

Product Code:
PE05

Manufacturing
Improvement
Training
Program

2-day Technical Training Course

Program: MANUFACTURING INSIGHTS SKILLS (MIS)

Session Topic: Tooling Properties, Testing & Control

By: William 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

Tooling performance is influenced by the materials properties. The study of tooling properties, testing methods & its control has become in recent years an integral part of tooling design, manufacturing quality and productivity improvement program. Proper tooling material selection based on their nature and properties that anticipate material weaknesses – proper materials engineering, can prevent most tool failures. Hundreds of properties are tested & measured in workshop & laboratories for the purpose of comparing materials. The buyer must decide the properties required of a tooling material. It is the purpose of this course to define the tooling properties, what are the contributing factors to enhance its achievability, how to test, measure, control & how they apply to the application; and what properties are desirable to combat various failures such as dimensional & shape changes, cracking, corrosion and wear problems. Participants will learn how to specify "*required properties*" and how to control "*actual properties*" from the 2 most common tooling materials (tool steels & cemented carbide) and to present guidelines to assist the engineering practitioners in selecting the right property for a given job.

Benefits

1. Familiarization with the properties that must be reviewed when making material selection.
2. Acquire knowledge of how properties apply to different industrial applications & failure modes.
3. An understanding of the various testing & measuring techniques in performing property tests and in using property data.
4. A thorough understanding of the differences among the properties of chemical, mechanical and physical.
5. Gain technical information on the use of coatings & surface finishing for surface properties improvement & modification.

Course Content

1. Tooling Properties & Failure Modes

Physical properties; mechanical properties; technological properties; deformation; abrasive wear; adhesive wear; crack; creep; fatigue; stress raisers; residual stress.

2. Tooling Tests & Techniques

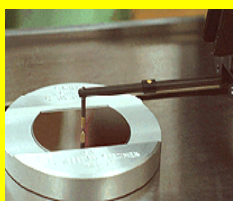
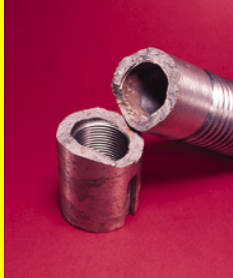
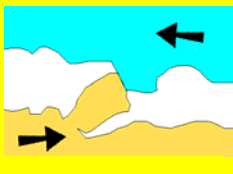
Material confirmation test; hardness test; hardenability test; wear resistance test; tension test; impact test; fatigue test; corrosion test; metallography test.

3. Tooling Properties & Their Applications

Properties selection for cutting; shearing; forming; molding; drawing; extrusion; rolling; battering action.

4. Surface Properties Modification & Control

Mechanical surface modification; metal alloy build up; phase change hardening; alloy diffusion hardening; waviness; roughness and lay control.



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

Participating companies can be from tooling users or buyers such as manufacturing and tools & dies and precision engineering industry. Target audience can be those involved in activities related to tooling, parts or products manufacturing such as technical group personnel, production managers, supervisors, tooling engineers, tool makers, engineering specialists, quality controllers and R&D researchers, designers, machinists, technicians and heat treaters.

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:

METALLOY CONSULTANT SERVICES PLT

(Registered Training Provider under Ministry of Finance: 357-02128315)

(Registered Training Provider under PSMB: LLP0003449-LGN)

Tel: 03-80751529 Fax: Go Green; Avoid Fax

Email: training@metalloy.com.my Website: www.metalloy.com.my

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