

Table 6.21 Measurement of roundness by Dial gauge deflections of 12-mm Diameter Aluminium (Al) Round Bar
Mean values of Dial Gauge Deflection Readings after straightening of 12 mm Aluminium (AL) round bar x 0.01 mm

Length in cm	Angles in Degrees																								STD DEV (mm)
	0°	15°	30°	45°	60°	75°	90°	105°	120°	135°	150°	165°	180°	195°	210°	225°	240°	255°	270°	285°	300°	315°	330°	345°	
13	126	127	128	128	128	129	130	129	128	126	124	122	120	120	119	120	121	121	122	122	122	123	125	125	0.036
20	121	122	123	123	123	125	126	125	124	123	121	119	118	117	117	118	119	119	120	119	119	120	121	121	0.026
30	117	117	118	118	119	120	121	120	119	117	115	114	113	113	112	113	115	115	116	116	116	116	117	117	0.023
40	120	120	121	121	121	122	122	121	120	118	117	115	113	112	112	113	115	116	117	117	117	118	119	120	0.032
45	120	120	120	120	120	121	122	120	119	117	115	114	113	112	112	114	115	116	117	117	118	118	118	118	0.028
50	114	114	115	115	116	116	117	116	116	114	113	112	111	110	110	111	112	113	114	113	113	113	114	114	0.019
60	113	113	114	114	115	115	116	115	114	113	112	111	109	109	110	111	113	113	114	113	113	113	114	113	0.018
70	114	114	114	114	115	115	116	115	115	112	110	109	108	108	108	109	110	111	112	112	112	112	113	113	0.025
80	117	117	117	116	116	116	117	116	115	113	111	110	110	110	110	112	114	114	115	113	112	114	116	116	0.025
90	109	109	109	109	110	110	110	109	108	107	107	107	106	105	104	106	108	105	102	102	101	101	101	101	0.032
100	108	107	106	106	105	105	105	105	105	104	103	102	101	101	101	103	104	106	108	108	108	108	108	108	0.023
110	106	105	105	105	105	105	106	106	106	105	105	103	102	102	101	102	103	105	106	106	105	105	105	105	0.015
120	105	105	105	105	105	105	105	105	106	105	105	103	102	102	102	103	104	106	107	107	106	106	105	105	0.013
90	143	142	141	141	141	141	141	141	141	139	138	137	135	135	135	136	138	140	142	141	141	141	142	142	0.025
120	139	139	139	139	139	139	139	139	140	139	139	137	136	136	136	137	138	140	141	141	140	140	139	139	0.013

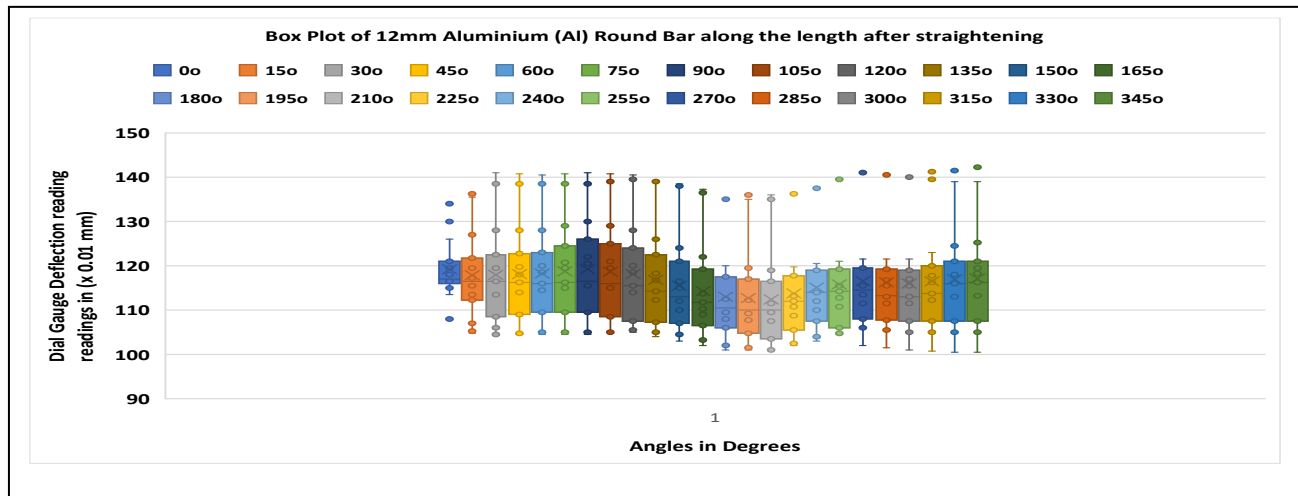


Figure 6.26(a): Box Plot of dial gauge readings dataset of mean values of 12-mm diameter Aluminium (Al) round bar before straightening

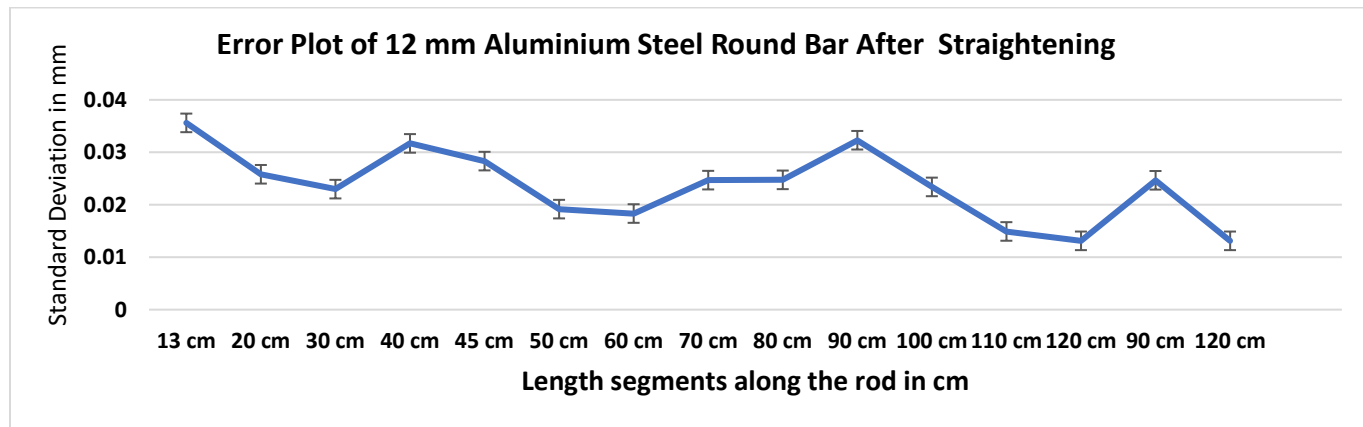


Figure 6.26(b): Error Plot of dial gauge readings on 12 mm Aluminium Round Bar after straightening