Solid Mechanics Coursework

(Three-Point Bending/ Flexural Test)

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Abstract

Abstrac/Outline

1 Section 1

1.1 Subsection 1.1

2 Section 2

2.1 Subsection 2.1

2.2 Subsection 2.2

3 Section 3

3.1 Subsection 3.1

3.2 Subsection 3.2

4 Section 4

4.1 Subsection 4.1

4.2 Subsection 4.2

5 Section 5

5.1 Subsection 5.1

5.2 Subsection 5.2

References

[1] Text

[2] URL

6 Example

This section includes some examples that are not commonly used

6.1 Enumerate

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itemize

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6.2 Table

6.2.1 Tables side by side

Table 6.1: Difference of Mild Steel

Loading	Difference	Difference rate
50N	0.01906 mm	16.5681%
100N	0.03803 mm	16.5298%
150N	0.05709 mm	16.5426%
Average		16.55%

Table 6.2: Difference of Alminium

Loading	Difference	Difference rate
50N	0.03944 mm	12.1856%
100N	0.07887 mm	12.1839%
150N	0.11831 mm	12.1845%
Average		12.18%

6.2.2 General table

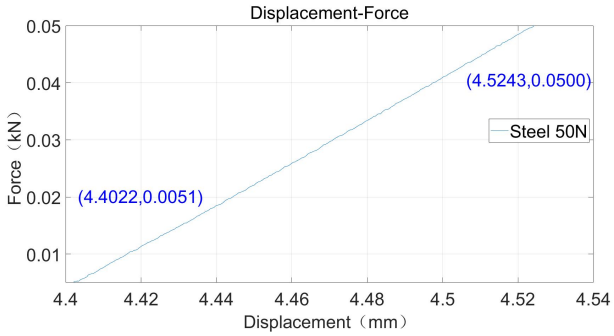
Table 6.3: The value of C_L

Value\Degree	0	5	10	15	17.5	20	22.5	25
C_L	0.034	-0.378	-0.658	-0.892	-0.954	-0.747	-0.717	-0.702

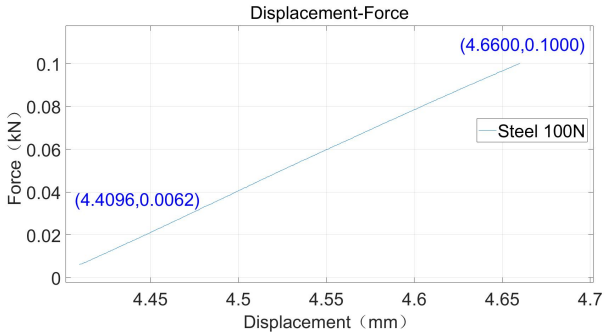
6.3 Picture

6.3.1 Pictures side by side

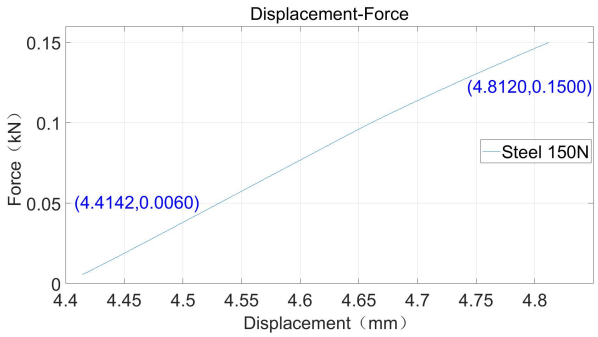
Images side-by-side, each with its own subheading but sharing large headings and tags



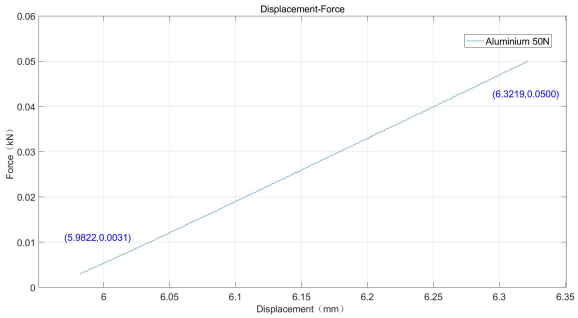
(a) 50N loading Mild Steel



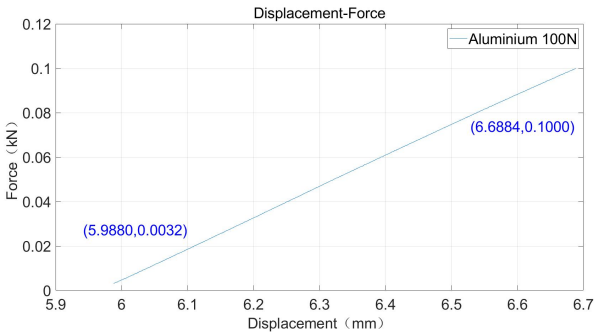
(b) 100N loading Mild Steel



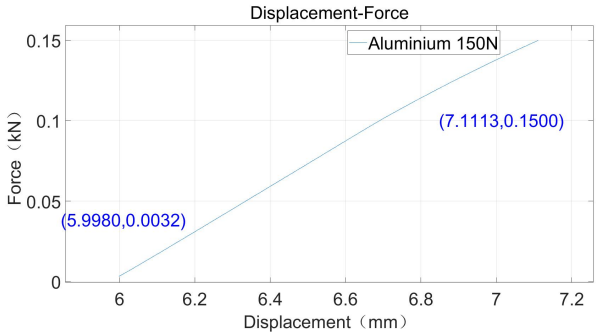
(c) 150N loading Mild Steel



(d) 50N loading Aluminium



(e) 100N loading Aluminium



(f) 150N loading Aluminium

Figure 6.1: Results of experiments with Steel and Aluminium

6.3.2 picture name adjust

Table 2.1 Result of the maximum bending displacements

Bending Displacement	Mild Steel	Aluminium
δ_{AN_1} (P = 50 N)	0.1341 mm	0.3631 mm
δ_{AN_2} (P = 100 N)	0.2681 mm	0.7262 mm
δ_{AN_3} (P = 150 N)	0.4022 mm	1.0893 mm

6.4 Equation

Editing by Axmath or python pix2tex (cmd input latexocr if you have been install pix2tex in your system)

$$\begin{cases} \delta_{An\_1} = \frac{P_{50N}L^3}{48E_sI} = \frac{50\times0.1^3}{48\times172.6698\times10^9\times4.5\times10^{-11}} = 0.1341\times10^{-3}m \\ \delta_{An\_2} = \frac{P_{100N}L^3}{48E_sI} = \frac{100\times0.1^3}{48\times172.6698\times10^9\times4.5\times10^{-11}} = 0.2681\times10^{-3}m \\ \delta_{An\_3} = \frac{P_{150N}L^3}{48E_sI} = \frac{150\times0.1^3}{48\times172.6698\times10^9\times4.5\times10^{-11}} = 0.4022\times10^{-3}m \end{cases} \tag{6.1}$$