2-Day Technical Skills Training (MS04)

″Sheet Metal Surface & Thickness Strains Analysis″

Your Workshop Leader

William Lee

Technical Training Expert

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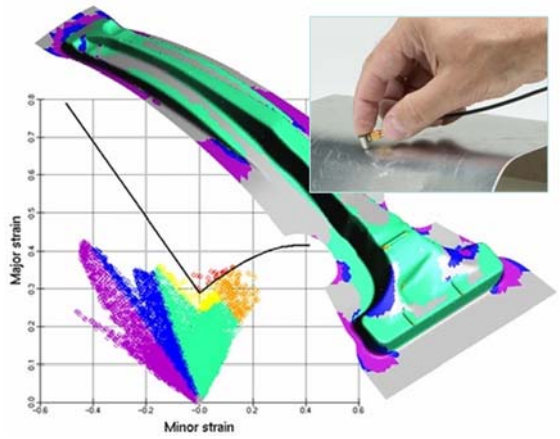
Course Objective:

The objective of this patented MIS program is to raise technical competency of technical employees from local manufacturing industry for product quality & productivity improvement through understanding of vital manufacturing variables. At the end of the MIS training, participants will realize the importance of technical details study & the introduction of science & engineering procedures to their existing practices for a profitable manufacturing operation.

Session Overview:

Formability problems such as cracks, necking, wrinkles, loose metal, and surface defects may be caused by product design. Other causes can be the result of poor processing methods, poor die design and maintenance procedures, improper lubrication, nonconforming sheet material, and other typical underlying factors. In order to solve some of these problems in a more effective manner, we need to take corrective action based on part data rather than just guessing.

Surface strain using circle grid analysis and thickness strain analysis are practical methods of measuring the forming severity of a formed part in a scientific way. It not only can help solve issues such as splitting, but it also can serve as a tool to let you know how far the part is from failing. This 2-day informative technical training will teach the use of advanced formability assessment techniques (CGA & TSA) in order to solve the root cause of a stamping problem, how to procure basic visual data, and then proceed to derive more finite data and comparing the metal's forming limit by using forming limit diagram for building a robust working window for profitable sheet metal forming.



Course Content:

1. **Fundamentals of Surface Strain Analysis**
   - Stress-Strain and Deformation Modes.
   - Procedures for Circle Grid Analysis.
   - Major and Minor Strain Calculation.
   - Stress-Strain Diagram.
2. **Fundamentals of Thickness Strain Analysis**
   - Establishing Thickness Strain.
   - Calculating Thickness Strain.
3. **Forming Limit Diagrams (FLD)**
   - Establishing Forming Limit Diagrams.
   - Determining Forming Limit Curves.
   - FLD based on Surface Strain.
   - FLD based on Thickness Strain.
4. **Data Analysis and Results**
   - Interpreting Data & Projecting Defects.
   - Results and Limitations.
   - Finding Forming Working Window.

Benefits:

1. Understand the stress-strain relationship during sheet metal forming.
2. Learn how to perform surface strain and thickness strain analysis.
3. Study limitations and guidelines for the use of CGA and thinning measurements.
4. Apply scientific technique to establish sheet metal working window.

Target Participants:

This course is recommended for those who want to improve formed parts quality & productivity. Technical employees from sheet metal forming industry such as stamping plant managers, R&D personnel and product designers, tooling supervisors, tooling and quality engineers, and tool and die makers are encouraged to attend.

Course Instructor

William Lee - Malaysian, Materials Engineer with an honorable Bachelor Degree awarded by The Engineering Council of London (EC, UK). He has over 25 years working & teaching experience in manufacturing industry. William possesses strong fundamentals knowledge in technical science & has special talent to communicate and explain to others the principles involved in various engineering fields. His ability to present and link the various engineering disciplines with real industrial use has made many of his course participants to appreciate the significant of technical details study for manufacturing improvement. Over the years, he has developed a series of patented Manufacturing Insights Skills (MIS) Training programs for various manufacturing industries. He is now a full time contract speaker for a few training organizers as well as professional associations in ASEAN & Australia. William will bring a wealth of teaching experience to this program along with his strong industrial background as a former engineering practitioner in tooling, materials, heat treatment, moulding & metal forming divisions. In addition, William is a versatile trilingual instructor who can instruct technical courses in English, Bahasa Malaysia or Mandarin (or a combination of the languages) to ensure full understanding of his presentation by his trainees from all levels.

Administrative Details

1. Should public training not be scheduled for this program we will consider opening an ad hoc public training class if you've minimum guaranteed participants to attend this program.
2. We can bring this program to your premises as in-house training event for your in-house employees only. Interested participating company may contact us for an in-house training proposal.
3. In-house training can be conducted on weekdays or weekends (including public holidays) to meet the scheduling needs of your targeted staff.
4. For in-house training, a list of participants complete with their full name & designation must be presented to training provider one week prior commencement of each program. The total no. of training manual is supplied to the actual no. of turned out attendees only.
5. Substitute is allowed to replace the earlier registered person if he / she is unable to attend the training program (both public and in-house training). Participating company must inform us the details of replacement person.
6. All programs are of SBL (Skim Bantuan Latihan) type. Eligible company (Human Resources Development Fund contributor) must apply through themselves for the rebate of any eligible expenses (including training fees) from Human Resources Development Council. Training provider bears no responsibility for the approval of training grants or any form of rebates between participating company and HRDC.

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