

ULTRASONIC TESTS OF STEEL BARS  
 Classes of Tolerance  
 According to norm **UNI EN 10308** : 2004

Tab. 2 - Quality classes, recording level and acceptance criteria for ferritic and martensitic steel bars

Parameter	Quality Class			
	1	2	3	4
<b>Recording level</b>				
Equivalent flat-bottomed holes (EFBH) $d_{eq}$ mm <sup>a)</sup>	> 8	> 5	> 3	> 2
Ratio R for rapid backwall echo reduction <sup>b) c)</sup>	≤ 0,1	≤ 0,3	≤ 0,5	≤ 0,5
<b>Acceptance criteria</b>				
EFBH (isolated point type discontinuities) $d_{eq}$ mm <sup>a)</sup>	≤ 12	≤ 8	≤ 5	≤ 3
EFBH (Extended or grouped point type discontinuities) $d_{eq}$ mm <sup>a)</sup>	≤ 8	≤ 5	≤ 3	≤ 2
a) $d_{eq}$ = Equivalent diameter or flat-bottomed hole.				
b) $R = \frac{F_n}{F_{o,n}}$				
where:				
n = 1 for $t \geq 60$ mm; ( $t$ = thickness)				
n = 2 for $t < 60$ mm;				
$F_n$ = amplitude (screen height) of the n <sup>th</sup> reduced backwall echo;				
$F_{o,n}$ = amplitude (screen height) of the n <sup>th</sup> backwall echo in the nearest discontinuity-free area at the same range as $F_n$ .				
c) If the reduction in backwall echo exceeds the recording level, this shall be further investigated. Ratio R applies only to rapid reduction of backwall echo caused by the presence of a discontinuity.				