

USEFULINFORMATION

Surface Quality

SURFACE QUALITY

Extracted from BS970 Part 3 1991

12.3 Surface condition

12.3.1.1 Surface defects shall not exceed the maximum values given in tables 7 – 10 in bars supplied in the cold drawn and cold drawn and ground condition.

Table 7. Rounds, squares and hexagons in sizes from 10 mm up to and including 100 mm diameter or across flat: maximum permissible surface defects

Steel Type	Maximum permissible defect depth as percentage of section		
	%		
Balanced free-cutting	2.00		
Killed free-cutting	1.25		
Killed carbon	1.00		
Killed coarse grain	2.00		
Hot or cold forging	0.75		
Low alloy and stainless	0.75		

12.3.1.2 The minimum rejectable defect depth for balanced free-cutting, killed free-cutting, killed carbon and killed coarse grain steels shall be 0.25mm irrespective of section.

Table 8. Flats greater than 105 mm wide in free-cutting, semi free-cutting and carbon steels: maximum permissible surface defects.

Thickness	Maximum permissible defect depth on wider or flat faces		
	Widths > 105 ≤ 160mm	Widths > I60mm	
mm	mm	mm	
> 3 ≤ 10	0.20	0.20	
> 10 ≤ 18	0.25	0.25	
> 18 ≤ 30	0.30	0.45	
> 30 ≤ 50	0.50	0.80	
> 50 ≤ 80	0.70	1.00	
> 80 ≤ 105	0.80	1.00	
> 105	1.00	1.00	

12.3.1.3 The maximum permissable defect depth on the surfaces of the narrower or edge faces of flats in qualities and sizes covered by table 8 shall be Imm

Table 10. Flats equal to or less than 105mm wide in free-cutting. semi free-cutting and carbon steels: maximum permissible defect depths

Maximum permissible defect depths					
Wider of flat face	Narrower or edge face				
	Widths				
	≤ 30mm	≤ 30mm ≤ 50mm	≤ 50mm ≤ 80mm	≤ 80mm ≤ 105mm	
mm	mm	mm	mm	mm	
0.2					
0.3					
0.4	> 0.40	> 0.65	> 0.80	> 1.00	
0.6					
0.7					
	mm 0.2 0.3 0.4 0.6	Wider of flat face Narrower or edge face Widths ≤ 30mm mm mm 0.2 0.3 0.4 0.6	Wider of flat face Narrower or edge face Widths ≤ 30mm ≤ 30mm ≤ 50mm mm mm mm 0.2 0.3 0.4 0.6 0.40 0.65	Wider of flat face Narrower or edge face Widths ≤ 30mm ≤ 50mm ≤ 50mm ≤ 50mm ≤ 80mm mm mm mm 0.2 0.3 0.4 0.6	

NOTE: The defect is to be measured perpendicular to the bar surface

Whilst every effort has been taken to ensure the accuracy of this publication, Acton Bright Steel Ltd cannot accept responsibility for any errors, omissions or mis-statements. Acton Bright Steel Ltd also reserves the right to change all or any part of the information contained within this data sheet without notice.