



# 宁波亚升铸业有限公司

## NINGBO YASHENG CASTING INDUSTRY CO., LTD.

ADD: INDUSTRIAL PARK, HENGXI TOWN, YINZHOU, NINGBO, CHINA TEL: 0574-88220258 FAX: 0574-88220259

### WAER SYSTEM--LAMINATED WHITE IRON

**Laminated Wear Blocks** are unique wear resistant materials in that they combine very high wear resistant qualities of a white iron (ASTM A532 15/3CrMo, 700BHN – 63HRC) with a weldable & high impact toughness mild steel through a metallurgical bond to create a product that is exceptionally resistant to impact and abrasion while retaining.

A. Chemical

C	Cr	Mn	Mo	Cu	P	Si	S	B, V, Nb
2.5-3.5	15-18	0.5-1.0	0.5-2.5	0.5-1.0	0.02max	0.5-1.0	0.02max	0.1-0.5

B. Mechanical Property:

- 1) Tensile Strength 630Mpa Min.
- 2) Shearing Strength 250Mpa Min.
- 3) Hardness 63 HRC

C. Application---the ideal working temperature for wear bars should not exceed 400°C

- |                |                |                   |                       |                          |
|----------------|----------------|-------------------|-----------------------|--------------------------|
| Wear Pads      | Lip Protectors | Dump Hoppers      | Concentration Bins    | Hopper Edges             |
| Jaw Crushers   | Screen Plates  | Crusher Hoppers   | Buckets               | Shovels                  |
| Chute Linings  | Bucket Liners  | Vibratory Feeders | Transition Pieces     | Arm & Hub Liners         |
| Ore Chutes     | Floor Liners   | Rock Box Edges    | Coal Transfer Chutes  | Bolt Protectors          |
| Crusher Chutes | Loaders        | Surge Bin Liners  | Apron Feeder Liners   | Truck Bed Liners         |
| Tripper Chutes | Wear Aprons    | Rock Box Liners   | Loading Pocket Liners | Impact Wall Liners       |
| Flop Gates     | Knife Inserts  | Skip Liners       | Hammer Mill Inserts   | Bucket Wheel Protection  |
| Bucket Liners  | Crusher Bars   | Draglines         | Rolling Mill Guides   | Conveyor Transfer Points |



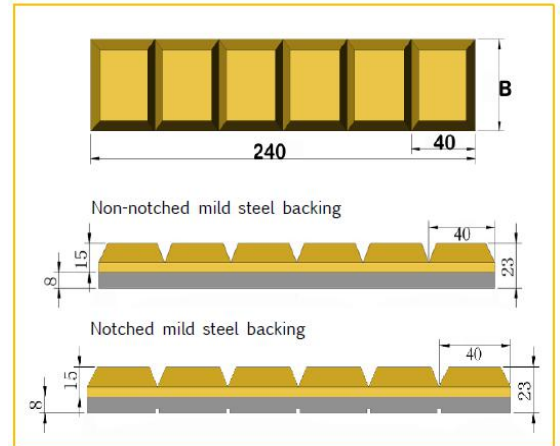
### Chocky Bars

The unique, formable design of Hyster-Wear chocky bars are available in various lengths, grades and sizes and can also be customized as per the clients specific need. Applications for Chocky Bars are wide and varied, ranging from specific wear protection on buckets for loaders, excavators and draglines machines, or for weld-on hammer tips for the re-cycling industry, or chute linings and rock box edges. They are easy to use and install. They can be bent, cut and formed to suit different surfaces.



The standard is 23mm thick, length is 240mm, width could be from 25mm from 150mm. We can also produce according to your special requests

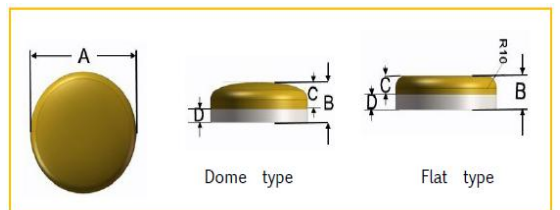
Item No.	Size(mm)	Dimension(mm)				N.W. (kg)
		A	B	C	D	
CB 25	240X25X23	240	25	15	23	0.9
CB 40	240X40X23	240	40	15	23	1.5
CB 50	240X50X23	240	50	15	23	1.9
CB 65	240X65X23	240	65	15	23	2.5
CB 80	240X80X23	240	80	15	23	3.2
CB 90	240X90X23	240	90	15	23	3.5
CB 100	240X100X23	240	100	15	23	3.9
CB 130	240X130X23	240 </td <td>130</td> <td>15</td> <td>23</td> <td>5.4</td>	130	15	23	5.4
CB 150	240X150X23	240	150	15	23	6



### Wear Buttons

Ideal for smaller areas that require materials resistant to abrasion and impact.

Item No.	Size(mm)	Dimension(mm)				N.W. (kg)
		A	B	C	D	
WB 60	60X27	60	27	17	10	0.7
WB 75	75X27	75	27	17	10	0.8
WB 90	90X27	90	27	17	10	1.4
WB 110	110X32	110	32	20	12	2.1
WB 115	115X32	115	32	20	12	2.5
WB 150	150X41	150	41	25	16	5.7



### Wear Donuts



Item No.	Size(mm)	Dimension(mm)					N.W. (kg)
		A	B	C	D	E	
WD 75	75X25	75	25	17	8	25	0.7
WD 100A	100X25	100	25	17	8	50	1
WD 100B	100X32	100	32	24	8	70	1
WD 130	130X23	130	23	15	8	80	1.3
WD 148	148X35	148	35	25	10	108	2.2



**Standard Wear Bars**

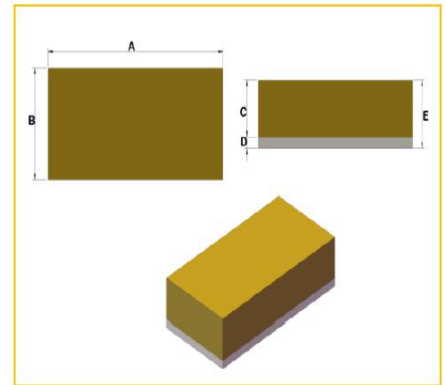
Wear bars are available in thickness from 25 to 100mm, and width from 25 to 300mm, and in different lengths.

These bars offer superior wear life compared to conventional steel alloys such as manganese, Ni-hard and hardfacing wear plates.

- Better wear resistance performance
- Durable
- Fine polish
- Cost effective
- Excellent quality



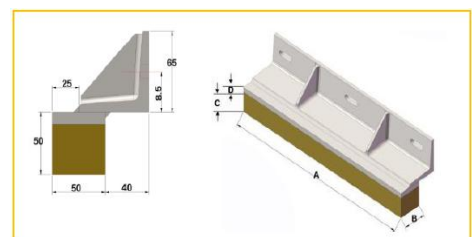
Item No.	Size(mm)	Dimension(mm)					N.W. (kg)
		A	B	C	D	E	
HSd 200A	200X25X25	200	25	15	10	25	1
HSd 200B	200X75X75	200	75	63	12	75	8.9
HSd 300A	300X25X25	300	25	15	10	25	1.5
HSd 153	153X38X33	153	38	25	8	33	1.5
HSd 300B	300X38X33	300	38	25	8	33	3
HSd 190A	190X50X30	190	50	20	10	30	2.2
HSd 115	115X50X50	115	50	38	12	50	2.3
HSd 127	127X50X50	127	50	38	12	50	2.4
HSd 150A	150X50X50	150	50	40	10	50	2.9
HSd 190B	190X50X50	190	50	40	10	50	3.7
HSd 210	210X50X50	210	50	38	12	50	4.1
HSd 230	230X50X50	230	50	38	12	50	4.5
HSd 294	294X50X50	294	50	40	10	50	5.8
HSd 300C	300X50X50	300	50	40	10	50	5.9
HSd 300D	300X150X60	300	150	48	12	60	21.1
HSd 432	432X50X50	432	50	38	12	50	8.5
HSd 450	450X38X31	450	38	25	6	31	4.2
HSd 600	600X50X50	600	50	38	12	50	11.8
HSd 150B	150X75X39	150	75	29	10	39	3.4
HSd 150C	150X75X50	150	75	40	10	50	4.4
HSd 150D	150X75X60	150	75	50	10	60	5.3



**Note: Studs Extra**  
If arc studs are required, please stipulate the size and position required.

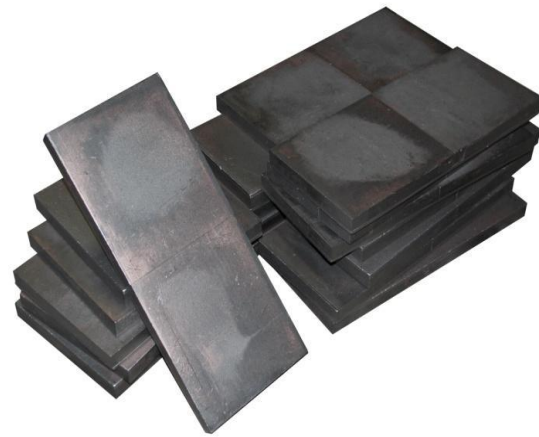
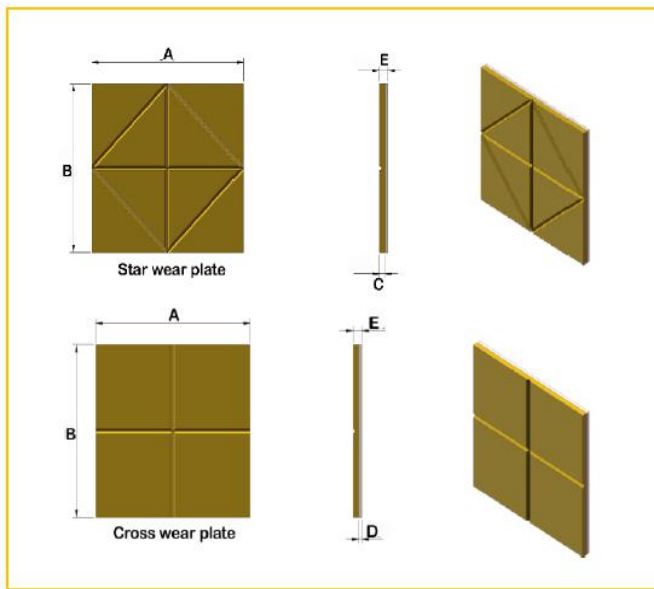
**Microledges**

Item No.	Size(mm)	Dimension(mm)				N.W. (kg)
		A	B	C	D	
HM 115	115X50	115	50	40	10	3.2
HM 127	127X50	127	50	38	12	3.6
HM 150	150X50	200	50	40	10	4.2
HM 190	190X50	190	50	38	12	5.5
HM 210	210X50	210	50	38	12	6
HM 230	230X50	230	50	38	12	6.6
HM 432	432X50	432	50	38	12	12.5



**Notched Wear Plates - 3mm deep notch**

Typical application: Feeder chute and hopper wear protection

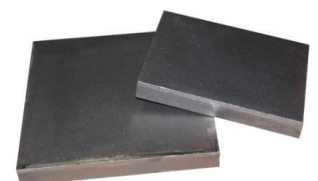
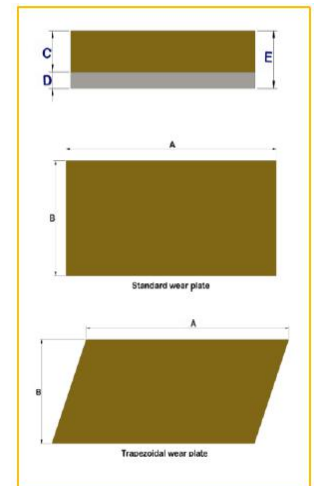


Type	Item No.	Size(mm)	Dimension(mm)					N.W. (kg)
			A	B	C	D	E	
Star	WPs 400	400X400X23	400	400	15	8	23	28.7
Cross	WPC 200	200X200X12	200	200	6	6	12	3.8
	WPC 300	300X300X12	300	300	6	6	12	8.5

**Note: Studs Extra**  
If arc studs are required, please stipulate the size and position required.

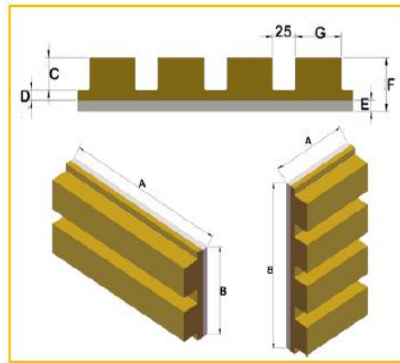
**Wear Plates-Standard type/Trapezoidal type**

Type	Item No.	Size(mm)	Dimension(mm)					N.W. (kg)
			A	B	C	D	E	
Standard	WP 200-18	200x200x18	200	200	12	6	18	5.7
	WP 200-20	200x200x20	200	200	14	6	20	6.3
	WP 300A	300x150x20	300	150	14	6	20	7
	WP 250	250x250x20	250	250	14	6	20	9.8
	WP 300C	300x300x18	300	300	12	6	18	12.7
	WP 300B	300x300x20	300	300	14	6	20	14.1
	WP 305	305x150x24	305	150	18	6	24	8.6
	WP 300D	300x150x25	300	150	19	6	25	8.8
	WP 300E	300x300x25	300	300	19	6	25	17.7
	WP 445	445x445x25	445	445	19	6	25	38.9
	WP 301	301x200x28	301	200	18	10	28	13.2
	WP 294A	294x144x30	294	144	20	10	30	10.2
	WP 294B	294x294x30	294	294	20	10	30	20.4
	WP 300F	300x150x30	300	150	20	10	30	10.6
Trapezoidal	WPT 190	190x212.5x25	190	212.5	17	8	25	7.9
	WPT 241	241x290.5x30	241	290.5	22	8	30	19.5





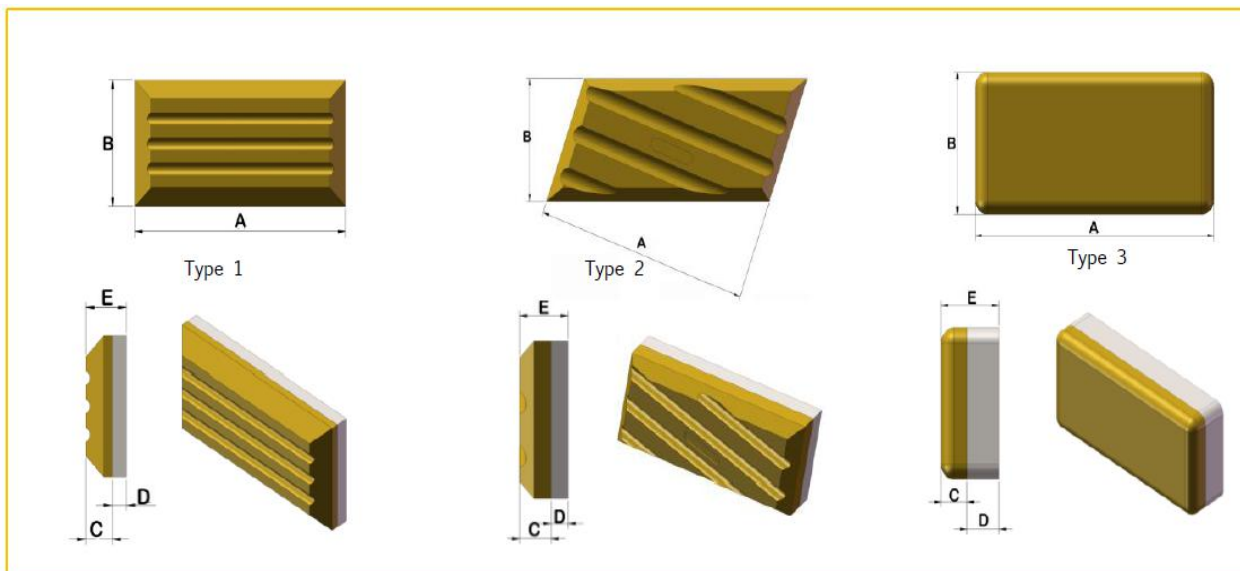
Rockbox Liners



Type	Item No.	Size (mm)	Dimension(mm)							N.W. (kg)
			A	B	C	D	E	F	G	
RL 300A	300X300X50	300	300	30	10	10	10	50	50	28.7
RL 300B	300X148X50	300	148	30	10	10	10	50	50	13.8
RL 148A	148X452X50	148	452	30	10	10	10	50	50	21.1
RL 148B	148X300X50	148	300	30	10	10	10	50	50	14

Skid Wear Bars

Bottom and Runner Protection for Shovels and Buckets. The Skid Bar is available in various lengths, widths and sizes, wherein the surface of the bar is smoothly shaped.

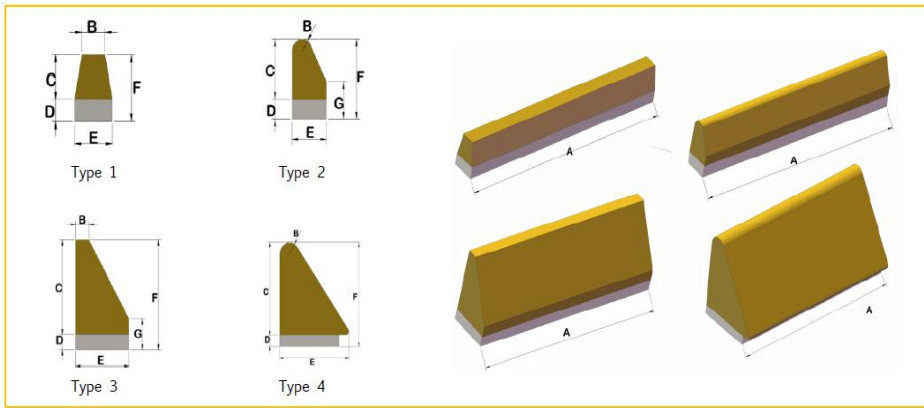


Type	Item No.	Size (mm)	Dimension(mm)					N.W. (kg)
			A	B	C	D	E	
1	SB1-214	214X101X34	214	101	22	12	34	5.1
	SB1-302	302X101X34	302	101	22	12	34	7.3
	SB1-154	154X101X34	154	101	22	12	34	3.7
	SB1-279	279X75X34	297	75	22	12	34	6.1
2	SB2-214L	214X101X34	214	101	22	12	34	5.9
	SB2-214R	214X101X34	214	101	22	12	34	5.9
	SB2-302L	302X101X34	302	101	22	12	34	8.4
	SB2-302R	302X101X34	302	75	22	12	34	8.4
	SB2-154L	154X101X34	154	101	22	12	34	4.2
	SB2-154R	154X101X34	154	75	22	12	34	4.2
3	SB3-250A	250X150X45	250	150	20	25	45	13.1
	SB3-200	200X150X45	200	150	20	25	45	10.5
	SB3-250B	250X250X45	250	250	20	25	45	21.9



**Shaped Wear Bars**

Shaped wear bars are wear bars in different shapes to suit specific applications. They are effectively used to prevent gouge wear that normally occurs in such place as bucket lips, loaders, crates etc.

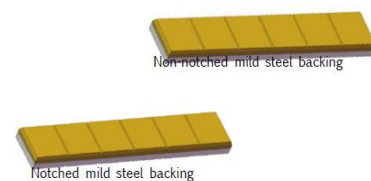
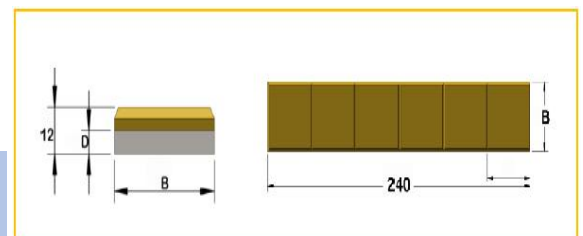


Type	Item No.	Size (mm)	Dimension(mm)							N.W. (kg)
			A	B	C	D	E	F	G	
1	SWB 200-1	200X13X30	200	13	20	10	20	30		0.8
	SWB 244-1	244X10X35	244	10	25	10	25	35		1.3
	SWB 202-1	202X10X35	202	10	25	10	25	35		1.1
2	SWB 275-2	275X5X29	275	5	21	8	16	29	16	0.9
3	SWB 200-3	200X25X59	200	3	47	12	25	59		1.5
	SWB 400-3	400X25X59	400	3	47	12	25	59		2.9
4	SWB 200-4	200X25X50	200	10	38	12	25	50		1.5
	SWB 400-4	400X25X50	400	10	38	12	25	50		2.9

**Wafer Strips**

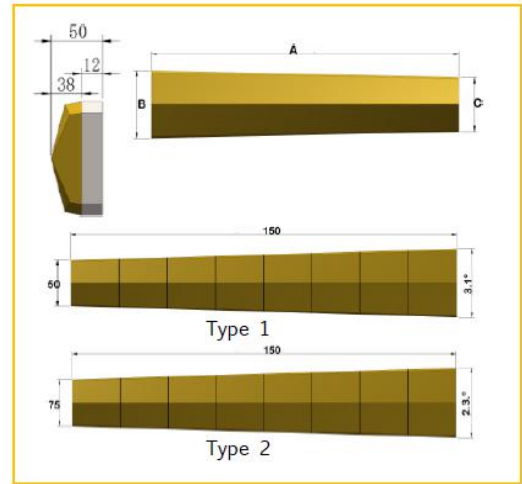
This model is easy to cut and shape on spoked surfaces. It also has low weight and high hardness, ideal for bucket wear protection.

Item No.	Size(mm)	Dimension(mm)				N.W. (kg)
		A	B	C	D	
WS 25	240X25X12	240	25	6	6	0.6
WS 40	240X40X12	240	40	6	6	0.9
WS 50	240X50X12	240	50	6	6	1.2
WS 65	240X65X12	240	65	6	6	1.6



**Grizzly Bars**

Type	Item No.	Size(mm)	Dimension(mm)			N.W. (kg)
			A	B	C	
1	GB1-105	150X137.5	305	150	137.5	13.6
	GB1-137.5	137.5X125	305	137.5	125	12.5
	GB1-125	125X112.5	305	125	112.5	11.2
	GB1-112.5	112.5X100	305	112.5	100	10
	GB1-100	100X87.5	305	100	87.5	8.8
	GB1-87.5	87.5X75	305	87.5	75	7.5
	GB1-75	75X62.5	305	75	62.5	6.3
	GB1-62.5	62.5X50	305	62.5	50	5.1
2	GB2-150	150X141	305	150	141	13.8
	GB2-141	141X131	305	141	131	12.9
	GB2-131	131X122	305	131	122	11.9
	GB2-122	122X113	305	122	113	11.1
	GB2-113	113X103	305	113	103	10.1
	GB2-103	103X94	305	103	94	9.2
	GB2-94	94X84	305	94	84	8.3
	GB2-84	84X75	305	94	75	7.4

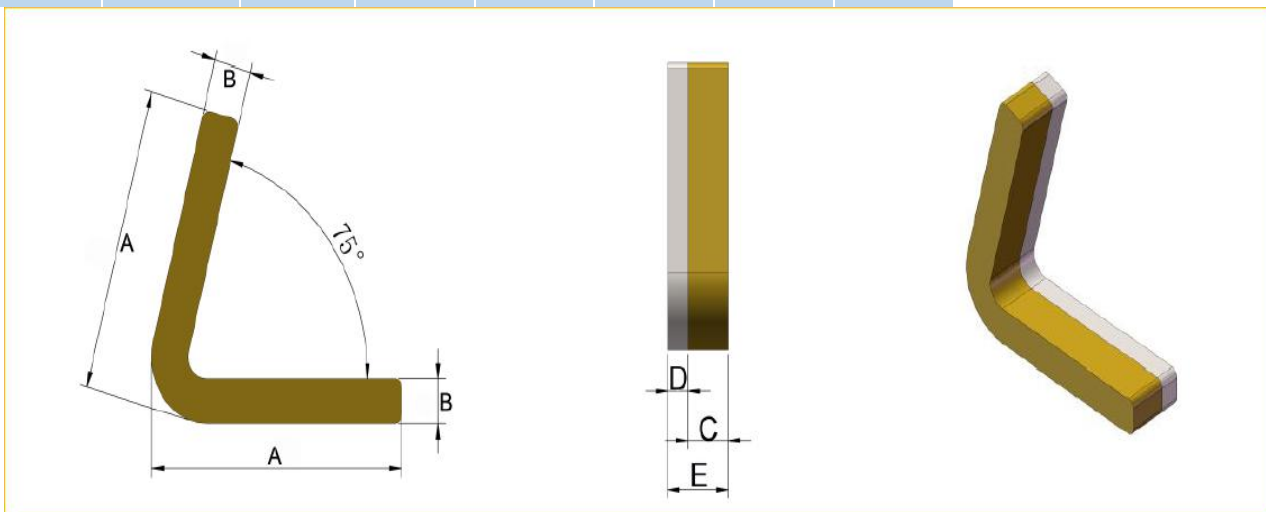


**Elbow Wear Bars**

Apply to special shape wear-resisting layer to stand up to the toughest impact and wear abrasion.

Ideal for buckets, rock boxes, truck bodies, chutes etc.

Item No.	Size(mm)	Dimension(mm)					N.W. (kg)
		A	B	C	D	E	
HE 120	120X120X28	120	30	18	10	28	1.3
HE 180	180X180X32	180	40	22	10	32	30



### Shredder Hammer Tips

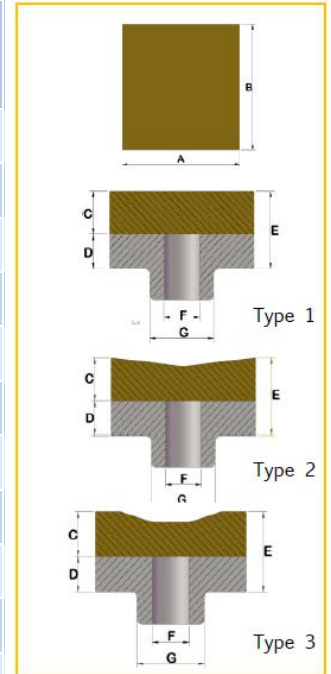
These are bi-metallic composites having 700BHN hardness and available in various sizes and shapes, shredder hammer tips can be used in sugar or coal industry to do crushing and shredding performance, it has excellent impact and abrasion resistance properties & enhanced service life.



These hammers find application in  
 i) Sugar Industry  
 ii) Mining & Mineral Processing Industry.  
 iii) Cement & Steel Industry

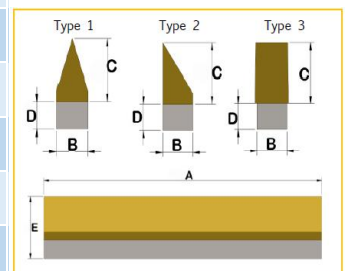
**Note:**  
 The standard size of F is 7/8"-14UNF, please inform us when other thread dimension is required.

Type	Item No.	Size (mm)	Dimension(mm)					N.W. (kg)
			A	B	C	D	E	
1	HC1 90-90	90X90X45	90	90	25	20	45	2.9
	HC1 90-50	90X50X45	90	50	25	20	45	1.6
	HC1 90-54	90X54X66	90	54	48	18	66	2.5
	HC1 80-80	80X80X45	80	80	25	20	45	2.4
	HC1 100-100	100X100X45	100	100	25	20	45	3.6
	HC1 80-56	80X56X45	80	56	25	20	45	1.6
2	HC2 90-90	90X90X50	90	90	30	20	50	3
	HC2 80-56	80X56X50	80	56	30	20	50	1.8
3	HC3 90-90	90X90X50	90	90	30	20	50	3
	HC3 90-50	90X50X55	90	50	35	20	55	1.8
	HC3 90-56	90X56X55	90	56	35	20	55	1.9



### Knife Edges

Type	Item No.	Size (mm)	Dimension(mm)					N.W. (kg)
			A	B	C	D	E	
1	HK1 203-19	203X19X50	203	19	38	12	50	1.1
	HK1 203-22	203X22X50	203	22	38	12	50	1.3
	HK1 203-25	203X25X50	203	25	38	12	50	1.5
	HK1 305-19	305X19X50	305	19	38	12	50	1.6
	HK1 305-22	305X22X50	305	22	38	12	50	1.9
	HK1 305-25	305X25X50	305	25	38	12	50	2.2
2	HK2 203-16	203X16X50	203	16	38	12	50	1
	HK2 203-25	203X25X62	203	25	50	12	62	1.7
	HK2 305-25	305X25X56	305	25	40	16	56	2.5
3	HK3 203-19	203X19X50	203	19	38	12	50	1.6
	HK3 203-25	203X25X50	203	25	38	12	50	2.1
	HK3 203-28	203X28X50	203	28	38	12	50	2.3





**NI-HARD PRODUCTS**

**NiHard** is a well-established white iron product alloyed with nickel and chromium to give significant abrasion and impact resistant properties. The structure of NiHard is composed of iron and chromium carbides, fixed in a matrix rendered martensitic by the nickel content. This structure allows NiHard to be utilised in abrasive and high impact conditions found throughout the construction, mining, manufacturing and mineral processing industries.

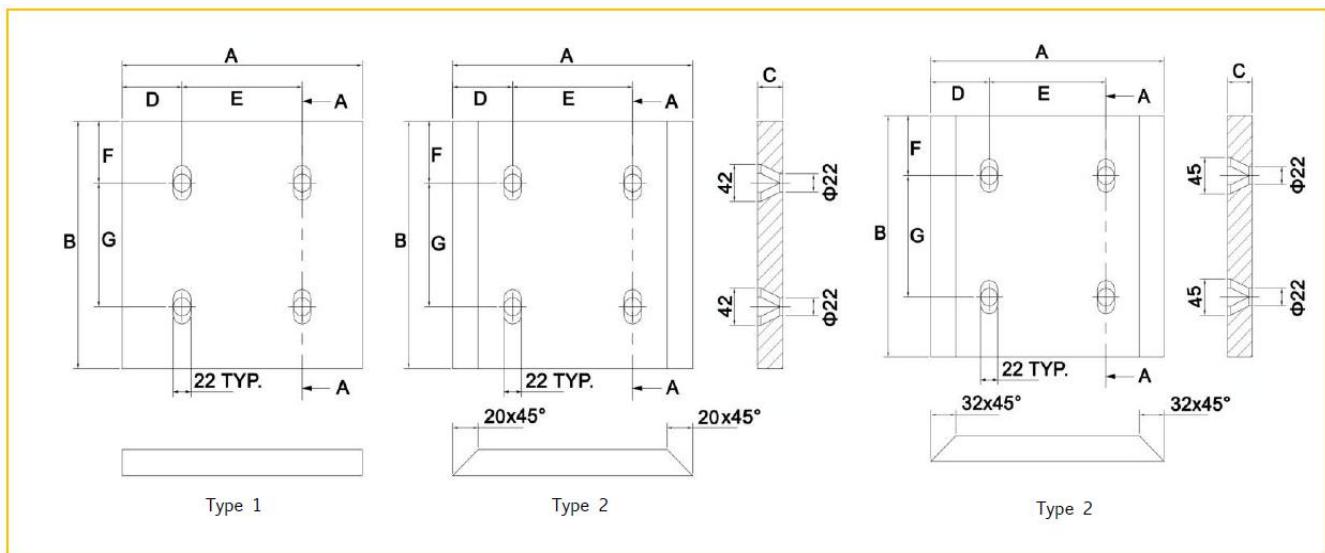
Our NiHard products include billets and liner plates that can be made to the customers' specification or supplied from our range of stock sizes. Our NiHard products can be custom designed to meet any situation regardless of any size and shape concerns. We can also supply cut and shaped liners to be strategically placed on fixed plant equipment so that a unique wear package can be created, maximising wear life. This makes NiHard the perfect material for chutes, drop boxes, bin and hopper liners.

We primarily supplies cast billet and liner plates produced to the NiHard 4 specifications. However, we can produce billets and liner plates from the following alloys on special request:

- > NiHard 1 & 2
- > 27 Chrome Alloy
- > 15/3 White Iron

**Note:**

1. Other sizes can be made on request.
2. Liners can be cut to size on request.
3. Bolts/Nuts/Washers are available on request.
4. Holes are to suit M20 fishtail bolt



**NIHARD WEAR LINERS**

Item No.	Type	Size(mm)	Dimension(mm)							N.W. (kg)
			A	B	C	D	E	F	G	
NW 2001	1	300X300X20	300	300	20	74	152	74	152	13.8
NW 2002	2	300X300X20	300	300	20	74	152	74	152	12.8
NW 2003	1	300X200X20	300	200	20	74	152	100	-	9.2
NW 2004	1	300X150X20	300	150	20	74	152	75	-	6.9
NW 2005	1	300X100X20	300	100	20	74	152	50	-	4.5
NW 2006	1	200X100X20	200	100	20	62.5	75	50	-	3
NW 3201	1	300X150X32	300	150	32	74	152	74	-	11
NW 3202	1	300X200X32	300	200	32	74	152	100	-	14.8
NW 3203	1	300X300X32	300	300	32	74	152	74	152	22
NW 3204	2	300X300X32	300	300	32	74	152	74	152	19.6
NW 3205	1	300X100X32	300	100	32	74	152	50	-	7.2
NW 3206	1	200X100X32	200	100	32	62.5	75	50	-	4.7

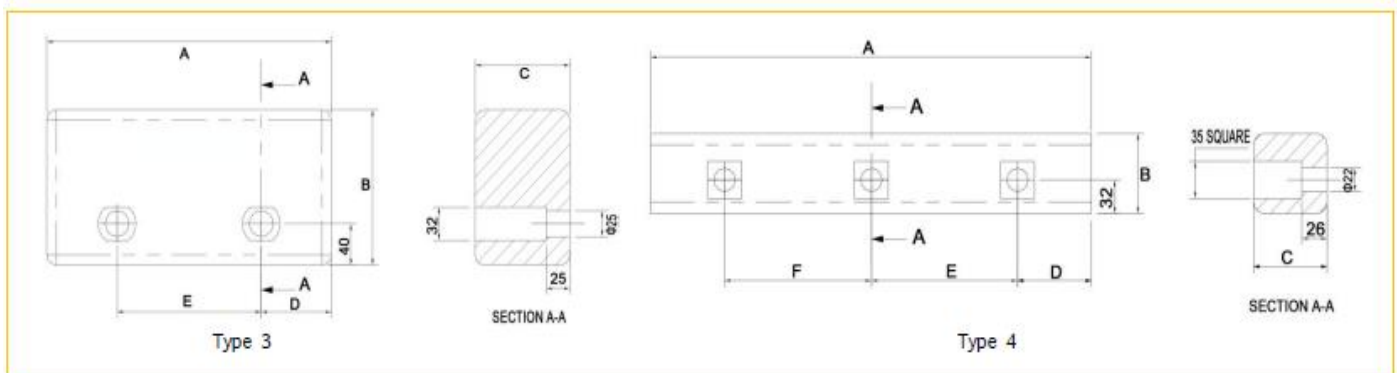
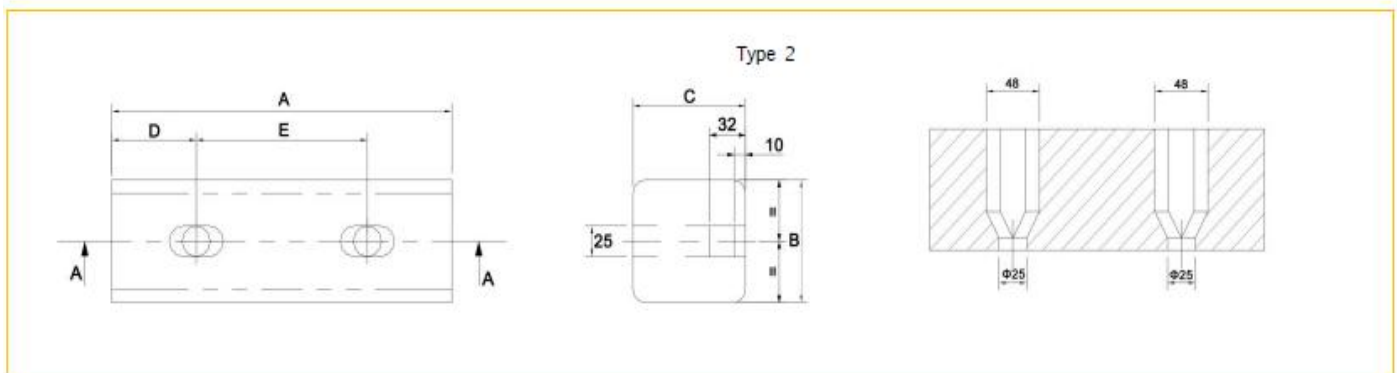
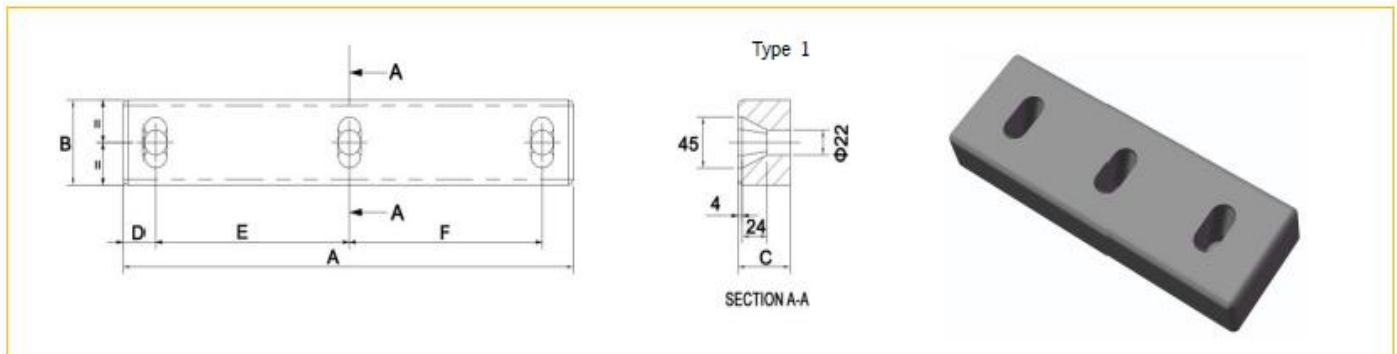
NI-HARD LINERS & BILLETS

Note:

1. Other sizes can be made on request.
2. Liners can be cut to size on request.
3. Bolts/Nuts/Washers are available on request.



Item No.	Type	Size (mm)	Dimension(mm)							Holes	N.W. (kg)
			A	B	C	D	E	F	G		
NB 128	1	128X75X50	128	75	50	30	68	-	-	M20 fishtail bolt	3.3
NB 210	1		210	75	50	30	150	-	-		5.7
NB 432	1	432X75X50	432	75	50	30	186	186	-		12
NB 302	2	302X100X100	302	100	100	75	152	-	-	M22 fishtail bolt	22
NB 454	2	454X100X100	454	100	100	75	304	-	-		33.8
NB 224	3	224X150X100	224	150	100	74	76	-	-	M20 heX head bolt	24.5
NB 300	3	300X150X100	300	150	100	74	152	-	-		33.4
NB 305	4	305X76X76	305	76	76	76.5	152	-	-	M20 square head bolt	12.5
NB 457	4	457X76X76	457	76	76	76.5	152	152	-		18.8



### Chromium Carbide Overlay Wear Plates

**OVERLAY-PLATE** is welded by chromium carbide overlay on a mild steel backing plate. Manufactured by our own design's welding machine with exclusive technique. OVERLAY-PLATE has excellent performance in abrasion resistant.

**CHEMICAL COMPOSITION** C 4.0%~5.5% Cr 21%~27%

**BACKING PLATE** Standard: SS400 mild steel or equivalent  
Stainless or others upon request

**HARDNESS** HV600±

**TOLERANCES** ± 1mm **HEAT RESISTANCE** Maximum: 400°C

**MICROSTRUCTURE** Mixture of high volume hexagonal shaped chromium carbide in tough austenitic and martensitic matrix(GRADE 2355)

**PENETRATION TO THE BASE METAL** 1.5mm

**COLD FORMING** Minimum Radius: 150mm( for 6+4 ) Suggested: using hydraulic press to bend plate

**CUTTING** Plasma( from backing plate side ) / Laser Cutting / Water Jet Knife

**APPLICATIONS**

- Ash liners
- Bucket & Lips
- Classifier
- Ore chutes
- Extension ring
- Sinter breaker bar
- Blast furnace bell & burden
- Drag liners
- Fan blades & Housings
- Discharge funnels
- Cement kilns
- Conveyor casings
- Elbow
- Duct
- Mine car liners
- Slag chutes
- Grizzly bars
- Steel plant
- Sinner plant
- Chute & Hopper liners
- Cyclones
- Dredge pump side plates
- Vibrator pan feeder liner
- Green Walt crushers



Standard Overlays	Weight sq/m(kg)	Standard Sheet Size(mm)	Overall Thickness (mm)
4 ON 4	62	1500X3000 / 1200X2400 / 1480X3050	8
4 ON 6	77	1500X3000 / 1200X2400 / 1480X3050	10
6 ON 6	92	1500X3000 / 1200X2400 / 1480X3050	12
5 ON 8	100	1500X3000 / 1200X2400 / 1480X3050	13
6 ON 8	108	1500X3000 / 1200X2400 / 1480X3050	14
5 ON 10	116	1500X3000 / 1200X2400 / 1480X3050	15
9 ON 10	146	1500X3000 / 1200X2400 / 1480X3050	19
10 ON 10	157	1500X3000 / 1200X2400 / 1480X3050	20
12 ON 12	162	1500X3000 / 1200X2400 / 1480X3050	24
17 ON 12	222	1500X3000 / 1200X2400 / 1480X3050	29

