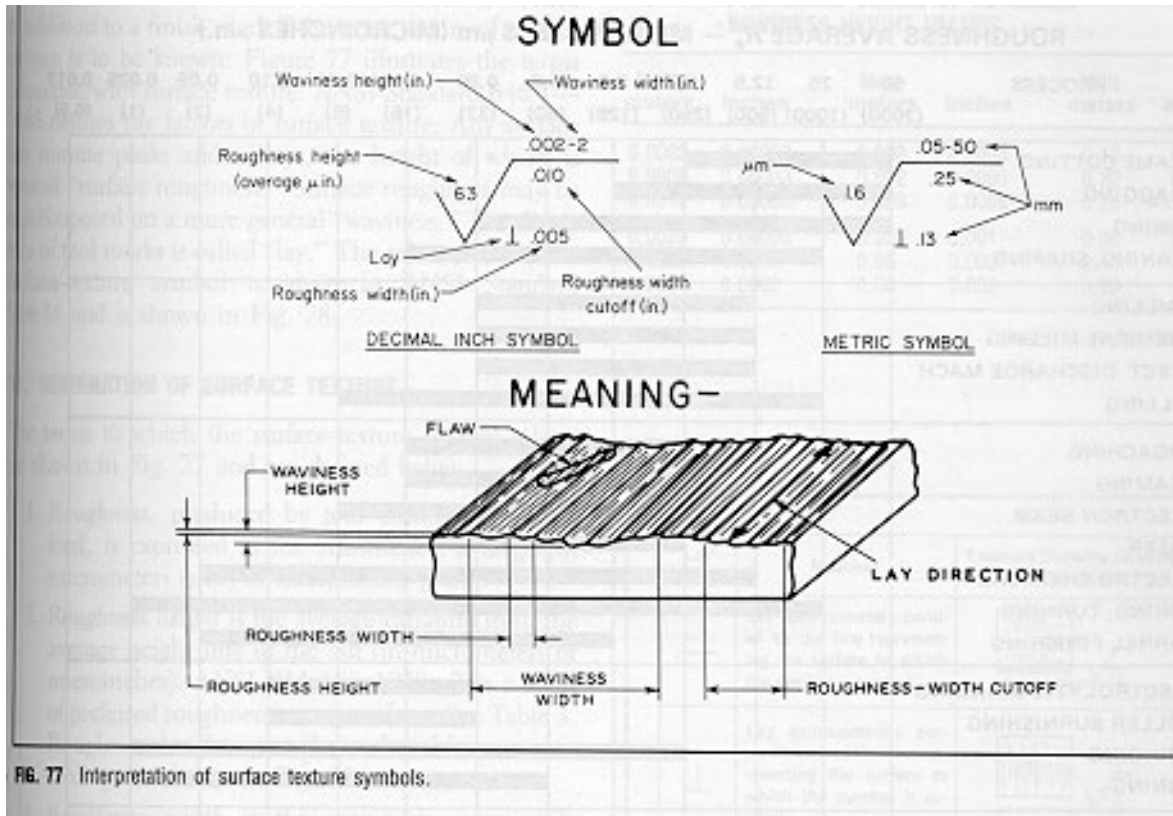


SURFACE QUALITY MARKS

Simple dimensioning of the height, width and depth of a part indicates little of the surface condition of that part. A surface could be in as-cast condition, or it could be machined by various methods giving varying degrees of roughness. In detail or working drawing, aside from the dimensioning, surface quality and extra work on the workpiece must be represented. These representations are made by surface quality marks and by explanation.



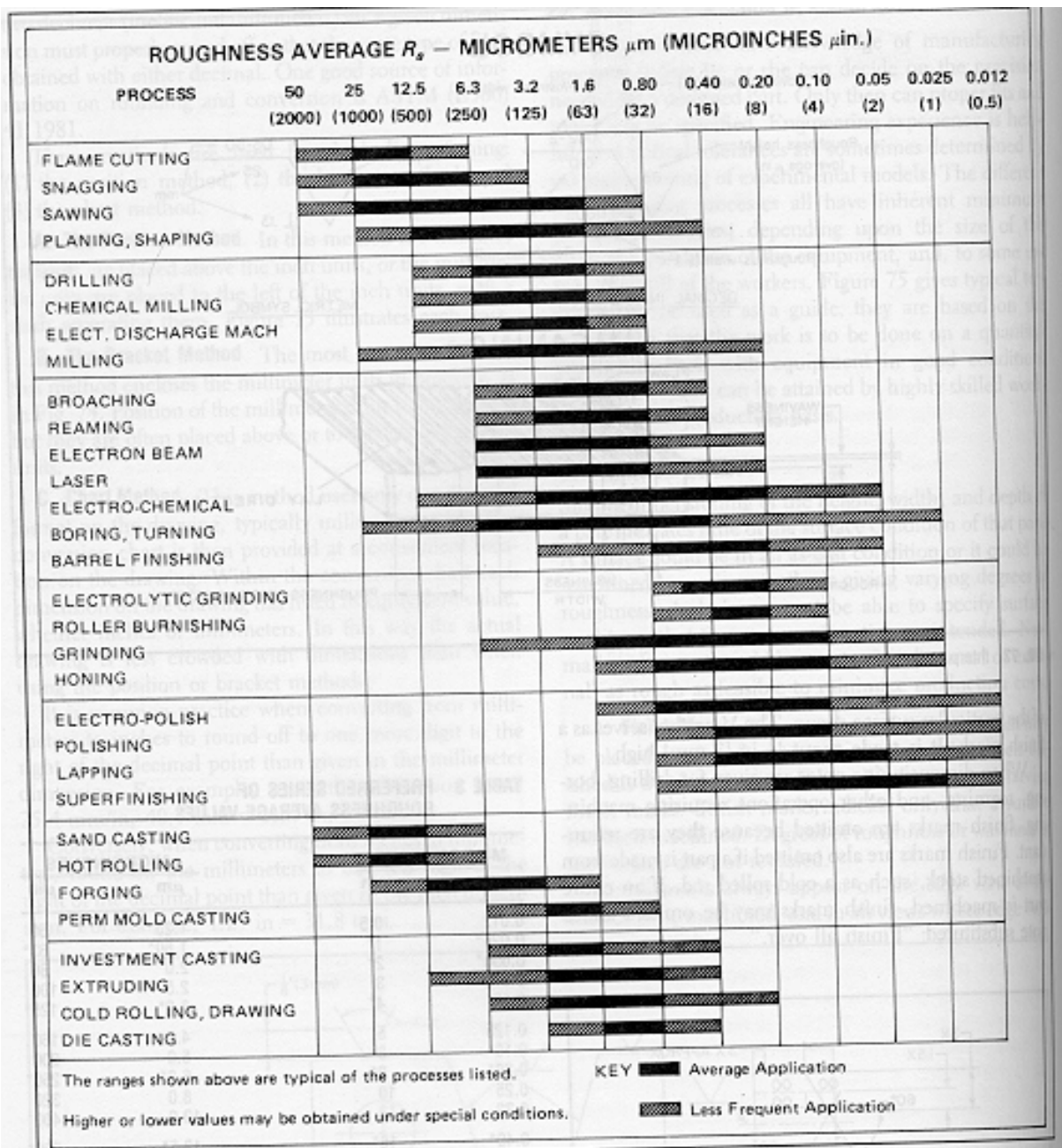
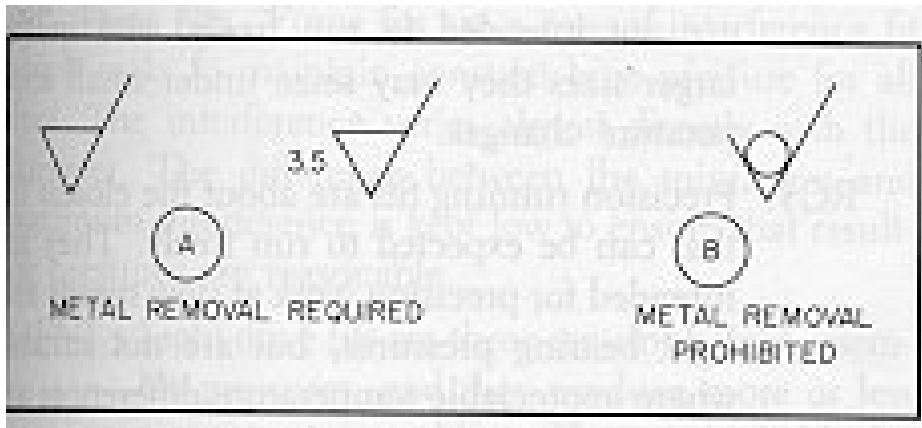

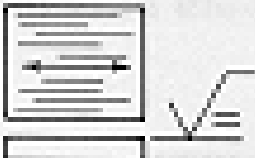

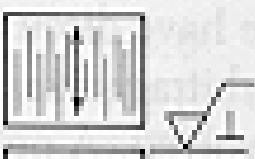

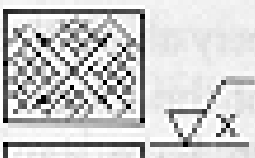

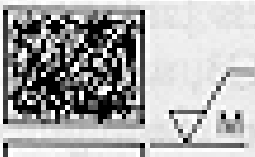

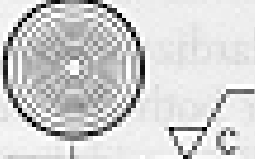

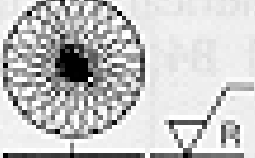

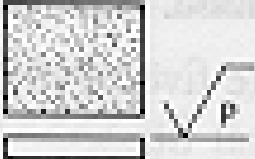
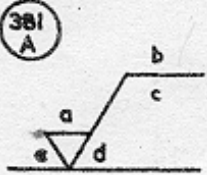
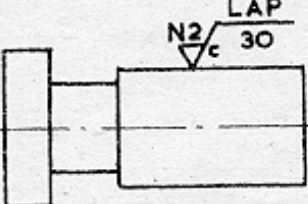

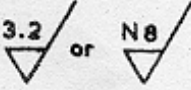
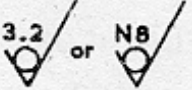
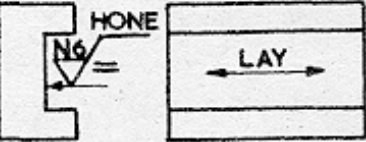

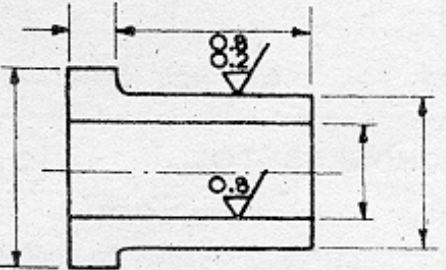
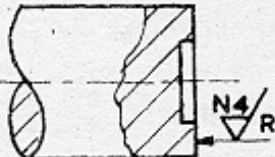







FIG. 79 Roughness heights as related to machine finishes. (ANSI B46.1—1985)



Lay Symbol	Meaning	Example Showing Direction of Tool Marks
	Lay approximately parallel to the line representing the surface to which the symbol is applied.	
	Lay approximately perpendicular to the line representing the surface to which the symbol is applied.	
	Lay angular in both directions to line representing the surface to which the symbol is applied.	
	Lay multidirectional.	
	Lay approximately circular relative to the center of the surface to which the symbol is applied.	
	Lay approximately radial relative to the center of the surface to which the symbol is applied.	
	Lay particulate, non-directional, or protuberant.	

USAGE	MACHINING & SURFACE TEXTURE										SYMBOLS		
<p>381 A</p>  <p>a Roughness value b Method: treatment: coating c Sampling length d Direction of lay e Machining allowance</p>	<p>APPLICATION</p>  <p>381 D</p>										 para to plane		
<p>381 B</p> <p>obligatory</p>  <p>3.2 or N8</p> <p>prohibited</p>  <p>3.2 or N8</p>	<p>381 E</p> 										 perp to plane		
<p>APPLICATION</p> <p>381 C</p>  <p>3.2 ALL OVER EXCEPT AS STATED</p>												 <p>381 F</p>	 crossed
m^{-6} or mm^{-3} = 1 micrometre										Symbol μm		 multi lay	
<p>FINISHES:</p> <p>MACHINING GRINDING</p> <p>PLATING LAPPING</p> <p>CHEMICAL HONING</p> <p>381 F</p>										 circular			
<p>radial</p> 												 circular	
micrometre	50	25	12.5	6.3	3.2	1.6	0.8	0.4	0.2	0.1	0.05	0.025	
Roughness number	N12	N11	N10	N9	N8	N7	N6	N5	N4	N3	N2	N1	