

# Abrasion resistant steel plate standard

## HARD360 Flatness specification

Thickness, mm	Flatness in 1 m, mm
≤15	≤12
>15~20	≤9
>20	≤6

## HARD360 Chemical composition (mass%)

Steel grade	C	Si	Mn	P	S	Cr	Mo	Ni	B	Al	Ti
B-HARD360	≤0.20	≤1.00	≤1.70	≤0.015	≤0.010	≤1.00	≤0.60	≤0.80	≤0.004	≤0.060	≤0.030

## HARD360 Mechanical property

Steel grade	Thickness /mm	Brinell hardness HB2.5/187.5	Tensile test		90° Cold bending	Impact test		
			Rm, Mpa	A50, %		Grade	Temperature	Impacting energy
B-HARD360	10~30	370~440	≥1100	≥9	D=3a	A	.....	.....
						B	20°C	≥30J
						C	0°C	≥30J
	>30~50	360~430	≥1050	≥9		D	-20°C	≥30J
						E	-40°C	≥30J

Noted: Criterion of impacting energy: it is qualified what the average value of three samples is greater than above specified value(Not limited to unit value); allow to review if the initial inspection is unqualified, it is qualified for review what the average value of three samples is greater than above specified value(Not limited to unit value).

# Abrasion resistant steel plate standard

## HARD400 Flatness specification

Thickness, mm	Flatness in 1 m, mm
$\leq 15$	$\leq 12$
$> 15 \sim 20$	$\leq 9$
$> 20$	$\leq 6$

## HARD400 Chemical composition (mass%)

Steel grade	C	Si	Mn	P	S	Cr	Mo	Ni	B	Al	Ti
B-HARD400	$\leq 0.24$	$\leq 1.00$	$\leq 1.90$	$\leq 0.015$	$\leq 0.010$	$\leq 1.00$	$\leq 0.60$	$\leq 0.80$	$\leq 0.004$	$\leq 0.060$	$\leq 0.040$

## HARD400 Mechanical property

Steel grade	Thickness /mm	Brinell hardness HB2.5/187.5	Tensile test		90° Cold bending	Impact test		
			Rm, Mpa	A50, %		Grade	Temperature	Impacting energy
B-HARD400	10~30	370~470	$\geq 1200$	$\geq 9$	D=3a	A	.....	.....
						B	20°C	$\geq 30J$
	C	0°C	$\geq 30J$					
	D	-20°C	$\geq 30J$					
	E	-40°C	$\geq 30J$					
	>30~50	360~460	$\geq 1150$	$\geq 9$				

Noted: Criterion of impacting energy: it is qualified what the average value of three samples is greater than above specified value(Not limited to unit value); allow to review if the initial inspection is unqualified, it is qualified for review what the average value of three samples is greater than above specified value(Not limited to unit value).



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## HARD450 Flatness specification

Thickness, mm	Flatness in 1 m, mm
≤15	≤12
>15~20	≤9
>20	≤6

## HARD450 Chemical composition (mass%)

Steel grade	C	Si	Mn	P	S	Cr	Mo	Ni	B	Al	Ti
B-HARD450	≤0.30	≤0.60	≤1.50	≤0.015	≤0.010	≤1.20	≤0.60	≤0.80	≤0.004	≤0.050	≤0.030

## HARD450 Mechanical property

Steel grade	Thickness /mm	Brinell hardness HB2.5/187.5	Tensile test		90° Cold bending	Impact test		
			Rm, Mpa	A50, %		Grade	Temperature	Impacting energy
B-HARD450	10~30	420~490	≥1300	≥9	D=3a	A	.....	.....
						B	20°C	≥30J
						C	0°C	≥30J
	>30~50	410~480	≥1250	≥9		D	-20°C	≥30J
	E	-40°C	≥30J					

Noted: Criterion of impacting energy: it is qualified what the average value of three samples is greater than above specified value(Not limited to unit value); allow to review if the initial inspection is unqualified, it is qualified for review what the average value of three samples is greater than above specified value(Not limited to unit value).

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## HARD500 Flatness specification

Thickness, mm	Flatness in 1 m, mm
$\leq 15$	$\leq 12$
$> 15 \sim 20$	$\leq 9$
$> 20$	$\leq 6$

## HARD500 Chemical composition (mass%)

Steel grade	C	Si	Mn	P	S	Cr	Mo	Ni	B	Al	Ti
B-HARD500	$\leq 0.40$	$\leq 0.60$	$\leq 1.90$	$\leq 0.015$	$\leq 0.010$	$\leq 1.50$	$\leq 1.50$	$\leq 1.00$	$\leq 0.004$	$\leq 0.060$	$\leq 0.040$

## HARD500 Mechanical property

Steel grade	Thickness /mm	Brinell hardness HB2.5/187.5	Tensile test		90° Cold bending	Impact test		
			Rm, Mpa	A50, %		Grade	Temperature	Impacting energy
B-HARD500	10~30	470~540	$\geq 1400$	$\geq 8$	D=3a	A	.....	.....
						B	20°C	$\geq 30J$
	C	0°C	$\geq 30J$					
	D	-20°C	$\geq 30J$					
	E	-40°C	$\geq 30J$					
	>30~50	460~530	$\geq 1350$	$\geq 8$				

Noted: Criterion of impacting energy: it is qualified what the average value of three samples is greater than above specified value(Not limited to unit value); allow to review if the initial inspection is unqualified, it is qualified for review what the average value of three samples is greater than above specified value(Not limited to unit value).