

3.2.6 Holes, slots, and inserts Holes, slots, and inserts, when required, shall not deform or stress the work surface (see appendix 60).

3.3 Work surface.

3.3.1 Workmanship of work surface. The work surface shall be fine precision lapped, free from rough lapping marks, and objectionable scratches for the work surface area, (see 3.3.4.1). Evidence of loosely bound crystals on the surface of grade AA plates shall be cause for rejection. When periodically cleaned with soap and water or any other noncorrosive cleaner, the work surface shall have a quality of negligible stickiness when in contact with clean precision objects.

3.3.2 Surface texture. The surface roughness, average of five readings shall not exceed 32 microinches arithmetical average for grade AA and A plates and 64 microinches arithmetical average for grade B (see 4.5.4). To prevent sticking and permit free sliding of workpieces and accessories, the surface roughness shall not be less than 16 microinches.

3.3.3 Tolerances on repeat reading measurement. Tolerances on repeat reading measurement, when the work surface is scanned with the repeat reading gage, are given in table II (see 4.5.5 for test procedure). If the smallest tolerance is required, specify it on invitation for bid, contract or order (see 6.2(m)). If it is intended that small objects be measured on large surface plates, it should be noted that a larger tolerance in flatness over small areas is permitted on larger plates.

TABLE II. Tolerances for repeat reading of measurement

Diagonal or diameter range Inches	Grade AA	Grade A	Grade B	Obtained
	Full indicator movement (FIM) microinches			
Thru 30	35	60	110	When not specified
Over 30 thru 60	45	70	120	
Over 60 thru 90	60	80	160	
Over 90 thru 120	75	100	200	
Over 120 thru 150	90	120	240	
Over 150	100	140	280	
All sizes	25	50	100	When specified

3.3.4 Flatness tolerance. All points of the work surface (as measured with .375-inch diameter flat contacts or probes) shall be contained between two parallel planes, the base plane and the roof plane, separated a distance no greater than that specified for the respective grades. The enveloping planes shall be parallel to the reference plane (see figure 9). The work surface flatness tolerance for the three grades of plates are given in table III and 3.3.4.1. The tolerances on the A and B grade plates are 2 and 4 times respectively, those of grade AA. Listed values in table III do not necessarily comply with formula in 3.3.4.1 because they conform with commercial practice.