first attendee ($100 for additional attendees from the same company)

Appleton Hotel Accomodations Needed? ☐ Yes ☐ No

Appleton Check In Date _____ Appleton Check Out Date _____

Cancellations: Cancellations will be accepted and refunds made up to 14 days prior to the seminar date. Make non-refundable airline reservations at your own risk.

Direct Payment to:
Miller Training Systems
Miller Electric Mfg. Co.
P.O. Box 1079
Appleton, WI 54912
Fax 920-735-4101

Email inquiries or Registration:
peggy.moehn@MillerWelds.com

Fee Covers: Coffee and doughnuts available in the lecture room at 7:30 a.m. lunch provided each day.

Provided Materials: Guide for Aluminum Welding, safety glasses, use of a welding helmet and personal safety equipment.

Seminar Hours: 8:00 a.m. - 5:00 a.m. each day

Accommodations: Reserved by participant in a common location.

Transportation: Participants should make arrangements for transportation to and from the hotel. Shuttle service may or may not be provided by the hotel.

High-quality filler metals and specially designed equipment are two key factors in gaining the results you need when welding aluminum. Knowing the techniques to make successful aluminum welds, as well as proper welding procedures, weld preparation, troubleshooting and more are also critical. Together, Miller Electric Mfg. Co. and Hobart Brothers Company provide the training you need through seminars that include hands-on welding and informative instruction on aluminum welding technology.

- **Industry Trends and Applications**
- **Codes and Standards**
- **Metallurgy**
- **Weld Preparation**
- **Welding Processes and Procedures**
- **Design and Performance**
- **Filler Metal Selection**
- **Weld Discontinuities - Cause and Correction**
- **Weld lab, welding procedures, fillet welds and groove welds, welding inspection and testing**

23 Professional Development Hours can be used for AWS Re-certification.

HOBART® FILLER METALS

3 Day Advanced Aluminum Welding & Design Seminar

Course Overview:

To provide professionals, active in the design and fabrication of aluminum structures, educational support in the areas of welding technology associated with designing and welding of aluminum structures. This will include a detailed evaluation of the many aluminum alloys, their characteristics and applications, metallurgical considerations, welding procedure development, welding processes, weld design, weld discontinuities, trouble shooting welding problems and quality control.

Course Outline - Theory

Take away every usable **FACT** about welding aluminum

Introduction:
Industry trends
Characteristics of aluminum
Applications
Hobart's guide for aluminum
Welding brochure

Codes and Standards:
Review of AA and AWS publications
Alloy and temper designation system

Metallurgy:
History of aluminum production
Alloy system characteristics of element additions
Effect of alloying elements on structure
Weld bead, fusion zone and heat affected zone

Weld Preparation:
Metal storage considerations
Dew point calculations
Cutting, thermal and mechanical
Cleaning techniques

Welding Processes and Procedures:

GMAW (MIG) Welding
Feedability
Polarity/arc cleaning
Metal transfer modes
Power sources

GTAW (TIG) Welding
Polarity
Square Wave AC
Inverter Technology
Tungsten electrode selection

Design & Performance:
Corrosion types and performance
Elevated temperature performance
Strength performance/tensile and shear
Weld joint design
Toughness/elasticity/ductility
Fatigue performance
Post anodize color matching

Filler Metal Selection:
Weld Metal properties
How to use the Hobart filler metal selection chart
Case studies

Weld Discontinuities - Cause & Correction:
Weld cracking
Porosity
Inadequate fusion and penetration

AWS/D1.2 Structural Welding Code Aluminum
Structural design
Procedural qualification
Performance qualification
Fabrication and inspection

Course Outline - Practical

Experience the practical **FEEL** of a successful aluminum weld

Welding Procedures:
Safety procedures
WPS preparation
Sample preparation
Pre-weld inspection
Welding machine set up

Fillet Welds & Groove Welds:
Select base and filler metal
Prepare and clean base metal
Review and select equipment settings

Welding, Testing & Inspection:
- Create weldments
- Record settings, practice and produce samples
- Visually inspect weldments
- Perform a fillet weld fracture test inspection
- Perform a fillet weld macroetch specimen inspection
- Perform a groove weld guided bend test (Root and face bends)
- Evaluation of radiographics (X-ray) inspection