Apprenticeships & Theses

ArcelorMittal

TITLE: DETERMINATION OF OPTIMAL WELDING PARAMETERS ON RECOILING LINE 2

KEY WORDS OF ASSIGNMENT:

- Resistance seam welding
- Parameter determination
- Production software: Weld-It

SUMMER APPRENTICESHIP ☐ MASTER THESIS ☒

WORK/SCHOOL APPRENTICESHIP ☐ PROJECT ☐

CONTENT OF ASSIGNMENT (POSSIBLY ILLUSTRATED WITH PICTURES/DRAWINGS):

Recoiling line 2 is situated at the end of the steel production chain in the cold rolling mill. The recoiling line is used to rework material (oiling, side trimming, inspection, cutting out damaged or non-conforming material, …) coming from previous production lines. The line is equipped with a seam resistance welding machine which has the purpose of welding two plate ends together, for example because a piece of several meters was cut out of a coil due to roll marks. Since material is coming from all different production sections, the welding machine has to be able to weld all kinds of material: different thicknesses, different Zn-coatings, different hardness, … and the line operators have to be able to distinguish an 'OK' weld from a not 'OK' weld. The first scope of this assignment is to link the different welding parameters with the different types of material and to determine the most optimal values to obtain a good weld. In order to help the operators to determine if a weld is OK or not OK, a program (Weld-It) was developed internally which shows a few characteristics of the produced weld (temperature, thickness along the length, …). The second scope of this assignment is to use these characteristics to determine if a weld is OK/NOK without the need of performing an Erichson test.

OBJECTIVES:

- Determination of optimal welding parameters
- Determination of a good weld based on a few measured characteristics (T, thickness, …)

EXPECTED COMPETENCES (KEY WORDS):

✓ Knowledge of welding processes

NUMBER OF STUDENTS:

- 1

TARGET GROUP : BACHELOR/MASTER/ … & SPECIALIZATION(S):

- Bachelors or masters, specialization in welding processes

LOCATION:

- ArcelorMittal Gent: Cold rolling mill / annealing and shipment – recoiling line 2 (KGV – OWB2)

PROMOTORS:

- Industrial : Bob Tytgat and Lieve Vandenberghe
- Academic : ??

FIRST CONTACT:

- Sofie De Croock: stages@arcerlormittal.com or 09/347.42.16
- To check the availability of this master thesis, please mail to stages@arcelormittal.com