



EVALUATION AND ANALYSIS VARIOUS TYPES OF WELDING IMPERFECTIONS COLLECTED FROM THE INDUSTRIAL FABRICATORS

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ABSTRACT

- The purpose of this project is to evaluate and analyze the welding imperfections that were collected from the welding industries and steel fabricators.
- Welding imperfection may occur due to lack of welding skill and incorrect welding conditions.
- Some of these imperfections are classified as defect or reject.
- The cost of repair can be more expensive than making new.
- Prevention is better and cheaper but the correct knowledge is necessary.
- The samples are analyzed based on the code of practice, by visual inspection, ndt and macro etching test.
- The detailed chart of welding imperfections is published:
 - Description of imperfections
 - Causes and remedies.
 - Macrograph, photograph, radiograph and sketches.

INTRODUCTION

- Welding imperfection is a physical in-homogeneity at the weldment (weld metal, HAZ, base metal).
- Serious imperfection on a weld may lead to product failure, financial loss, property damage, personal injury.
- Imperfection becomes defect or reject when it exceeds the acceptance limit specified in codes or standard.
- Defects can be classified as crack, cavity, solid inclusion, lack of fusion and penetration, imperfect shape and miscellaneous imperfections.
- Crack is a dangerous defect, some can be repaired, some cannot be repaired.

OBJECTIVE

- Objectives of this project are:
 - To collect various types of welding imperfection from the welding industries
 - To analyze the causes of welding imperfection.
 - To propose the corrective remedies for welding imperfection based on the latest knowledge in welding technology
 - To evaluate the samples of welding imperfection by visual, ndt and dt
 - To display the types of welding imperfection / defect in sketch, photograph, radiograph and macrograph.

METHODOLOGY



RESULT

VISUAL					
	Cluster Porosity	Lack Of Penetration	Lack Of Fusion	Underfill	Toe Crack

DISCUSSION / CONCLUSION

- Welding imperfections on display chart is good for educational purpose.
- A wide range of welding imperfections are shown in sketch, photograph, radiograph and macrograph
- The welding imperfection is best learned by repeated observation on many types of samples.