

Table 5.19

Measurement of roundness by Dial gauge deflections of 12-mm Diameter Copper (Cu) Round Bar Before Straightening
Mean values of Dial Gauge Deflection Readings before straightening of 12 mm Copper (Cu) 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°	
12	102	91	81	70	61	52	49	49	49	49	52	59	66	74	82	91	101	110	116	121	124	122	117	112	0.27505
15	95	88	80	70	64	51	51	49	49	50	53	59	66	72	82	88	96	102	108	110	112	111	110	104	0.23366
19	92	89	85	83	79	75	71	67	65	64	65	67	70	72	76	79	83	86	89	91	94	94	94	93	0.10598
24	67	66	67	66	67	69	72	75	77	80	82	85	88	88	88	88	88	86	83	81	79	74	71	69	0.08401
29	75	75	75	74	73	73	72	71	70	70	69	69	69	68	69	70	70	71	73	73	74	74	73	74	0.02334
34	102	101	98	95	88	80	72	66	58	50	49	49	49	49	49	52	59	65	72	78	85	91	96	100	0.19895
39	97	96	97	95	89	85	78	72	65	60	56	55	56	56	58	60	64	69	74	78	83	86	88	92	0.15044
44	79	78	79	78	77	76	74	72	71	69	68	67	67	66	67	67	69	70	71	73	74	75	75	76	0.04334
49	62	62	64	66	67	69	70	72	74	75	76	77	77	74	73	72	71	69	67	65	62	61	60	60	0.05682
56	77	76	76	76	75	73	72	70	67	65	63	61	60	58	59	58	59	62	63	65	67	69	71	74	0.0652
59	63	63	62	61	59	58	56	55	55	52	51	50	49	49	49	50	52	52	55	56	57	58	60	61	0.04636
62	50	50	50	51	53	53	55	57	58	60	60	61	61	60	59	59	59	57	56	54	52	50	49	49	0.0429
67	49	49	49	49	50	53	58	62	66	69	71	71	72	70	68	65	62	58	52	49	49	49	49	49	0.08975
72	49	49	49	51	55	57	61	64	67	69	70	71	70	68	66	64	60	57	55	51	49	49	49	49	0.08312
77	53	54	56	59	62	65	67	70	73	74	75	76	75	73	70	68	65	61	57	54	50	50	49	50	0.09309
82	61	61	62	65	67	69	72	75	77	78	80	82	82	80	79	78	77	74	71	70	65	61	61	61	0.07554
87	70	69	70	70	71	72	73	74	75	75	79	79	77	76	76	76	75	73	72	71	70	69	68	69	0.03303

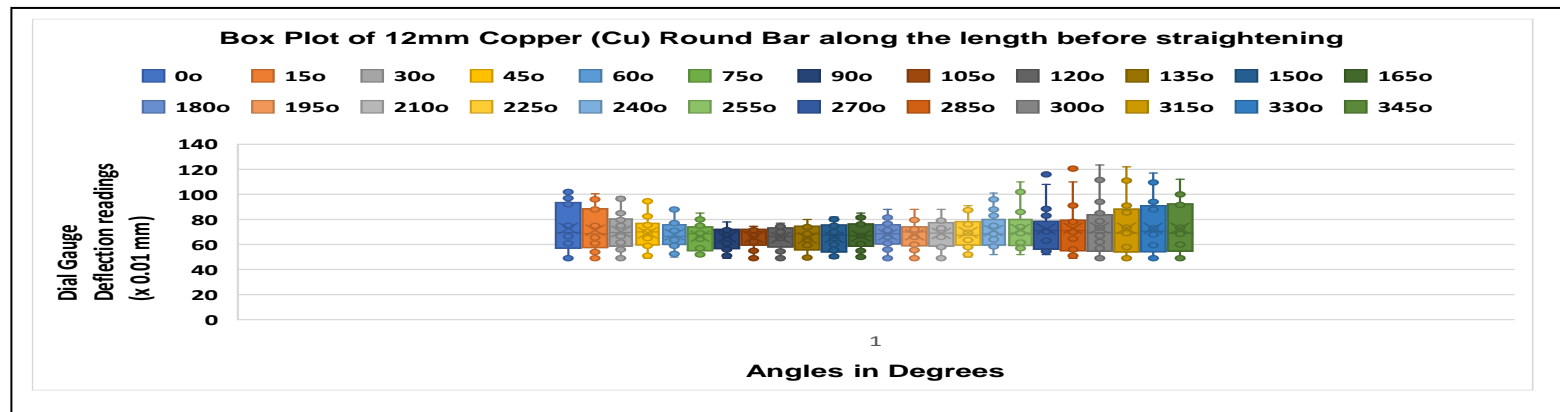


Figure 5.17(a): Box Plot of dial gauge readings dataset of mean values of 12-mm diameter Copper (Cu) round bar before straightening

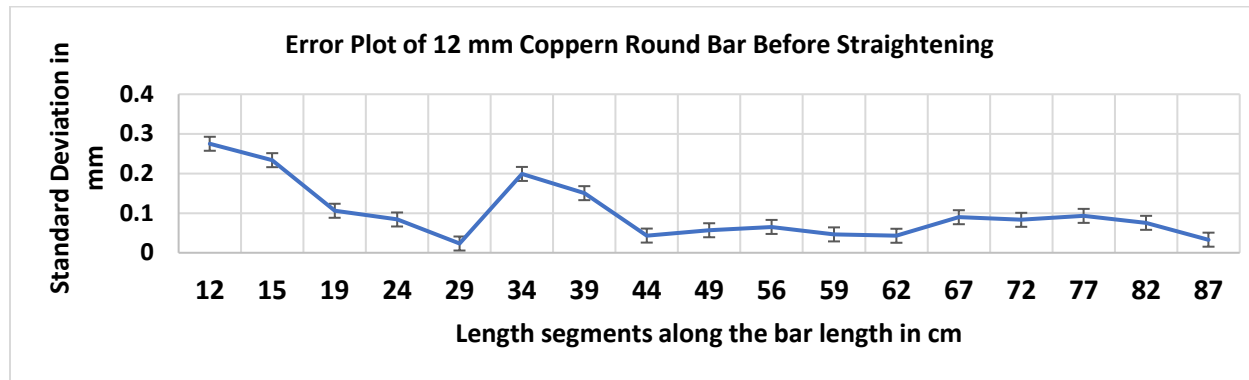


Figure 5.17(b): Error Plot of 12 mm Copper Round Bar Before Straightening