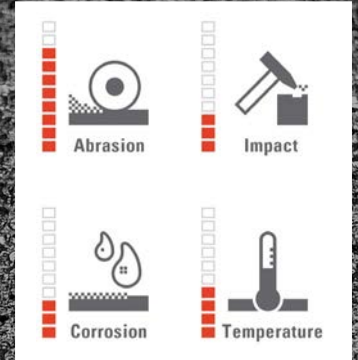


VAUTID 100

Technical Data



This publication provides guidance information on the unique manufacturing method, end-use applications, fabrication/attachment and general appearance of the VAUTID 100 weld overlay plate.

Available Product

Weld Overlay (mm)	4	6	7	9	12	17
Steel Backing Plate (mm)	6	6	8	10	12	12

Plate size: 1400mm x 2900mm. Other thickness combinations available, subject to enquiry. Plates can be welded together to allow for larger sections to be supplied. Weld direction: Parallel to length (2900).

Specification

Applications	High abrasive wear, low impact, temperature up to 350°C
Steel Backing Plate	Grade S235 (similar to AS3678 grade 250)
Weld Deposit Hardness	62 HRC (typical)
Material Type	High-chromium/high-carbon alloy on iron base

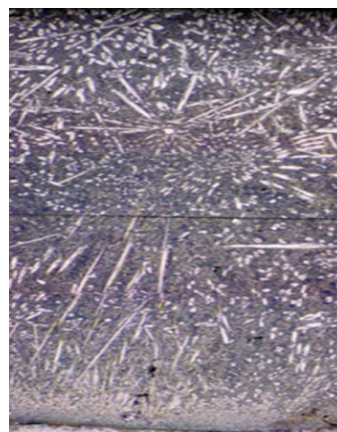
Comparison of Production Methods

VAUTID weld overlay plate is manufactured by a unique metal-arc process, using a higher amperage welding current combined with high powder content. This process provides a high percentage of evenly distributed chromium carbides throughout the weld overlay, resulting in improved wear performance compared to most other weld overlay plate that is produced using the flux cored welding process.

The high energy input in this procedure ensures a secure bond between the base plate and the hard layer.

Furthermore, this weld procedure guarantees minimal blending between the base material and the welding consumable, thereby ensuring that distinct, strong carbides form at every level in the overlay. This means that genuine VAUTID plates deliver consistent, long-term wear protection through the full cross-section of the hard layer.

They are subsequently straightened/flattened on a plate straightening machine. This operation ensures that VAUTID weld overlay plates are flat and low in stress and can be worked on without further preparation.



VAUTID Metal-Arc



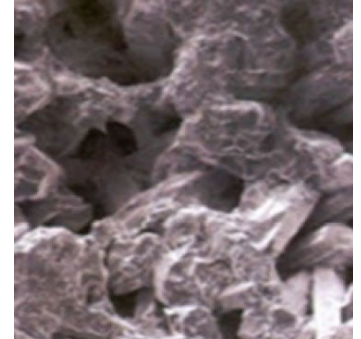
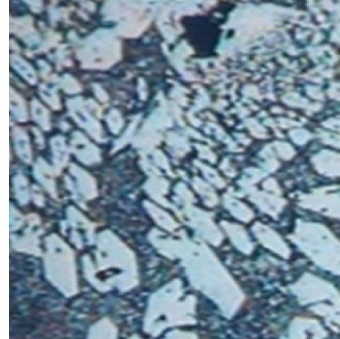
Flux Cored Wire

Typical Applications

- Liners (chutes, bins, hoppers, ore cars, grabs, sizers, bucket wheel reclaimer)
- Feeder Decks
- Screw Conveyors
- Slurry Pipes/Elbows
- Deflector Plates
- Separators
- Buckets
- Cyclones
- Dump Trucks
- Grizzly Bars

Microstructure

The microstructure of VAUTID 100 is primary chromium carbides in an austenite-chromium carbide eutectic matrix. Through a proprietary manufacturing process, the carbides interlock themselves in a “Mikado” type structure, making them extremely difficult to dislodge and provide the material's extreme wear resistance.



Fabrication

- Thermal cutting using plasma-arc, laser or water-jet cutting from backing plate side.
- Fixing by welding on backing plate or welded studs on the backing plate.
- Fixing by use of countersunk steel inserts.
- Welding of backing plates using processes suitable for mild steel (it is important to ensure that welding does not result in Carbon pickup from the weld overlay, which can result in weld cracking).
- If required, hardfacing capping runs can be applied at join lines between plates.



Cold Forming

VAUTID 100 plates can be cold formed in either direction to the weld runs; minimum 300mm diameter (weld overlay facing inside) and minimum 450mm diameter (weld overlay facing outside).



Surface Appearance

All VAUTID 100 plates contain “quality relief cracks”. These surface cracks occur approximately every 30-60mm and form transversely across the weld bead as the weld deposit cools. Typically these cracks are ~0.5mm in depth, and are an inherent feature of this type of high quality product (if not present then indicates low levels of Chromium carbides).

