

# Abrasion Resistant Steel Plate



## Applications

- Articulated dump trucks
- Buckets
- Bulldozer blades
- Cascades
- Cutting edges
- Hoppers/chutes
- Line pans
- Quarry screens & crushers
- Quarry trucks
- Tipper bodies
- Waste compaction equipment

## Key Benefits

- 400/450/500 Brinell available.
- Cut to optimum size.
- Fully accredited quality systems to ISO 9001, 14001 and 18001.
- Low CEV – easier bending, welding and machining.
- Wide area plate up to 12m x 3m.
- Delivered worldwide by our international logistics organisation.

Brown McFarlane offers the widest range of carbon and stainless steel plate, available ex-stock.

## Specifications/Grades

Abrazo 400  
Abrazo 450  
BHN 500

## Welding

Abrazo 400 can be welded under normal conditions (if you require advice on welding, machining or forming then please contact any one of our offices) using MMA, MOG and SAW without preheat, up to a combined thickness of 60mm, provided hydrogen controlled electrodes are used. Consumables should be dried in accordance with scale 'D' of BS 5135. Consumables should be chosen on the basis of whether or not the weld metal is exposed to wear conditions.

## Machining

Machining or drilling is more difficult due to hardness. For 400BHN use high-grade cobalt HSS E drilling tools and for 500BHN hard metal drilling tools are necessary.

## Forming

Abrasion steels can be readily cold formed. Compared with steels of lower yields, three factors should be considered:

- higher press forces
- a greater bend radius is required
- spring back.



## Available Sizes

Thickness: 3mm	Length: 3000mm	Width: 1500mm
Thickness: 4mm	Length: 6000mm	Width: 1500mm
Thickness: 5mm	Length: 6000mm	Width: 2000/2500mm
Thickness: 6mm	Length: 6000mm	Width: 1500/2500mm
Thickness: 8/10/12/15/20/25/30/35/40mm	Length: 12000mm	Width: 2000/2500/3000mm
Thickness: 45/50/60/70/80mm	Length: 8000mm	Width: 2000/2500/3000mm
Thickness: 90mm	Length: 6000mm	Width: 2000mm

100/110/120mm thickness available on request.

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## Flame Cutting

Material can be cut using conventional flame cutting practices without the need for preheat at ambient temperature. The following cutting parameters are recommended:-

Plate Thickness (mm)	Nozzle Size (LPN mm)	Cutting O <sub>2</sub> (Lb.in <sup>2</sup> )	Heating O <sub>2</sub> (Lb.in <sup>2</sup> )	Heating propane (Lb.in <sup>2</sup> )	Cutting speed (mm/min)	CEV max %
12.5	10-25	45	40	18	450	0.40
15.0	10-25	50	40	10	490	0.40
25.0	25-40	60	40	20	400	0.52
40.0	40-60	70	40	10	310	0.52
50.0	40-60	75	40	10	300	0.57
65-80	60-100	71	31	13	239	0.57

## Milling

Abrasion resistant steel can be machined by milling.

The following recommendations are given for general guidance:-

Steel Grade	Cutting Speed (mm/min)	Feed (mm/tooth)
Abrazo 400*	100	0.10-0.15

\* For further information on 450, 500 please contact us for details.

## Cold Bending

Where possible, cold bending should be carried out with the bend axis perpendicular to the rolling direction, this being the less onerous of the two directions. The following table contains guidelines for bending to a 90° angle. In general however, bending radii should be as generous as possible.

Bending direction (bend axis)	Minimum inside Bending radius	Minimum die opening
Perpendicular to rolling direction	3t	8.5t
Parallel to rolling direction	4t	10t



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