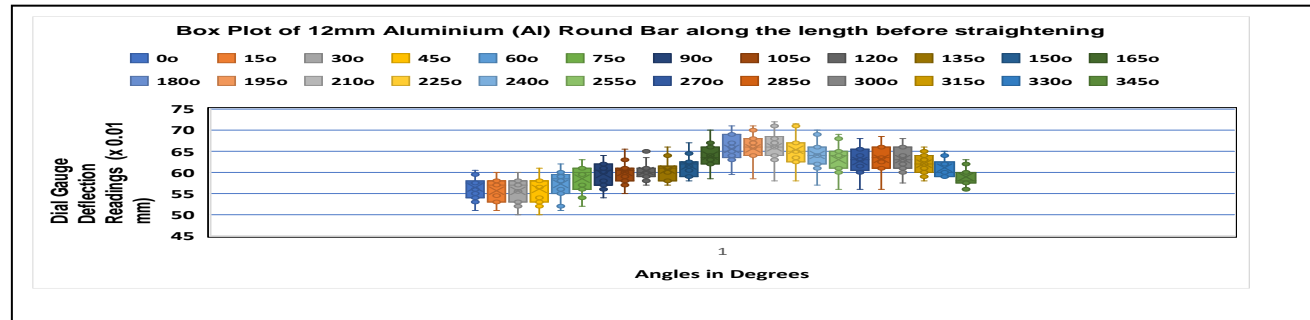


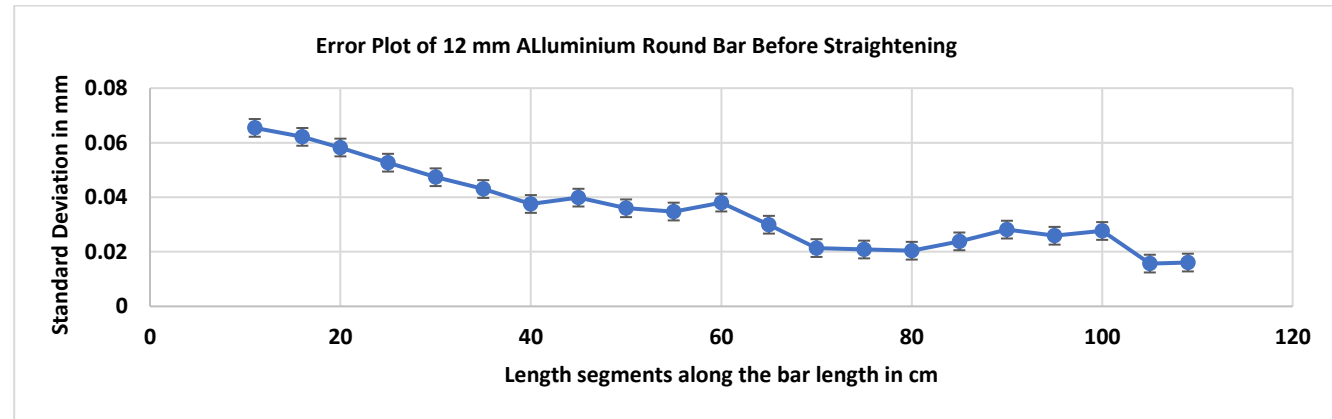
Table 5.15

**Measurement of roundness by Dial gauge deflections of 12-mm Diameter Aluminium (Al) Round Bar**  
**Mean values of Dial Gauge Deflection Readings before 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°	
11	56	53	52	52	52	54	56	58	60	61	62	66	69	70	71	71	70	68	66	66	66	64	62	60	0.06543
16	55	52	51	51	51	53	55	57	58	59	61	64	67	68	69	69	68	66	65	64	65	63	61	58	0.06213
20	53	51	50	50	51	52	54	55	57	57	59	62	65	66	67	67	66	64	63	63	63	61	59	56	0.05823
25	54	52	51	52	54	53	56	57	58.5	58	60	63	66	66	67	67	66	64	63	64	63	62	59	57	0.05266
30	54	53	53	54	56	57	58	59	60	60	62	64	67	67	68	67	66	64	63	64	64	62	60	58	0.04733
35	53	53	53	53	55	56	57	58	59	59	61	63	65	66	66	65	64	62	61	62	63	61	59	57	0.04302
40	51	53	53	53	55	56	57	57	58	58	59	62	63	64	63	64	62	61	60	61	61	59	59	56	0.03753
45	54	55	54	55	57	58	60	60	61	61	62	65	66	66	67	66	64	63	63	64	64	62	62	59	0.03985
50	58	58	58	58	59	60	62	63	64	64	65	67	69	68	69	67	66	65	66	66	66	65	64	62	0.03595
55	59	59	59	60	61	62	63	65	64	65	66	67	70	69	70	68	68	67	67	68	67	66	65	63	0.03476
60	61	60	60	61	62	63	64	66	65	66	67	70	71	71	72	72	69	69	68	69	68	66	65	63	0.03804
65	60	59	58	59	60	62	62	62	63	63	64	67	67	68	68	67	66	65	65	66	65	64	63	61	0.02993
70	58	57	57	58	59	60	60	60	60	60	61	63	64	64	64	63	62	61	62	63	62	61	60	58	0.02136
75	58	58	58	58	58	60	60	61	61	61	61	63	64	64	64	63	63	61	62	63	63	62	61	59	0.02083
80	58	58	58	58	60	61	61	61	61	62	62	64	64	64	64	64	63	62	62	64	63	63	62	60	0.02039
85	58	58	58	58	59	60	61	60	61	62	62	63	65	65	65	64	63	63	63	64	63	64	63	60	0.02382
90	58	57	58	58	59	60	61	61	61	61	63	64	66	66	66	65	64	64	64	64	64	64	63	60	0.02813
95	57	56	57	58	58.5	60	60.8	61	60.3	61	63	63	65	65	65	64	63	62	62	63	62	62	61	59	0.02588
100	55	55	56	57	58	60	61	61	60	61	62	64	65	64	64	63	61	60	61	61	60	60	60	58	0.02763
105	58	57	57	58	59	61	62	61	60	61	60	61	62	62	61	61	59	58	59	59	61	59	60	58	0.01567
109	60	59	58	59	60	62	63	61	59	58	58	59	60	59	58	58	57	56	56	56	58	58	59	58	0.01605



**Figure 5.13(a): Box Plot of dial gauge readings dataset of mean values of 12-mm diameter Aluminium (Al) round bar before straightening**



**Figure 5.13(b): Error Plot of 12 mm Aluminium Round Bar Before Straightening**