

Table 6.18**Measurement of roundness by Dial gauge deflections of 6-mm Diameter Aluminium (Al) Round Bar After Straightening**

Mean values of Dial Gauge Deflection Readings after straightening of 6 mm Aluminium (Al) round bar x 0.01 mm

	Angles in Degrees																								
Length in cm	0°	15°	30°	45°	60°	75°	90°	105°	120°	135°	150°	165°	180°	195°	210°	225°	240°	255°	270°	285°	300°	315°	330°	345°	STD DEV (mm)
16.5	241.0	244.0	244.5	243.0	242.5	240.0	242.0	244.0	241.0	238.0	236.0	234.0	231.0	230.0	232.0	231.0	233.0	235.0	234.0	231.0	229.0	233.0	237.0	237.5	0.0506
20.0	236.0	237.0	233.5	232.0	230.0	236.0	237.0	235.0	234.0	236.0	230.0	232.0	233.0	234.0	233.0	232.0	231.0	234.0	231.0	233.0	234.0	235.0	229.5	235.0	0.0220
25.0	237.0	235.5	237.5	236.5	233.5	231.0	235.0	234.0	234.0	232.0	230.0	231.0	231.0	233.0	231.0	230.0	232.0	233.0	232.0	234.0	235.0	231.0	227.5	230.0	0.0251
30.0	235.5	236.5	237.0	236.0	235.0	233.0	233.0	232.0	229.0	231.0	228.0	230.0	229.0	234.0	232.0	231.0	230.0	231.0	234.0	235.0	233.5	232.5	235.5	234.0	0.0255
35.0	236.0	239.0	242.0	243.5	245.0	247.0	245.5	243.0	240.0	236.0	233.0	232.0	234.5	234.0	234.5	233.5	233.0	234.0	233.0	232.0	235.0	233.0	236.0	235.0	0.0476
40.0	237.0	240.0	241.0	238.0	233.0	231.5	242.0	241.0	242.0	241.0	237.0	234.0	233.0	235.0	235.0	234.0	235.0	235.0	233.5	234.0	234.0	235.0	235.0	236.0	0.0318
45.0	238.0	243.0	242.0	241.0	239.0	236.0	236.0	238.0	240.0	242.0	235.0	233.0	231.0	233.0	234.0	233.0	234.0	233.0	230.0	234.0	236.5	236.0	238.5	238.0	0.0358
50.0	237.0	238.0	238.0	238.0	238.0	239.0	238.0	236.0	236.0	234.0	237.0	234.0	232.0	232.0	232.0	235.0	236.0	235.0	233.0	233.5	237.0	238.0	239.0	237.0	0.0228
55.0	236.0	241.5	243.0	245.5	243.5	242.0	240.0	237.0	235.5	238.0	233.5	237.0	234.0	233.0	231.0	232.0	230.0	233.5	236.5	235.0	236.0	238.0	239.0	241.0	0.0414
60.0	239.0	243.0	245.0	248.0	249.0	243.0	245.0	246.0	243.0	241.0	243.0	239.0	236.0	235.0	234.0	233.0	234.0	235.0	235.0	236.0	235.0	237.0	240.0	240.0	0.0480
65.0	237.0	241.0	242.0	243.0	245.0	244.0	246.0	247.5	246.5	244.0	241.5	237.0	235.0	232.5	233.0	234.0	232.0	234.0	234.0	233.0	234.0	235.0	239.0	241.0	0.0513
70.0	238.5	242.5	243.0	244.5	246.0	245.0	244.0	245.0	245.0	243.0	239.0	235.0	237.0	236.0	234.0	235.0	234.0	235.0	234.0	232.0	233.5	235.0	236.5	239.0	0.0463
75.0	237.0	238.0	239.0	241.0	242.0	240.0	238.0	237.5	237.0	236.0	232.5	233.0	235.0	234.0	232.0	234.0	235.0	234.0	231.0	231.0	233.5	233.0	234.0	236.5	0.0306
80.0	238.0	235.5	233.5	232.0	236.0	237.0	235.0	236.0	233.0	234.0	233.0	231.0	234.0	235.0	234.0	233.0	231.0	233.0	234.5	234.0	235.0	236.0	240.0	239.5	0.0231
85.0	237.0	247.0	248.0	246.0	244.0	243.0	240.5	239.0	239.0	238.0	236.0	235.0	236.0	237.0	235.0	235.0	233.0	236.0	235.0	235.0	237.0	238.0	242.0	238.0	0.0418
90.0	235.0	246.5	242.5	242.0	243.0	244.0	242.0	241.0	238.0	235.0	231.0	233.0	234.0	236.0	234.0	236.5	234.0	235.0	236.0	236.0	236.0	239.0	238.0	237.0	0.0396
95.0	238.5	242.0	244.0	245.0	244.0	243.0	241.5	243.0	241.0	238.0	234.0	235.0	235.0	237.0	235.0	237.0	235.0	234.0	234.0	233.0	234.0	236.0	236.0	235.0	0.0391
100.0	239.0	241.5	240.5	238.0	236.0	238.0	233.0	236.0	237.0	236.0	235.0	236.0	236.0	235.0	234.0	236.0	237.5	238.5	236.0	235.0	233.0	234.0	237.0	236.0	0.0211
105.0	239.0	240.0	238.5	240.0	239.0	238.0	239.5	237.5	235.5	235.0	234.0	235.0	233.0	236.0	235.0	234.0	235.0	237.0	238.0	236.0	234.0	235.0	236.0	236.0	0.0209
109.0	242.5	241.0	243.0	244.0	244.0	243.5	241.0	242.0	241.0	238.0	239.0	237.0	234.0	234.0	236.0	235.0	233.0	235.0	236.0	234.0	235.0	236.0	238.0	235.0	0.0369

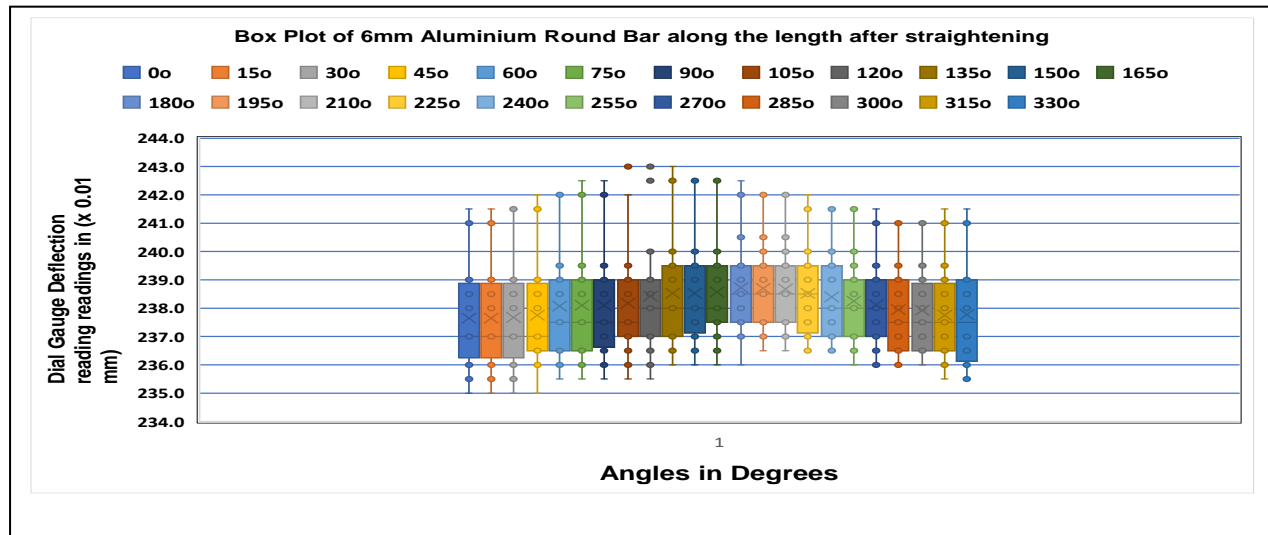


Figure 6.23(a): Box Plot of dial gauge readings dataset of mean values of 6-mm diameter Aluminium (SS) round bar before straightening

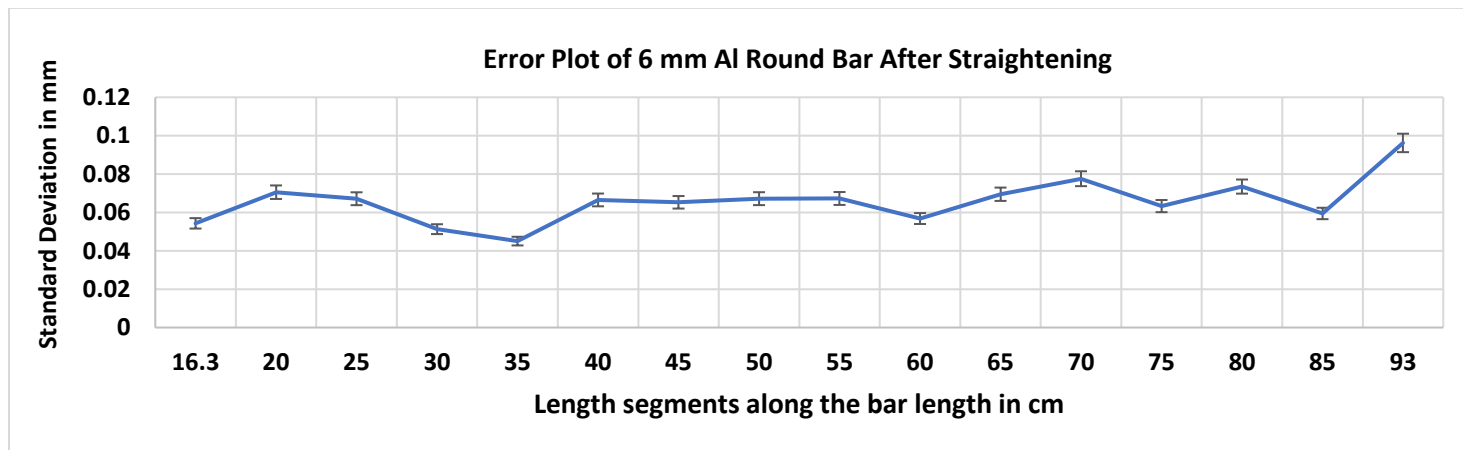


Figure 6.23(b): Error Plot of dial gauge readings on 6 mm Aluminium Round Bar after straightening