

Table 6.16 Measurement of roundness by Dial gauge deflections of 10-mm Diameter Stainless Steel (SS) Round Bar
Mean values of Dial Gauge Deflection Readings after straightening of 10 mm Stainless Steel (SS) 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)
12	148.5	149.8	151.0	151.8	152.5	154	155.5	156.3	157.0	157	157.0	156.8	156.5	155.8	155.0	154	153.0	151.5	150.0	149.8	149.5	149	148.5	148.5	0.03
15	146.5	148	149.5	151	152.5	154	155.5	156.5	157.5	157.3	157.0	156.8	156.5	155.8	155.0	154.3	153.5	152	150.5	149	147.5	147.3	147.0	147	0.04
17	147.0	148.3	149.5	151	152.5	154	155.5	156.5	157.5	157.3	157.0	156.8	156.5	156	155.5	154.5	153.5	152.3	151.0	149.5	148.0	147.5	147.0	147.3	0.04
20	148.5	149	149.5	150.5	151.5	153	154.5	155.5	156.5	156.8	157.0	157	157.0	156.8	156.5	155	153.5	152.5	151.5	150.5	149.5	148.8	148.0	148.3	0.03
23	146.5	147.5	148.5	149.8	151.0	151.8	152.5	153.3	154.0	154.8	155.5	155.3	155.0	154.8	154.5	153	151.5	150.5	149.5	149	148.5	147.8	147.0	147	0.03
25	147.0	148.3	149.5	151.3	153.0	153.8	154.5	155	155.5	155.8	156.0	156	156.0	155.5	155.0	153.8	152.5	151.5	150.5	149.5	148.5	148.5	148.5	148.3	0.03
27	147.5	148.3	149.0	150.8	152.5	153.5	154.5	155.5	156.5	156.8	157.0	156.8	156.5	156	155.5	154.3	153.0	152.3	151.5	150.5	149.5	149	148.5	148.3	0.033
30	148.0	148.3	148.5	150	151.5	152.8	154.0	155.3	156.5	157	157.5	157.5	157.5	156.8	156.0	155.8	155.5	154.3	153.0	151.8	150.5	149.8	149.0	148.5	0.034
32	148.5	149	149.5	150.5	151.5	153	154.5	155.8	157.0	157.5	158.0	157.8	157.5	157	156.5	155.3	154.0	153.3	152.5	151.3	150.0	149.3	148.5	148.5	0.034
34	147.5	148	148.5	149.8	151.0	153.8	156.5	156	155.5	156.3	157.0	158	159.0	158.3	157.5	156	154.5	153.5	152.5	150.8	149.0	148.5	148.0	148	0.04
37.5	151.0	152.5	154.0	155.3	156.5	156	155.5	156.3	157.0	158	159.0	159.5	160.0	159.8	159.5	158.5	157.5	156.5	155.5	154.5	153.5	152	150.5	150.5	0.03
44	152.0	151.5	151.0	150.3	149.5	149.8	150.0	150.8	151.5	153	154.5	155.8	157.0	158	159.0	160.3	161.5	160.8	160.0	159.8	159.5	158	156.5	154.3	0.04
46	152.5	153	153.5	152.5	151.5	152	152.5	153.3	154.0	155.3	156.5	157.5	158.5	161	163.5	163.3	163.0	161.5	160.0	159.5	159.0	158	157.0	155	0.04
49	151.0	151	151.0	151	151.0	151.8	152.5	153.5	154.5	155.3	156.0	157.5	159.0	159.8	160.5	160.5	160.5	160	159.5	158	156.5	155.3	154.0	153.3	0.036
52	151.5	151.3	151.0	151	151.0	151	151.0	151.5	152.0	153.8	155.5	156.5	157.5	158	158.5	158.5	158.5	158.5	158.5	157	155.5	154.5	153.5	153.3	0.030
55	152.0	152.3	152.5	152.8	153.0	153.8	154.5	155.3	156.0	157.3	158.5	159.5	160.5	160.8	161.0	161	161.0	160	159.0	157.8	156.5	155.5	154.5	154	0.032
58	149.5	149.5	149.5	149.8	150.0	151.3	152.5	154	155.5	156.3	157.0	157.8	158.5	159	159.5	159.3	159.0	158.3	157.5	156.3	155.0	153.8	152.5	151.3	0.036
61	149.5	149.5	149.5	150	150.5	151.5	152.5	153.8	155.0	156.3	157.5	158	158.5	158.8	159.0	158.8	158.5	157.5	156.5	155	153.5	152.8	152.0	151	0.035
64	149.5	149.5	149.5	149.8	150.0	151	152	154	156	157	158	158.8	159.5	159.5	159.5	158.8	158.0	157.3	156.5	155.3	154.0	152.8	151.5	150.8	0.037
68	149.0	149.5	150.0	150.8	151.5	152.3	153.0	154.5	156.0	156.8	157.5	158.3	159.0	159	159.0	158	157.0	156	155.0	154	153.0	151.8	150.5	150.3	0.034

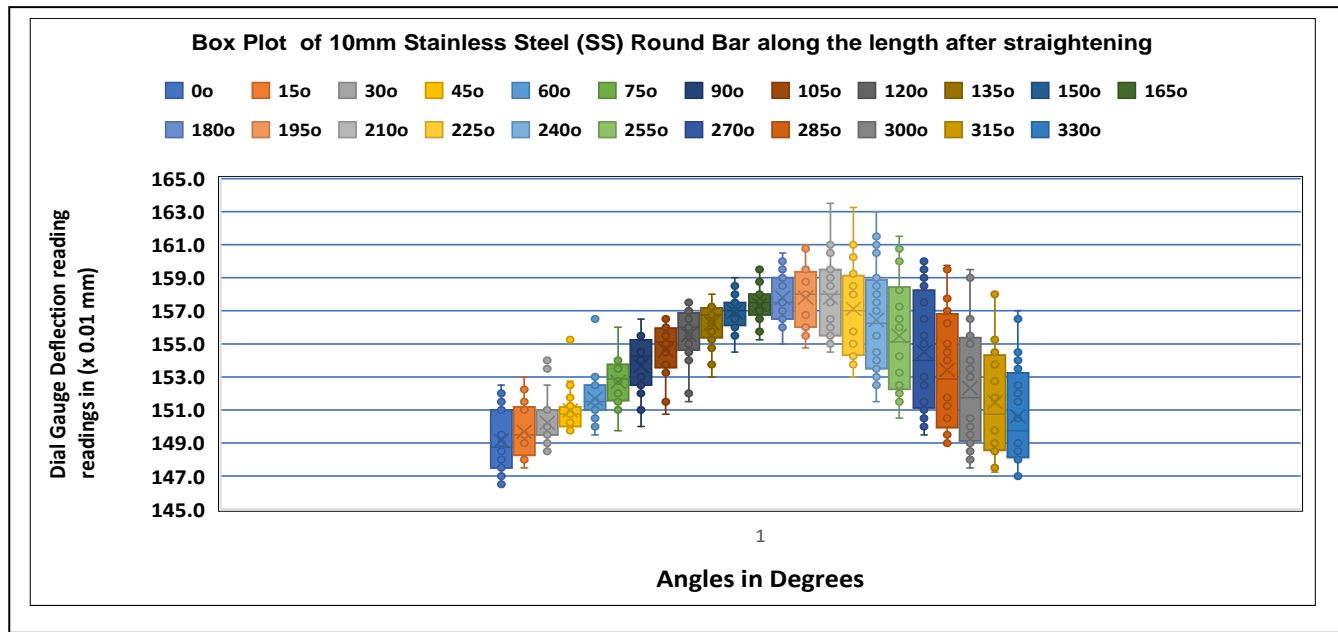


Figure 6.21(a): Box Plot of dial gauge readings dataset of mean values of 10-mm diameter Stainless Steel (SS) round bar before straightening

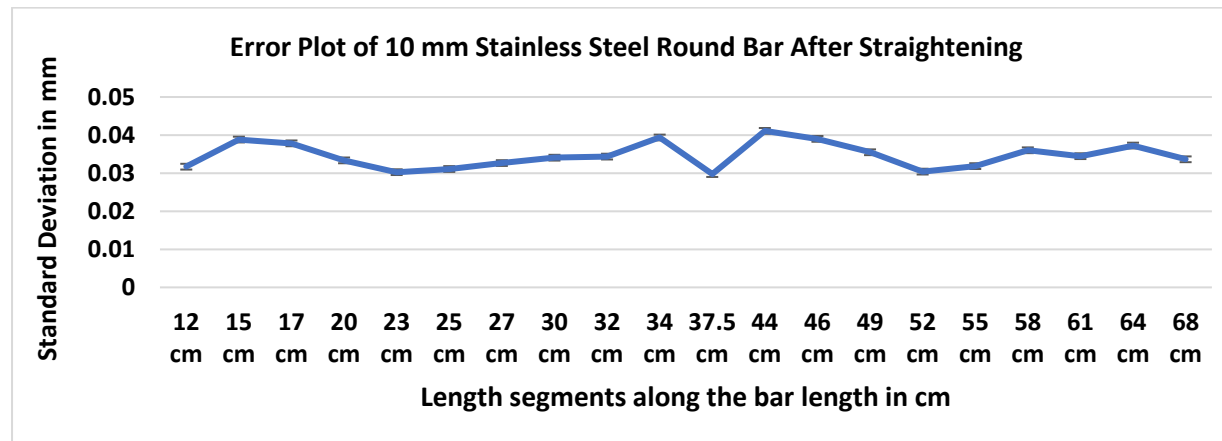


Figure 6.21(b): Error Plot of dial gauge readings on 10 mm Stainless Steel Round Bar after straightening