TURKISH STANDARD INSTITUTION
BURSA LABORATORIES
ACCREDITATION SCOPE

Measurand / Device	Measuring range	Conditions	Measurement Capability / Uncertainty	Notes
DIMENSIONAL CALIBRATION				
Outside Micrometer	0 < L ≤ 25 mm 25 mm < L ≤ 300 mm 300 mm < L ≤ 1000 mm	r: 0,0001 mm r: 0,001 mm r: 0,01 mm	(1,25+1 · L) µm (5+2 · L) µm (5+13,5 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 10.1
Caliper	0 < L ≤ 300 mm 300 < L ≤ 1000 mm 1000 < L ≤ 2000 mm	r: 0,01 mm r: 0,01 mm r: 0,01 mm	(8+3 · L) µm (10+9 · L) µm (20+32 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 9.1
Depth Caliper	0 < L ≤ 300 mm 300 < L ≤ 1000 mm	r: 0.01 mm (Digital) r: 0.01 mm (Digital)	(8+3 · L) µm (10+9 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 9.2
Height Caliper	0 < L ≤ 300 mm 300 < L ≤ 1000 mm	r: 0.01 mm (Digital) r: 0.01 mm (Digital)	(8+3 · L) µm (10+9 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 9.3
Thickness Gauge Lever gauges for external measurements	0 < L ≤ 100 mm	r: 0,001 mm	(1+10 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 12.1
Feeler Gauge	0,01 mm ≤ L ≤ 2 mm	-	1,3 µm	DIN 2275
Cylindrical Measuring Pins	0,1 mm ≤ d ≤ 50 mm	Steel Hard metal	(0,6+1 · d) µm (0,7+1 · d) µm	d: Diameter (m) VDI / VDE / DGQ 2618 Part 4.2
Dial Gauge	0 < L ≤ 100 mm	r: 0,001 mm	(1+12,5 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 11.1
Dial Indicator	0 < L ≤ 3 mm	r: 0,001 mm	(0,45+1 · L) µm	r: Resolution L: Length VDI / VDE / DGQ 2618 Part 11.2
Lever Gauge	0 < L ≤ 2 mm	r: 0,001 mm	(0,44+1 · L) µm	r: Resolution L: Length VDI / VDE / DGQ 2618 Part 11.3
Inside Cylinder (Ring Gauge)	3 mm ≤ d ≤ 100 mm 100 mm < d ≤ 300 mm	-	(0,8+2 · d) µm (1+3 · d) µm	D: Diameter (m) VDI / VDE / DGQ 2618 Part 4.1
Outside Cylinder (Plug Gauge)	1 mm ≤ d ≤ 300 mm	-	(0,7+2,5 · d) µm	d: Diameter (m) VDI / VDE / DGQ 2618 Part 4.1
Screw Ring Gauge	4 mm ≤ d ≤ 100 mm	-	(2,5+2 · d) µm	d: Diameter (m) VDI / VDE / DGQ 2618 Part 4.9
Screw Plug Gauge	1 mm ≤ d ≤ 300 mm	-	(2+2 · d) µm	D: Diameter (m) VDI / VDE / DGQ 2618 Part 4.8
Micrometer Setting Standard	0 < L ≤ 500 mm	-	(0,4+1 · L) µm	L: Length(m) DKD R 4-3 Part 4.4
Internal Micrometer (2-point contact Micrometer)	25 mm ≤ L ≤ 100 mm 100 mm < L ≤ 500 mm	r: 0.001 mm r: 0.01 mm	(1+3,2 · L) µm (2,5+2 · L) µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 10.7
Coating thickness standard (Thickness Gauge Foils)	0,005 mm ≤ L ≤ 5 mm	-	(0,4+1 · L) µm	L: Length (m) DIN EN ISO 2360 DIN EN ISO 2178

TURKISH STANDARD INSTITUTION
BURSA LABORATORIES
ACCREDITATION SCOPE

Measurand / Device	Measuring range	Conditions	Measurement Capability / Uncertainty	Notes
Long Gauge Block	100 mm < L ≤ 500 mm	-	(0,4+0,95 · L) µm	L: Length (m) VDI / VDE / DGQ 2618 Part 3.1
Test Sieve	0 mm < L ≤ 5 mm 5 mm < L ≤ 125 mm	-	2,9 µm 35,0 µm	L: Length ISO 3310-1 ISO 3310-2 ISO 3310-3
Radius Gauge	0 mm ≤ d ≤ 25 mm	-	3 µm	Optical measuring method r: Radius
Gauge Block (According to EN ISO 3650)	0,5 mm ≤ L ≤ 100 mm	Steel Gauge Blocks Ceramic Gauge Blocks Tungsten Carbide Gauge Blocks	(0,07+0,78 · L) µm (0,07+0,8 · L) µm (0,08+2,3 · L) µm 0,07 µm	L: Length (m) VDI / VDE / DGQ 2618 Part 3.1
Vertical Measuring Instruments (Square)	0 mm < L ≤ 300 mm 0 mm < L ≤ 500 mm	steepness measurement parallelism Flatness-linearity	4,5 µm 6 µm 6 µm	VDI / VDE / DGQ 2618 Part 7.1 DIN 875-1/2
90° Steepness Standart (Granite Square etc.)	L ≤ 500 mm	steepness measurement	2 µm	Direct measurement method with CMM
Profile Projection	0 mm < L ≤ 300 mm 0 mm < L ≤ 500 mm 0° - 360°	r: 0,001 mm r: 0,001 mm Angle	2 + 2·L µm 0,1 + 1,2·L µm 0,56´	L: Length (m) r: Resolution Comparison with reference glass ruler With laser interferometer Angle measurement On the spot calibration
Height Measuring Device (Microprocessor Touchscreen)	L ≤ 600 mm	0,001 mm	3 + 1·L µm	VDI / VDE / DGQ 2618 Part 16.1
Protractor (Angle Meter - Bevel)	0° ≤ α ≤ 360° 0 mm < L ≤ 300 mm	0,01° Digital Parallelism/Linearity	0,01° 5 µm	Calibration procedure prepared in accordance with VDI / VDE / DGQ 2618 Section 7.2
Dial Gauge Test Device	0 mm < L ≤ 25 mm	r: 0,1 µm (Digital)	0,1 + 0,5·L µm	L: Length (m) r: Resolution Comparison with reference measurement probe
Dial Gauge Test Device	0 mm < L ≤ 100 mm	r: 0,02 µm (Digital)	0,07 µm	r: Resolution with laser interferometer
Plate	250 mm < d ≤ 8000 mm	On the spot calibration	1,7 µm + 0,1·d	d: measured flatness Flatness measurement using an electronic level meter DIN 876-1 DIN 876-2
Internal Micrometer (3-point contact Micrometer)	3 mm ≤ L ≤ 300 mm	r: 0,001 mm	5 + 3,5·L µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 10.8 DKD-R4.3 Bölüm 10.8
Depth Micrometer	0 mm < L ≤ 300 mm	r: 0,001 mm	5 + 2·L µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 10.5

TURKISH STANDARD INSTITUTION
BURSA LABORATORIES
ACCREDITATION SCOPE

Measurand / Device	Measuring range	Conditions	Measurement Capability / Uncertainty	Notes
Sleeve Dial Gauge (with probe arm)	0 mm < L ≤ 200 mm (external measurements) '0 mm < L ≤ 100 mm (internal measurements)	r: 0,005 mm (analogue) r: 0,005 mm (analogue)	3 + 3,5·L µm 2,5 + 3·L µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 12.1,13.1
Measuring Microscope	0 mm < L ≤ 300 mm '0 mm < L ≤ 500 mm 0° - 360°	r: 0,001 mm r: 0,001 mm r: 0,1 µm	2 + 2·L µm 0,1 + 1,2·L µm 0,08 + 1·L µm 0,56'	L: Length (m) r: Resolution Comparison with reference glass ruler and reference laser interferometer Angle measurement
Coating Thickness Measuring Instrument	0 mm < L ≤ 1 mm	r: 0,1 µm	0,7 µm	r: Resolution with thickness foil TS 2311 EN ISO 2178 TS 2674 EN ISO 2360
Ultrasonic Thickness Gauge	0 mm < L ≤ 100 mm	r: 0,01 mm	20 µm	r: Resolution with Parallel Block Gauge TS 2311 EN ISO 2178 TS 2674 EN ISO 2360
Screw Threaders	0,35 mm ≤ L ≤ 10 mm	Step Angle	3 µm 3'	L : Pitch (mm) Step and Thread Height with Optical Measurement Method
1- Dimension Measuring Device (Universal etc.)	0 mm < L ≤ 500 mm	r: 0,01 µm	0,2 + 0,85 · L µm	r: Resolution VDI / VDE / DGQ 2618 Part 17.1
Single Axis Linear Measuring Systems (Tape Measure, Steel Ruler etc. Calibration Stands)	0 mm < L ≤ 10 mm	r: 0,001 mm	0,5 + 1,2 · L µm	Laser Interferometer Measurement Method
Three Dimensional Measurement Device (CMM - Coordinate Measuring Machine)	0 mm < L ≤ 500 mm		1 + 5 · L µm 2 + 5 · L µm	Block Gauge Ceramic Sphere Plate
Three Dimensional Measurement Device (CMM - Coordinate Measuring Machine)	x axis ; 10 mm ≤ L ≤ 10000 mm y axis ; 10 mm ≤ L ≤ 5000 mm z axis ; 0 mm ≤ L ≤ 10000 mm		1 + 2 · L µm	L: Length (m) TS EN ISO 10360 Laser Interferometer
Articulated Arm Coordinate Measuring Device (AACMM)	0 mm < L ≤ 2000 mm		2 + 5 · L µm	VDI / VDE / DGQ 2617 Part 9
Glass Ruler	0 mm < L ≤ 300 mm		3,2 µm	Optical Measurement Method
Referance Glass Ruler	0 mm < L ≤ 300 mm		0,65 µm	Measurement method with laser interferometer
Steel Ruler	0 mm < L ≤ 300 mm 0 mm < L ≤ 2000 mm 0 mm < L ≤ 2000 mm		58 µm 140 µm 62 µm	Optical Reading Method DIN 865/DIN 866 With Block Gage DIN 865/DIN 866 With Laser Interferometer

TURKISH STANDARD INSTITUTION
BURSA LABORATORIES
ACCREDITATION SCOPE

Measurand / Device	Measuring range	Conditions	Measurement Capability / Uncertainty	Notes
Spirit Level and Inclinometer	0 mm < L ≤ 200 mm	Angle Flatness	1,5' 5 µm	DIN 877
Sinus (Bar, Table)	0 mm < L ≤ 500 mm	Angle Distance Parallelism	3" 5 µm 4,5 µm	DIN 2273
V-Block	0 mm < L ≤ 300 mm		4,5 µm	Linearity, Orthogonality, Parallelism With Coordinate Measuring Device
Concrete Sample Mold (Cube, Cylinder)	50 mm ≤ L ≤ 300 mm	Dimension Control (Distance, Parallelism, Straightness, Linearity)	20 µm	TS EN 12390-1
Optical Flat and Optical Parallel (Parallel Slope)	0 mm < d ≤ 60 mm	Flatness Parallelism	0,3 µm 0,3 µm	VDI / VDE / DGQ 2618 Part 6.1
Sphere - Hemisphere	0,1 mm < d ≤ 100 mm		0,5 + 2 · d µm 3 + 2,5 · d µm	d: measured value With One Dimensional Measuring Device With Coordinate Measuring Device Diameter Measuring
Passometer	0 mm < L ≤ 200 mm	r: 0,01 mm r: 0,001 mm	3 + 10 · L µm 3 + 5 · L µm	L: Length (m) r: Resolution VDI / VDE / DGQ 2618 Part 10.3
Gauge Block Comparators	0 mm < L ≤ 100 mm	r: 0,01 µm	50 nm	With Reference Gauge Blocks r: Resolution EURAMET / cg-02
Electronic Measuring Probe	0 mm < L ≤ 100 mm	r: 50 µm	0,5 µm	r: Resolution Comparison Method with One Dimensional Measuring Instrument Calibration Procedure Prepared According to UME Calibration Method
Tape measure (Pi Meter, Telescopic Ruler)	0 mm < L ≤ 3000 mm 3000 mm < L ≤ 5000 mm 5000 mm < L ≤ 50000 mm	r: 1 mm	0,4 mm 0,6 mm 0,5 + 0,12 · L mm	L: Length (m) r: Resolution Comparison Method / TS 9505
Applicator Grindometer Wet Film Thickness Gauge Paint Adhesion Test Comb	L ≤ 500 µm 5 mm ≤ L ≤ 10 mm	 Length Angle	2 µm 1,1 µm 0,01°	ISO 2808 EN ISO 1524 ASTM D 823 EN ISO 2409
Laser Distance Meter	L ≤ 11 mm	r: 0,1 - 1 mm	2,5 mm	Comparison Method with Reference Device
Angle Gauge Block	0° < α ≤ 90°	Angle	5" (arcsan)	Direct Measurement Method with CMM

TURKISH STANDARD INSTITUTION
BURSA LABORATORIES
ACCREDITATION SCOPE

Measurand / Device	Measuring range	Conditions	Measurement Capability / Uncertainty	Notes
Rockwell Hardness Tip	120° 0,3° - 0,5° 200 µm 0,4 mm Boy	Direct Calibration Angle Coaxiality Radius linearity	0,05° 2 µm 0,75 µm	ASTM E18 ISO 6508-2
Brinell Hardness Tip	1 mm ≤ d ≤ 10 mm	Sphere Diameter	1 µm	ISO 6506-2
Vickers Hardness Tip	136° 148,11°	Pyramid Angle Peak Distance	0,1° 0,15 µm	ISO 6507-2
Gauge of Linearity (Bristle Miter)	L ≤ 300 mm	Linearity Steepness	2 µm 3,5 µm	VDI / VDE / DGQ 2618 Part 5.2