

Product Code: **ME02**

Manufacturing
Improvement
Training Program

2-day Technical Training Course

Program: MANUFACTURING INSIGHTS SKILLS (MIS)

Session Topic: Steel & Its Heat Treatment

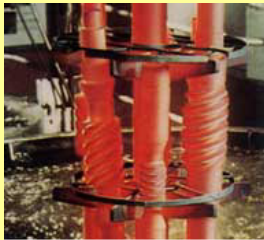
By: William K.W. Lee

SBL TRAINING PROGRAM



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.

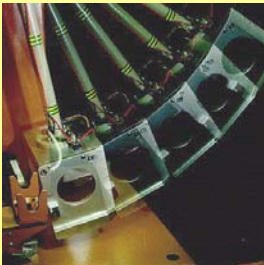


Session Overview

This course is designed to provide a practical approach on how to evaluate and attain quality heat-treating result for ferrous metals (carbon steel and alloy steel). The program will provide more detailed coverage on various heat-treating problems associated with poor heat-treated parts. This program will teach course participants one of the very important industry skills on how to achieve and ensure good quality heat treating job. It is design to make participants familiar with the heat treatment principles, processes, common heat treatment failures, solutions to overcome it and terminology of hardening process. Participants will learn many of the basic fundamental metallurgical aspect of hardening and the various effects brought about by heat treating on the properties of steels including the benefits and limitations for parts performance.



Also included in this course are the various techniques used to examine common heat treated properties such as hardness, strength, grain size, toughness, distortion, stress and constituents of heat treated microstructure. Those involved in practical heat-treating as well as buyers or users for heat-treated service shall be able to improve technical knowledge in the heat treatment of metals and alloys.



Benefits

1. Study heat-treated parts problems and its measuring techniques.
2. Understand key factors and fundamentals to attain quality result for various heat-treating processes.
3. Learn how to measure and control heat-treating variables.
4. Gain an overview of good manufacturing practice & management for heat treatment workshop.



Course Contents

- 1. The principle of Hardening:** The WHAT, WHEN & HOW of steel heat treating. Guidelines on achieving quality heat treating.
- 2. Industrial Heat Treating:** Types of Heat Treatment Processes & Its Purposes.
- 3. Problems Associated with Heat Treated Parts:** Material Factors; Heat Treating Practice.
- 4. Inspection Techniques for Heat Treated Parts:** Mechanical Tests; Microstructure examinations; Non-Destructive Tests.



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.

Target Participants

The program is intended for the entire spectrum of personnel either directly or indirectly associated with heat treatment. This includes design and manufacturing engineers, plant managers, supervisors, metallurgists, quality control inspectors, mould, tool & die makers, heat treaters, purchasers, sales and marketing personnel as well as those who concerned the performance & quality of heat-treated parts.

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.



Organized by:

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◆ Developing K-Workers; Promoting Scientific Manufacturing ◆