LabNotebook

Bijan Varjavand

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1 Introduction

This day our group cold rolled all of our samples. We then took dimensional measurements on our samples.

1.1 Goals

The goal was to generate data about the effects of cold rolling on different materials.

2 Purpose

Cold rolling is a common materials science processing step, and understanding of it will give students a deeper understanding of the field.

3 Setup

The samples were prepared beforehand as rectangular prisms. The entire group took 2 vices and hacksaws to an external shop that had a cold rolling machine.

3.1 Materials

1018 Steel annealed, 6061 Al annealed.

3.2 Tools

Cold rolling machine, calipers, hacksaw.

4 Procedure

We cold rolled our samples to lower and lower thicknesses, cutting a piece of at various thicknesses for analysis. The dimensions of each piece were recorded.

5 Results

Each round of rolling was a few rolls, enough to have visual thickness change.

	Al 6061(mm)	Steel 1018(mm)
0 rounds	7.93x25.33	7.9x31.69
1 round	6.14x25.70	6.45x32.17
2 rounds	4.80x26.11	4.76x33.58
3 rounds	2.25x26.20	2.25x36.10
4 rounds	1.10x27.60	1.40x37.50

6 Observations

Rolling affected dimensions in the way we expected, but affected each material differently. This is due to the elasticity difference between the two metals.