

# HARDROCK® by EIPA



Wear-resistant steel in the desired shape.

EIPA **HARDROCK**®: A particularly impact- and wear-resistant steel in the form of ready-to-install components for your applications where a combination of hardness and toughness is called for, ideal for use in all areas of mechanical engineering with high mechanical stress and abrasion.

Its wear resistance is significantly higher than that of conventional steels. EIPA **HARDROCK**® is especially hard and cold-formable, and its extremely high strength makes it possible to reduce the weight of your components in comparison to conventional steels.

EIPA **HARDROCK**® is very ideally suited for welding, eliminating the need for preheating for thin sheets.

## Chemical composition

Melt analysis, guaranteed values (proportions by mass in %)

Steel grades	C	Si	Mn	P	S	Al <sub>tot.</sub>	Dr	Mo	B	Ti
HARDROCK® 400	0,17	0,60	2,0	0,025	0,010	0,020	1,00	0,50	0,005	0,050
HARDROCK® 450	0,22	0,60	2,0	0,025	0,010	0,020	1,00	0,50	0,005	0,050
HARDROCK® 500	0,31	0,60	2,0	0,025	0,010	0,020	1,00	0,50	0,005	0,050

Carbon equivalents, reference values for carbon equivalents

Steel grades	Sheet thickness mm	Mass percentages	
		CEV	CET
HARDROCK® 400	15	0,48	0,29
	100	0,64	0,37
HARDROCK® 450	50	0,55	0,37
HARDROCK® 500	30	0,52	0,39

## Hardness

Steel grades	Hardness HB
HARDROCK® 400	360 - 440
HARDROCK® 450	410 - 490
HARDROCK® 500	460 - 540

## Mechanical properties

Steel grades	Yield strength MPa	Tensile strength MPa	Elongation at break $L_0 = 5,65 \sqrt{S_0}$
HARDROCK 400	1.000	1.250	10
HARDROCK 450	1.100	1.400	9
HARDROCK 500	1.200	1.550	8

## Dimensions

Steel grades	Thickness (mm)
HARDROCK® 400	3 - 100
HARDROCK® 450	3 - 50
HARDROCK® 500	10 - 30

# HARDROCK® 400 450 500 BUILT TO DIE HARD

Rev. 07-2018:01 - Page 1 of 1

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WEAR PROTECTION

