

Table 5.18**Measurement of roundness by Dial gauge deflections of 10-mm Diameter Copper (Cu) Round Bar Before Straightening****Mean values of Dial Gauge Deflection Readings before straightening of 10 mm Copper 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)
12.3	79	71	67	64	61	64	64	65	71	77	84	88	95	100	104	107	110	108	105	103	98	93	88	85	0.16352
16	68	66	67	67	66	68	73	77	81	86	92	96	100	102	105	105	104	102	97	92	87	81	76	71	0.14430
20.5	73	70	65	63	60	60	62	63	67	70	74	78	83	86	91	94	96	97	97	93	90	85	81	76	0.12708
25	91	84	76	67	59	50	49	52	53	50	51	54	62	68	77	86	95	101	108	110	111	109	104	98	0.22512
28	101	88	88	65	51	49	52	55	57	59	61	58	55	60	73	85	98	99	117	122	124	123	119	103	0.26424
31	104	91	73	55	49	52	54	49	53	55	57	59	62	64	69	84	101	115	127	134	137	138	132	128	0.33251
31	116	97	82	61	50	49	49	49	49	49	49	49	49	59	75	91	108	121	131	138	140	138	131	121	0.35596
35	112	94	75	52	49	53	55	56	57	52	54	56	53	55	72	91	109	126	141	149	153	155	150	140	0.40274
35	128	103	82	59	49	52	53	55	56	57	58	52	53	55	71	89	110	126	141	149	155	155	150	138	0.40341
40	120	96	71	49	53	52	54	56	58	59	62	65	66	66	85	105	123	140	154	164	168	167	157	143	0.43190
45	113	94	66	49	50	54	56	58	62	64	65	69	56	72	87	104	124	142	159	169	175	174	167	149	0.45507
48	59	59	56	53	49	52	56	50	53	52	51	50	53	55	56	62	64	52	53	52	51	49	51	54	0.03918
51	68	66	64	57	50	49	52	56	58	59	62	64	63	66	60	57	53	50	50	49	50	60	64	67	0.06620
54	71	69	66	60	49	54	56	52	51	50	54	56	58	62	61	60	54	52	49	55	61	65	71	72	0.07536
57	70	66	62	53	59	50	49	52	53	50	51	54	62	68	69	72	74	65	62	49	60	66	69	72	0.08510
60	79	76	72	64	52	50	51	50	52	53	54	56	58	63	64	66	68	63	49	53	64	68	73	76	0.09571
63	81	78	74	65	52	55	52	51	49	52	53	52	56	58	62	62	58	51	49	60	68	72	78	80	0.11159
66	82	82	79	67	50	49	55	57	59	60	55	51	58	52	59	63	61	65	66	66	72	76	81	84	0.11453
69	82	79	74	64	49	52	56	58	62	74	72	65	56	49	56	67	65	49	57	66	72	78	82	84	0.11558
72	75	73	65	50	49	52	54	56	58	62	65	67	68	72	65	55	55	53	62	69	74	79	81	81	0.10207
75	72	67	58	49	54	57	59	62	65	67	69	62	56	52	56	52	50	54	55	61	66	71	73	74	0.07856
78	63	58	49	53	58	59	63	66	67	72	66	62	58	55	52	56	59	55	63	66	72	73	74	72	0.07141
81	64	61	50	49	53	64	69	56	62	65	59	53	50	49	56	59	62	49	53	58	64	67	68	69	0.06704
85.5	87	84	75	60	49	54	56	59	63	66	69	72	75	69	59	57	65	72	80	86	89	89	91	91	0.13228

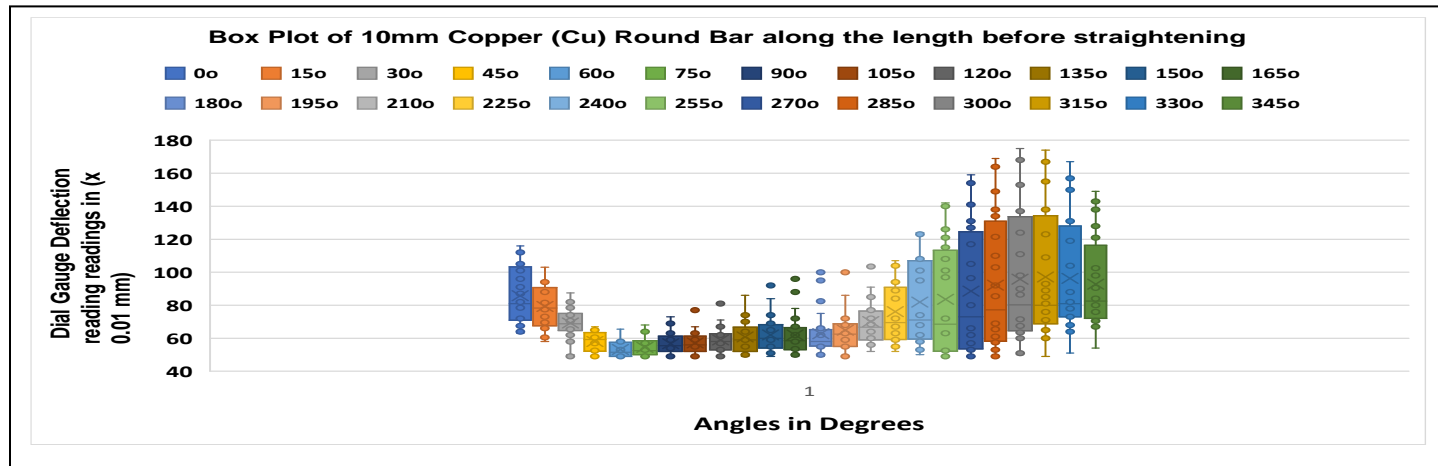


Figure 5.16(a): Box Plot of dial gauge readings dataset of mean values of 10-mm diameter Copper (Cu) round bar before straightening

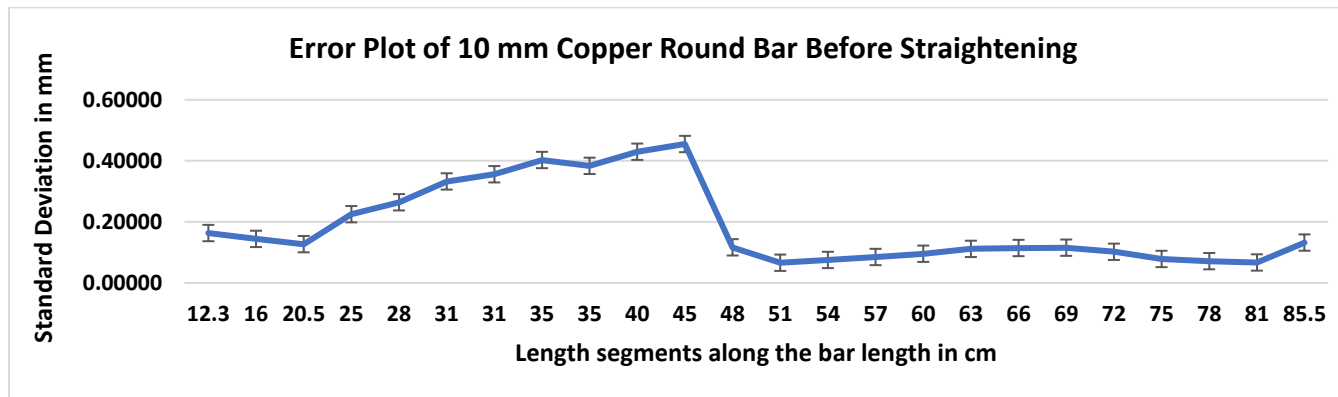


Figure 5.16(b): Error Plot of 10 mm Copper Round Bar Before Straightening