



# ABRO M

**11-14% MANGANESE,  
NON-MAGNETIC, WORK  
HARDENING ABRASION  
RESISTANT STEEL PLATE**



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**11-14% Manganese, non-magnetic, work hardening abrasion resistant steel plate.**

## Applications

Shotblasting cabinets and furniture, crushers, anti-drill plates, magnetic separators, and the metal recycling industry.

## Hardness

As supplied approximately 200HBW.

In service over 500HBW.

This material should only be used in wear situations where high impact and/or gouging abrasion leads to a work hardening effect. The deeper layers maintain a ductile structure capable of withstanding high shock loadings.

## Chemical Composition

For the ladle analysis the following values in % are applicable:

C	Mn	Si
1.15	12.0	0.5

## Processing

### Profiling

Plasma and laser profiling are recommended.

### Forming

This can be carried out without difficulty – the plate in the as supplied condition is ductile. To avoid cracking, edges which have been work hardened by shearing should have a 2-3mm chamfer ground along the edge to be formed. If possible, forming should be carried out in one operation in order to avoid work hardening.

### Drilling

This is a very difficult operation as this grade will work harden rapidly. Heavy duty, very rigid machinery is required using either armour piercing drills in 8% cobalt high speed steel, or preferably, use special drills with replaceable carbide inserts. Avoid centre punching or allowing the drill to rub on the surface without the feed being engaged, as this has the effect of work hardening.

### Welding

Welding should be carried out using E308Mo type austenitic stainless consumables. Due to the grade's high coefficient of thermal expansion and low thermal conductivity, welding should be carried out at a low thermal value. Prolonged time of the material in the temperature range of 300°C - 800°C can cause embrittlement due to carbide precipitation.

### Thickness Range

3mm to 40mm thickness

Note: IMS UK and its suppliers undertake continual material development and the data is a general guide, accurate at the time of printing. Buyers and users should satisfy themselves as to the suitability of the selected steel for their particular application.

## Processing Facilities

- CAD / CAM Profiling
- Plasma Profiling
- Laser Profiling
- Oxy – gas Profiling
- DXF Compatible
- Perforating
- Forming
- Drilling and Countersinking
- Beveling
- Welded Fabrications

# ABRO M

Part of the IMS Group, with sales offices established in over 14 European countries, IMS UK is a major distributor and processor of Abrasion Resistant and High Yield Steel plate throughout the UK and Ireland.



IMS have an extensive stock of 3mm - 120mm plate, including their branded ABRO range of abrasion resistant grades, and offer full technical and material selection advice and support to provide cost effective solutions for complex applications.

The abrasion resistant stock range comprises standard 400 and 500 brinell grades, 11-14% manganese, as well as the more specialised Creusabro 4800 and Creusabro 8000 materials. Weld overlay Ultraclad 800 offers even higher performance in certain

applications. For high strength and weight saving applications RQT 701 is also available.

With over 100 years of specialist knowledge within the steel industry, the company offers in-house manufacturing facilities, to provide profiled, formed and drilled parts and welded fabrications, supported by a CAD/CAM design service ensuring precision manufactured components.

Spec	Operating Temp	Cold forming	Hot forming	Welding	Drilling	Profiling	Wearlife x Mild Steel	Impact strength
Abro 400	200°C Max	B	X	A	B	GPWL	3 to 4	High
Abro 500	200°C Max	C	X	B	C	GPWL	6 to 8	High
Creusabro 4800	350°C Continuous 400°C Intermittent	B	A	A	B	GPWL	3 to 5	High
Creusabro 8000	300°C Continuous 350°C Intermittent	C	A	B	C	GPWL	8 to 10	High
<b>Abro M</b>	<b>Ambient only</b>	<b>B</b>	<b>B</b>	<b>B</b>	<b>C to X</b>	<b>PWL</b>	<b>20 to 30</b>	<b>Very high</b>
Ultraclad 801	450°C Continuous 600°C Intermittent	A	X	A	X	PWL	20 to 30	Moderate to high
690 Yield	Ambient	A	X	A	A	GPWL	1.5 to 2	Very high



A = Possible  
B = Possible with some difficulty  
C = Difficult  
X = Not possible\*

P = Plasma  
W = Water jet  
L = Laser  
G = Gas

\*Consult our technical sales for recommended methods of fixing.

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