
ROC / ABRO Mn

WATER OVER QUENCHED

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

Chemical composition

C	Si	Mn
≤ 1.15	0.50	12.0

Mechanical properties in delivery condition (indicative values)

Hardness (HB) Ys (MPa)	UTS (MPa)	E (%)	
≤ 200	315	880	40

— **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.

— **Thickness Range:**

3-40 mm.

— **Applications:**

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

Processing information

— **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.

— **Processing facilities:**

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

General 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.

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