Towards Zero Defects in Welding Applications

Date: 21 - 22 June 2018 @ Chinchwad, PUNE

Industry 4.0 is the current trend in manufacturing world over. Welding, being an essential and important part of any sector of economy, it is also getting ‘intelligenceised’ by Virtual Reality, Internet of Things, Quantum Computing, Artificial Intelligence, Additive manufacturing, Cobots etc. Welding fraternity, therefore, is also addressing the needs and implication of Welding 4.0 environment in the immediate future, in which nothing is certain.

The modern fast and automated manufacturing Technology required in these Mass-manufacturing industries, involves Welding processes such as Resistance Spot, Seam, Projection and Butt Welding, MIG/MAG Welding, FCAW, Laser Cutting & Welding, Fricion Welding and Friction Stir Welding. In spite of the high end and technology the quality inconsistency, especially in the Arc Welding Family, arising due to distortion and welding defects is still a major issue every welding Engineer faces.

Means of transport - be it road, rail, air or water – all of them necessarily depend on welding technology for their manufacturing. The same goes for the consumer durable & white goods industry. The quality needs of various welded products and their components are vital for the producers to maintain the A-class level of metal consistency and consequent durability of the integrated final product. In contrast to mass-manufacturing, there are other sectors where quality at any cost is the criterion, but they still need to be competitive at the same time.

As per ISO:9001-2015, Continual Improvement by Process Control is necessary, implying Quality is not a destination, but a never-ending journey. Keeping this in view, Indian Machine Tool Manufacturers’ Association (IMTMA) is organizing 2 day programme on Towards Zero Defects in Welding Applications on 21 - 22 June 2018 at Pune. This will help the practicing engineers in developing full technical understanding of the subject and solve manufacturing issues related to welding processes.

FOCUS AREAS

• A perspective on what is Zero Defects in Welding – Man, Machine, Method
• Towards understanding the need to account for the Science of Welding
• Important Material Properties which directly interact with these Processes - they dictate the process parameters
• Overview of Welding Technology to logically comprehend given processes
• Welding Arc as a Heating Source – know the Physics for correct application
• Evolution of various Arc Welding Processes
• Snap shot of various Arc Processes – SMAW, SAW, ESW, GTA, PLASMA
• MIG/MAG CO2 Process: Equipment, Power Sources, Controls, Productivity
• Fillet issues in MIG / MAG, Defects, and Distortion in Arc Welding
• The six Resistance Welding Processes : Commonalities & Basics
• Resistance Spot, Seam and Sheet Projection Welding Process
• Solid Projection, Uppset Butt and Flat Fitch Welding Processes
• Friction and Fricion Stir Welding
• Laser Processing: Cutting, Heat Treating and Welding
• Electron Beam, Ultrasonic, CD and Arc Stud processes
• Other solid state welding processes
• Safety, Maintenance, Productivity in Welding

Proceedings will be delivered through a PowerPoint presentation and welding support videos. A set of Video Clips for reference and revision.

Key Take Aways

After undergoing the programme, the participants will be able to -

1. Clearly understand the mechanism of weld formation - the basic for all the welding done - to be able to correlate the dynamics of the various processes;
2. Convincingly choose the welding process for given applications on relative merits;
3. Develop the ability to analyze and solve the day to day problems more effectively and quickly;
4. Plan for the consistency of the quality levels while meeting the production targets by understanding the important seven(7) engineering disciplines in action in a time;
5. Plan and run their DoE trials, as and when needed, more effectively and economically by choosing the right parameters – the attributes;
6. Finally understand and grasp the whole picture – a common platform - to preempt and avoid the time consuming interdepartmental meetings for problem solving and/or conflict resolution.

Participant Profile

The programme will benefit Managers, Engineers, Designers and Middle Management personnel involved in the functions of Design & Development, Manufacturing, Welding Quality assurance and other related functions from automotive & auto ancillaries, White Goods and consumer durable manufacturing, General Engineering, Defence and Railway establishments, etc. in order to gain a better understanding of welding technology and the implications of zero defects in welding applications.

Faculty

This programme will be conducted by Mr. Vijay S. Awag. He is an industry expert with over 40 years of experience in the field of welding activities related to research, development, equipment manufacturing, quality control, control and training. He is a qualified Welding Professional and a free-lance consultant for in-house group companies and many industries in Auto sector for training and problem solving. He has also given his services as a Regional Director (West) to Indian Institute of Welding and Research for promoting the Welding Education among users, and ISO Certification of Industries and Individuals.

The programme will be highly interactive where participants can solicit guidance on specific technical issues from the expert Faculty

REGISTRATION:

Prior registration for participation is necessary. Number of participants is limited and will be accepted on First Come First Serve basis. Registration will close 10 days before the commencement of the programme.

Important Information:

Participants have to include, course material, working lunch and 2 cups of coffee. Interested companies are requested to register online by clicking on ‘REGISTER’ button and by mailing us the names, numbers & email addresses of participants in specific format.

FEE:

- The registered fee can be paid online by visiting ‘Register and Pay online’ button and selecting the desired IHTC payment gateway. Upon successful registration and payment, a separate registration and payment confirmation will be sent to the concerned participant(s) to confirm the registration and payment details.
- A Demand Draft of Rs. 7500/- (Rs. 8500/- inclusive of 18% GST per participant) or a bank transfer to

  A/C No: 125, D-1 Block, MICO, Chinchwad, Pune-411019
  Name: IMTMA
  IFSC Code: ICICIB000125
  Branch: Chinchwad, Pune

  Please mention the purpose of the payment as ‘Towards Zero Defects in Welding Applications’

- For bulk participation (3 to 5 participants), an additional 10% for 3 to 5 and 20% for 6 and more participants is applicable.

- Last date for registration: 14 June 2018

Participating Companies

- Ador Welding
- Bosch, Dalt and Samir Engg.
- Demag Cranes and Components, IFB Automotive
- Bajaj Auto, Goodrich Aerospace
- Wipro Digital, ELGI equipments, etc.

Contact Address

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Participating Companies

The program was immensely beneficial to the participants as the topics covered by faculty have deeper insights in welding technology especially the often ignored metallurgical aspect.

- Mr. Sanchit P Agrawal, Bajaj Auto Limited

It was a knowledgeable session for me. Trainer gave lot of examples to help understand the technical things more clearly.

- Mr. Reuben Deshmukh, Mechelonic Engineers Pvt. Ltd.

Industries Participated

The previous programmes have been well received by delegates from Ador Welding, Bosch, Dalt and Samir Engg., Demag Cranes and Components, IFB Automotive, Bajaj Auto, Goodrich Aerospace, Wipro Digital, ELGI equipments, etc.