"Leaders in Wearplate Technology"

ABN 25 003 265 781

AUSTRALIAN & OVERSEAS ALLOYS PTY LTD
P.O. Box 1486 Unanderra NSW 2526
Factory: 15 Doyle Avenue, Unanderra NSW 2526
Tel: (02) 4272 4999 **Fax: (02) 4271 7244**
Email: sales@aoa.com.au Web: www.aoa.com.au

Australian & Overseas Alloys Pty Ltd

"Leaders in Wear Plate Technology"

AOA CHROMIUM CARBIDE CLAD PLATE
TECHNICAL INFORMATION SHEET

(A) How to Specify:

(i) Grade Required
AOA MK1, MK2, MK3
(ii) Thickness Required - Specify overlay thickness / base plate thickness
e.g. 6/7 is 6 mm hard face on 7 mm mild steel base
(iii) Specify size, shape or drawing number and quantity
If the shape is irregular specify which side is hard faced
(iv) For an obligation free quote send details to address as per header above or contact your area agent.

(B) Grades:

AOA MK1 - The standard grade plate competing directly on price with opposition product.
Features - Performs better than opposition plate due to the even and shallow weld penetration into the base plate.
Use AOA MK1 Grade for cost savings in lesser wear areas.

AOA MK2 - The preferred grade for severe wear areas.
Features - Highest percentage of evenly dispersed fine chromium carbides within the weld deposit for ultimate wear resistance.
Weld penetration into base metal is minimal (nominally 1 mm), giving even hardness right from the top of the wear surface to the interface.
Life expectancy of up to 2 to 3 times that of opposition plate of equal overlay thickness.
Use AOA MK2 grade plate to gain increased life at reduced weight, for lower cost.
e.g. 6/7 thick to replace other manufacturers 9/10.

AOA MK3 – The ultimate wear resistant plate
Features - Complex carbide with extremely fine and evenly dispersed primary and secondary carbides.
Very high hardness.
Life expectancy exceeds any other Chrome/Complex carbide wear plate available.
Excellent against corrosive wear in sugar mills etc.
Will withstand temperatures up to 750 degrees C.
Use in areas of severe abrasion, high temperature and corrosive elements.

9/11/09

(C) AOA FLEXI STRIP AND AOA FLEXI SHAPE

Specify number of lengths and width required
Widths other than 50 mm or 100 mm can be quoted upon request.

GRADE	Thickness MM/MM	Strip Sizes MM x MM	Nominal Total Thickness	Weight of Strip	Colour Code
AOA FLEXI	5/7	1150 x 50	12.0 mm	4.8 kg	Blue

Width can be cut 40mm to 1000mm. Length is always 1150mm.
Shape can be supplied to your drawings.

(D) AOA CLAD PLATE - STANDARD GRADES AND SHEET SIZES

GRADE	Thickness MM/MM	Sheet Sizes MM x MM	Nominal Total Thickness	Weight per M^2	Colour Code
AOA MK1	4/6	2667 x 1125	10.0 mm	79 kg	Silver
	6/6	2667 x 1125	12.0 mm	94 kg	White
	7/8	2667 x 1125	15.0 mm	118 kg	Gold
	8/8	2667 x 1125	16.0 mm	125 kg	Gold
	8/10	2667 x 1125	18.0 mm	148 kg	Violet
AOA MK1	10/10	2667 x 1092	20.0 mm	161 kg	Silver
Double overlay	12/12	2667 x 1092	24.0mm	187kg	Black
	20/10	2667 x 1067	30.0 mm	240 kg	Silver
AOA MK2	4/5	2667 x 1125	9.0 mm	75 kg	Orange
	6/7	2667 x 1092	13.0 mm	108 kg	Yellow
	8/11	2667 x 1092	19.0 mm	153 kg	Green
AOA MK3	7/7	2667 x 1092	14.0 mm	110 kg	Pink
	9/11	2667 x 1092	20.0 mm	157 kg	Pink

Alternate thicknesses of overlay and base plate can be supplied to order.

(E) AOA WEAR TILES - Chromium Carbide wear tiles are available in size and thickness to your requirements.

AOA WEAR TILES can be supplied with the following means of attachment.

1. Standard Tile - Fillet weld around edge of job
2. Plug Weld Holes
3. Studs (M12, M16, M20, M24)
4. Countersunk Holes (M12, M16, M20, M24)

SPECIAL SIZES AND THICKNESSES - Ask us to quote for tiles to suit your job and any attachment method you require.

(F) AOA IMPACT/WEAR BARS

PART NUMBER	Thickness MM/MM	Bar Size MM x MM	Nominal Total Thickness	Weight of Bar
IW-50x250x40/10	40/10	250 x 50	50.0 mm	5 kg
IW-50x500x40/10	40/10	500 x 50	50.0 mm	10 kg

(G) Typical Plate Analysis and Hardness

AOA Grade	**C**	**Cr**	**Other**	**Fe**	**Rockwell C Hardness**
AOA MK1	4.2%	35.0%	2.5%	Bal	55 RC
Double Overlay	4.5%	35.0%	2.5%	Bal	60 RC
MK2	5.1%	36.0%	1.5%	Bal	60 RC
MK3	5.1%	36.0%	6.0%	Bal	60 RC

(H) Cutting & Fabrication Service

Plate is preferably cut with plasma arc. 120 to 200 amps are sufficient to cut all thicknesses.
All cutting should be from the mild steel side otherwise chromium and carbon will contaminate the mild steel base and cause a brittle weld.
Plate can also be cut using arc air and abrasive disc.
All plate cut in house is on CNC plasma unit ensuring precision cutting.
Stud welding is accurately positioned by CNC location system.
Plate is rolled on CNC rolls.
Heavy press brake and fabrication services are provided.
All parts are given part numbers for easy re-ordering.

(I) Recommended Minimum Bending Radius.

	Hard Facing Layer	
Plate Thickness	Inside	*Outside
4/5, 4/6, 6/6, 6/7, 7/7, 7/8, 8/8, 8/10, 10/10	200 mm	500 mm
8/11, 9/11	300 mm	600 mm
12/12	1000 mm	1800 mm
20/10	1000 mm	no bending

* Hard surface will open up as hard face is in tension and has no elongation

(J) Welding Procedures

1. Mild Steel Side

Use low hydrogen electrode or mig wire for attaching the mild steel face of AOA wear plate.
Where the above weld may come into contact with the hard facing layer use a root weld of stainless steel consumable.
Stainless consumable should conform to Din Std A556-SG-X15 Cr Ni Mn 18.8. A similar product is AWS A59 ER307. Product conforming to the Din Std is the best choice where cycling temperatures are present.

2. Hard Face Side - Hard Face Only (Not Attachment)

Use AOA 2.4mm Tubular hardfacing wire in the appropriate grade.

(K) Safety

WARNING

Protect yourself and others. FUMES AND GASES can be dangerous to your health.
ARC RADIATION can injure eyes and burn skin, ELECTRIC SHOCK can kill.

- Read and understand manufacturer's instructions and your employer's safety practices.
- Keep your head out of the fumes.
- Use enough natural ventilation, exhaust ventilation at the fume source, or both, to keep fumes and gases from the breathing zone and the general area.
- Wear correct eye, ear and body protection.
- Do not touch live electrical parts.
- Refer to W.T.I.A. Technical Note 7 "Health and Safety in Welding", AS 1674 "Fire Precautions in Cutting, Heating and Welding Operations", other SAA Safety publications and your electrodes suppliers recommendations.

9/11/09

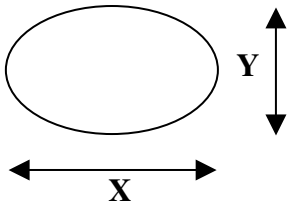
(L) Attachment Methods

All plate can be supplied with the following means of attachment.
Plug Weld Holes - see suggested sizes below
Studs welded to mild steel side of wear plate (M12, M16, M20, M24)
Countersunk Holes, to suit bolts (M12, M16, M20, M24)
Fillet Weld - All plate can be fillet welded, i.e., the mild steel backing plate being directly welded to your equipment.

Plug Weld Sizes

Plate Thickness	Hole Size		Distance Between
	X mm	Y mm	Centres mm
4/5, 4/6	25 mm	20 mm	300 mm
6/6, 6/7, 7/7, 7/8	35 mm	25 mm	350 mm
8/8, 8/10	40 mm	25 mm	400 mm
8/11, 9/11,10/10	50 mm	25 mm	400 mm
12/12	50 mm	30 mm	450 mm
20/10	75 mm	40 mm	450 mm

Hole Shape



NOTE
When fillet welding or plug welding our 4/5 and 4/6 thickness plate to a job, AOA 2000 grade wire (307Mn stainless) should be used otherwise a brittle weld may occur.
A brittle weld will occur if a mild steel electrode comes into contact with the hard face layer as carbon and chromium will be picked up from the hard surfacing.