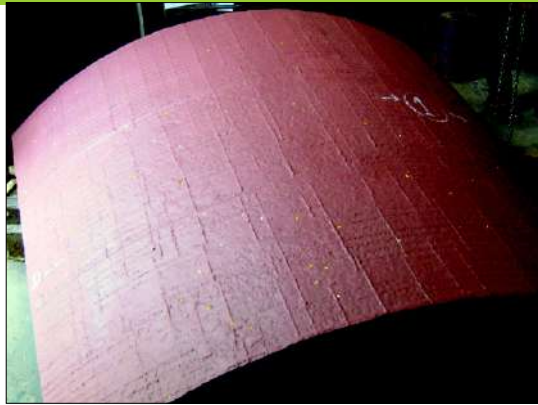


ENDURAPLATE®



Composite Wear Plates

- ❑ Excellent wear life for most common wear problems.
- ❑ Ready for installation in desired shapes and sizes.
- ❑ Enhanced wear-resistance for OEM applications.
- ❑ Standard or custom-developed alloy combinations for various applications.



Reclamation, Fusion
Surfacing & Spraying Solutions

Ador Fontech Limited

Ador Fontech Limited

When it comes to the latest reclamation welding technology with custom-designed applications, one name stands out: Ador Fontech Limited. The Company behind a spectrum of successful brands.

With the philosophy of partnering with our clients in recommending and implementing best-in-class solutions, we offer a complete package from initial diagnosis of wear problems, supply of appropriate alloys and equipment. For critical applications, the actual reclamation is carried-out by our experienced technicians.

An uncompromising commitment to the continuous improvement of products, services and delivery mechanisms has helped make Ador Fontech a byword in a wide cross-section of industries viz., mining, steel, power, railways, shipping, cement, sugar, defence and many others.

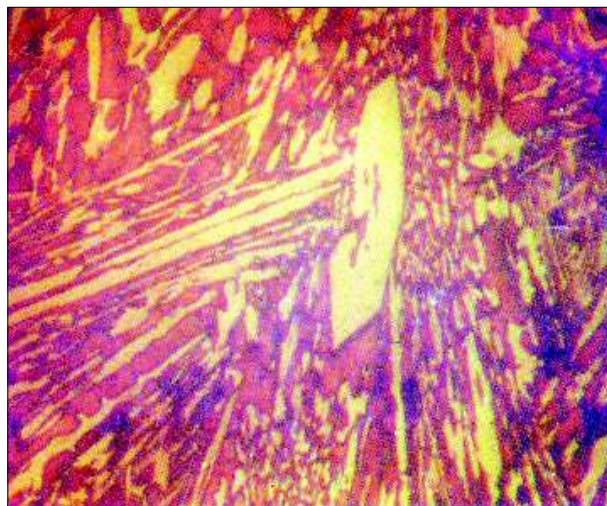
Wear Plate Technology

Enduraplate is manufactured on a state of the art, computer controlled, double weld head automatic machine using flux cored wires which are developed in-house. ADFL's expertise, R&D and field trials help us choose the right blend of alloys for different applications. This highly specialized process ensures the deposits have maximum carbide concentration and minimum dilution.

Enduraplate is manufactured in different grades for specific applications to combat impact, abrasion, erosion and heat. These plates have been successfully performing in various applications in cement, steel, power, mining, construction and several other core sector industries in India and abroad.

Ador Fontech's FRS division located at Nagpur and our Authorised and JV Workshops located in different parts of the country and abroad takes up customer-specific fabrication jobs using Enduraplate. These workshops are equipped with the latest plasma cutting/bending/drilling facilities to fabricate components like BLT chutes, curved liners, hoppers, bends, pipes, and other intricate components.

Enduraplate owes its abrasion resistance to chromium carbides / complex carbides concentration of 45% to 60% in hard overlay and its impact resistance to ductile mild-steel base.



Grades / Specifications

	Grade	Cr. %	C %	Others	Hardness (HRC)	Application
ENDURA STANDARD	1060	12-15	3.0-3.5	Mn, Si	42-46	Resistant to Impact wear and moderate abrasion. General chutes, bunker liners, Hoppers, Cyclones. Impact arm liners
	1050	20-23	3.5-4.0	Mn, Si, Ti	55-59	Good abrasion and moderate impact wear. Distribution Chutes, Troughs, Mill side liners, Cheek Plates, crusher liners, Bucket liners, Transition chutes, cooler ducts.
	1065	23-25	4.0-5.0	B, Nb, Mn	58-62	Excellent resistant to Abrasion, Erosion. Skip car liners, Impellers, Fan casing, vibrofeeder liners, Over burden liners, Mixer bottom liners, coal mill liners, VRM Housing liners, ESP Cooler ducts.
ENDURA PLUS	1050	25-29	4.5-5.5	Nb, B, V	60-64	Excellent abrasion, Moderate impact resistant plates at 550 °C. Hot sinter chutes, Coke chutes, Slag tunnels, Launderers. Fan Blades, Top gas liners, Cooling gas liners, coal mill liners.
	1065	26-30	4.5-5.5	Nb, W, V, Ni	58-62	Excellent resistant to Gouging abrasion and moderate impact at 800 °C. SGP Liners, Distribution box, coal screw liners, slag tunnel liners, Sinter screen.

Enduraplate Applications

Power Industry

1. PA/ID/FD Fan Blade Liner
2. Inner Cone
3. Separator Body Liner
4. Pa Fan Volute Casing
5. Slag Crusher Liner
6. Liners for ESP Duct
7. Primary and Secondary Crusher Chute Liners
8. Braker Plates
9. Vibrating Screen

Cement Industry

1. Haz-mag Crusher Liner
2. Hammer Mill Liner
3. Atox Mills Liners
4. Coal Mill Body Liner
5. Air Separator Vanes
6. Gyratory Crusher Liners
7. Scalping Screen
8. Curved Liners for B/w Reclaimer
9. Lines for ESP Cooler Ducts
10. Transition Pieces

Mining Industry

1. Dozer Blade Liners
2. Dragline Bucket Liners
3. Shovel Bucket Liners
4. Vibrating Troughs
5. Loading Chute Liners
6. Gyratory Crusher Liners
7. Scalping Screen
8. Curved Liners for B/w Reclaimer

Steel Industry

1. Blt Distribution Chute for B. Furnace
2. Feeder Spout
3. Tilting Chute Liners
4. Material Gate of BLT Furnace
5. Coke Oven Pusher Plate
6. Coke Oven Discharge Chute
7. Chute Liners for Sintering Plant
8. Coal Screw Bottom Liners
9. BMCS Chutes
10. Waste Gas Fan Liners



Fabrication Guidelines

Cutting

Enduraplate is best recommended to be cut by plasma equipment, however, the same can also be cut with air arc gouging or cutting electrodes.

Forming

Enduraplate can be cold rolled for large diameters. A radius of 1000 mm with hardface on outside 150 mm with hardface inside is recommended for bending.

Fastening

Enduraplate can be affixed to an equipment by various methods. These methods include: Plug Welding to the mild steel base plate; Stud Welding, affixed to the base plate; Counter-sunk Holes, incorporating a mild steel insert which matches the contour of the bolt head selected; Perimeter welding, using appropriate electrode.

Fixing

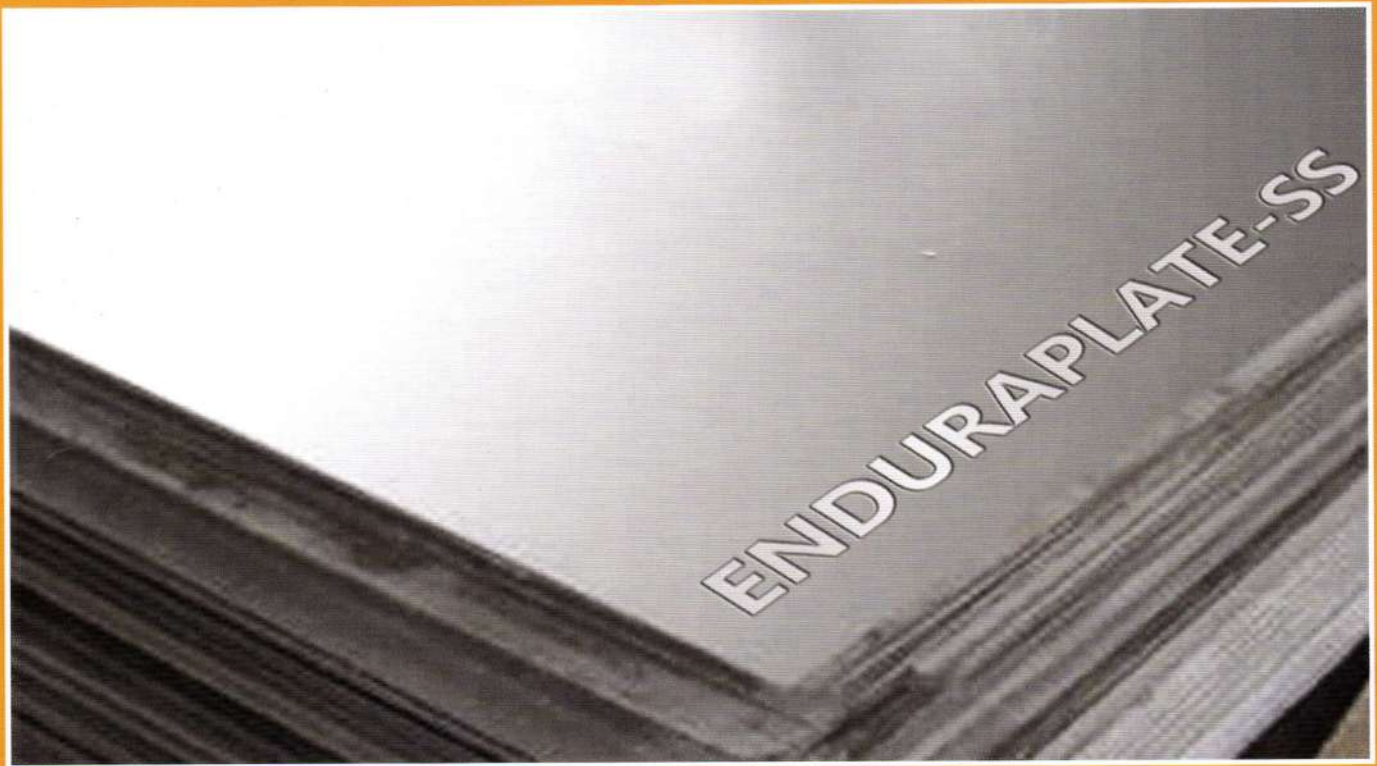
The Enduraplate can be welded to any exiting thick motherplate with low hydrogen / stainless steel electrodes.

Counter sunk holes can also be provided on request.



ENDURAPLATE-SS

Smooth Surface Wear Plate



ENDURAPLATE-SS is the latest addition to our existing range of liner plates. It is a smooth and even surface liner plate having hardness of 500-600 BHN across its cross-section.

The new Gama Phase Heating technology has helped us to attain better grain structure and desired hardness. Special care has been taken to maintain the wear resistance properties during cutting.

ENDURAPLATE-SS is abrasion resistant which can be used for both fine particle abrasion and impact. It's relatively lean alloy content makes it crack resistant. It has an excellent weldability despite its hard structure.

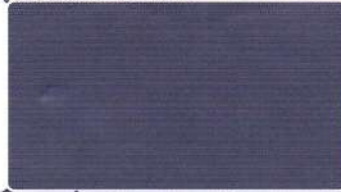
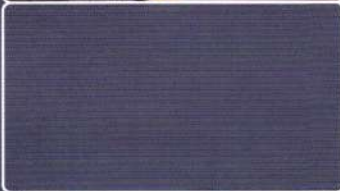
We offer custom designed solutions for various applications.

Salient Features

- Smooth finish without weld beads.
- Low coefficient of friction, hence no material hang up.
- Uniform hardness across cross section.
- Can be rolled and formed easily.
- Available in different grades and sizes.
- Can be cut using oxy-fuel or plasma.

Applications

- Loader Bucket Skid Plates
- Chute Liners
- Loader Bucket Heel Plates
- Truck Body Liner Plates
- Crusher Discharge Hoppers
- Crusher Feeders
- Chutes and Hoppers
- Dragline Bucket Shrouds
- Ripper Tooth
- Shovel Buckets
- Dozer Blades
- Vibratory Feeders
- Chute Deflector Gate
- Mill Body Liners
- Chipper Knives
- Gypsum Hoppers



Standard Supply: Thickness: 6 to 32 mm.

Available Grades: 4H (380-420 BHN), 5H (500-575 BHN), 6H (575-625 BHN)

ENDURAPLATE-SS is weldable using 7018 electrodes / MIG wires.

Preheating recommended for thick sections.

Authorised Dealer:

HARDOX[®] 500

Data sheet

ABRASION RESISTANT PLATE

HARDOX 500 is an abrasion resistant plate with a hardness of 500 HBW, intended for applications where demands are imposed on abrasion resistance.

Applications

Crushers, sieves, feeders, measuring pockets, skips, cutting edges, conveyors, buckets, knives, gears, sprockets, etc.

Chemical Composition

(ladle analysis)

Plate thickness mm	C max %	Si max %	Mn max %	P max %	S max %	Cr max %	Ni max %	Mo max %	B max %	CEV typv.	CET typv.
4 - 13	0,27	0,70	1,60	0,025	0,010	1,00	0,25	0,25	0,004	0,49	0,34
(13) - 32	0,29	0,70	1,60	0,025	0,010	1,00	0,50	0,30	0,004	0,62	0,41
(32) - 40	0,29	0,70	1,60	0,025	0,010	1,00	1,00	0,60	0,004	0,64	0,43
(40) - 80	0,30	0,70	1,60	0,025	0,010	1,50	1,50	0,60	0,004	0,74	0,46

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

The steel is grain refined.

Hardness

	HBW
4 - 32 mm	470 - 530
(32) - 80 mm	450 - 540

Impact Properties

Typical values for
20 mm plate thickness

Test temperature °C	Impact energy Charpy-V, longitudinal J
-40 (-40 F)	30

Testing

Brinell hardness, HBW according to EN ISO 6506-1, on a milled surface 0,5–2 mm below plate surface per heat and 40 tons. Tests are made for every variation of 15 mm in the thickness of plates from the same heat.

Delivery Conditions

Q.

Dimensions

HARDOX 500 is supplied in plate thicknesses of 4-80 mm. More detailed information on dimensions is provided in our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

HARDOX 500

Data sheet

Tolerances

Thickness tolerances according to SSAB Oxelösund thickness precision guarantee AccuRollTech™.
 - AccuRollTech™ meets the requirements of EN 10 029 Class A, but offers more narrow tolerances.
 More detailed information is given in our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK
 According to EN 10 029.
 - Tolerances on shape, length and width.
 - Tolerances on flatness according to Class N (Normal tolerances).

Surface Properties

According to EN 10 163-2
 - Requirements according to Class A.
 - Repair conditions according to Subclass 1.
 (Repair welding is allowed)

General Technical Delivery Requirement

According to our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

Heat Treatment and Fabrication

HARDOX 500 has obtained its mechanical properties by quenching and when necessary by means of subsequent tempering. The properties of the delivery condition can not be retained after exposure to service or preheating temperatures in excess of 250°C (480°F). HARDOX 500 is not intended for further heat treatment.

For information concerning welding and fabrication, see our brochures on www.hardox.com or consult our Technical Customer Service.

Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on the product. Grinding, especially of primer coated plates, may produce dust with high particle concentration. Our Technical Customer Service Department will provide further information on request.

HARDOX[®] 600

Data sheet

ABRASION RESISTANT PLATE

HARDOX 600 is an abrasion resistant plate with a hardness of 600 HBW, intended for applications requiring an extremely high abrasion resistance.

Applications

Liners, cutters, feeders, chutes, shredders, hammers, knives etc.

Chemical Composition

(ladle analysis)

Plate thickness mm	C	Si	Mn	P	S	Cr	Ni	Mo	B	CEV typv.	CET typv.
8– 30	0,45	0,7	1,00	0,015	0,010	1,2	2,5	0,8	0,004	0,73	0,55
(30)– 50	0,47	0,7	1,00	0,015	0,010	1,2	2,5	0,8	0,004	0,84	0,59

$$CEV = C + \frac{Mn}{6} + \frac{Cr + Mo + V}{5} + \frac{Cu + Ni}{15}$$

$$CET = C + \frac{Mn + Mo}{10} + \frac{Cr + Cu}{20} + \frac{Ni}{40}$$

The steel is grain refined.

Hardness

HBW
570-640

Impact Properties

Typical value for
20 mm plate thickness

Test temperature °C	Impact energy Charpy-V, longitudinal J
-40 (-40 F)	20

Testing

Brinell hardness, HBW according to EN ISO 6506-1, on a milled surface 0,5–2 mm below plate surface per heat and 40 tons. Tests are made for every variation of 15 mm in the thickness of plates from the same heat.

Delivery Conditions

Q.

Dimensions

HARDOX 600 is supplied in plate thicknesses of 8-50 mm. More detailed information on dimensions is provided in our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

Tolerances

Thickness tolerances according to SSAB Oxelösund thickness precision guarantee AccuRollTech™.
- AccuRollTech™ meets the requirements of EN 10 029 Class A, but offers more narrow tolerances.
More detailed information is given in our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

According to EN 10 029.

- Tolerances on shape, length and width.
- Tolerances on flatness according to Class N (Normal tolerances).

HARDOX 600

Data sheet

Surface Properties

According to EN 10 163-2
- Requirements according to Class A.
- Repair welding is not allowed.

General Technical Delivery Requirement

According to our brochure 41-General product information WELDOX, HARDOX, ARMOX and TOOLOX-UK.

Heat Treatment and Fabrication

HARDOX 600 has obtained its mechanical properties by quenching and when necessary by means of subsequent tempering. The properties of the delivery condition can not be retained after exposure to service or preheating temperatures in excess of 250° (480°F). HARDOX 600 is not intended for further heat treatment.

For information concerning welding and fabrication, see our brochures on www.hardox.com or consult our Technical Customer Service.

Appropriate health and safety precautions must be taken when welding, cutting, grinding or otherwise working on the product. Grinding, especially of primer coated plates, may produce dust with high particle concentration. Our Technical Customer Service Department will provide further information on request.

WF 90

Semiautomatic Welding Wire Feeder

With LHMATIC self shielding flux-cored wires and WF 90 semiautomatic welding wire feeders, you can now set the pace for production and maintenance with higher deposition rates and better economy.

PROPERTIES

- Suitable for AC or DC and constant potential or drooping characteristic welding power sources. (Min. OCV for AC power source should be 80 volts)
- Sturdy and reliable 4 grooved gear roll drive system to get smooth wire feeding without slippage.
- Portable, light weight and compact.
- Very easy and fast installation.
- No auxiliary voltage required.
- Facility for wire inching by a separate push button.
- Fine tuning regulator knob for the most optimum parameters setting.
- Will also work with 'constant potential' power sources as used with MIG welding sets.



TECHNICAL SPECIFICATIONS

Max. current rating at 60% duty cycle	: 450 amps.
Type of torch head	: Goose neck
Suitable cable hose assembly	: 1.6, 2.0, 2.4 and 2.8 mm dia
Length of cable hose assembly	: 3.05 mtrs.
Cooling	: Natural air
Max. wirefeed speed	: 7.5 mtrs./min. at 24 V
Input supply	: From welding power source
Overall dimensions (L x W x H)	: 730 x 210 x 520 (mm)
Approx. weight	: 18 Kgs. (without the spool)

Standard accessories supplied with each torch:

1. Contact tip heavy duty 2.4 mm dia (set of 5 Nos.) - 1 set
2. Contact tip heavy duty 2.8 mm dia (set of 5 Nos.) - 1 set

Retrofit kit for using 1.6 mm wire can be supplied as an optional extra.



Reclamation, Fusion
Surfacing, Spraying &
Environmental Solutions

Ador Fontech Limited

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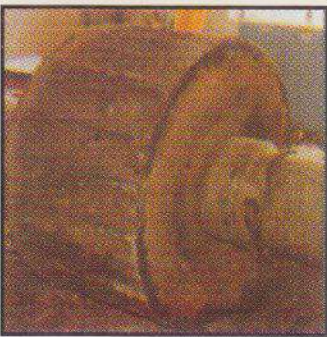
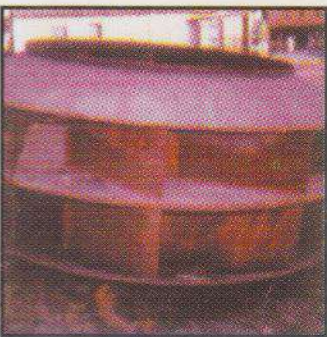



APPLICATION GUIDE FOR INDUSTRIES

MINING INDUSTRY

Sl. No.	Components	Wear Factor	Base Metal	Fonmatic Alloy
	1. Sprockets	Abrasion	Cast steel	O-7030
	2. Idler rollers	Abrasion	Cast steel	O-7030
	3. Grouser shoes, carrier roller	Abrasion	Cast steel	O-7030
	4. Shovel teeth (old)	Impact/abrasion	Mn steel	O-7020 (Buffer layer) O-7050 (Final layer)
	5. Shovel buckets	Impact/abrasion	Mn steel	O-7020 (Buffer layer) O-7050 (Final layer)
	6. Shovel buckets	Joining	Mn steel	O-2060
	7. Rack pinions	Abrasion	Forged steel	O-7030
	8. Track links	Abrasion	Cast steel	O-7030
	9. Mn steel plates	Joining	Mn steel	O-2060
	10. Track pads	Abrasion	Cast steel	O-7030

CEMENT INDUSTRY

Sl. No.	Components	Wear Factor	Base Metal	Fonmatic Alloy
	1. Hammers (old & new)	Impact & abrasion	Mn steel	O-7025 (Buffer layer) O-7050 (Final layer)
	2. Jaw crusher plates and eccentric shafts	Friction	Alloy steel	O-7030
	3. Shovel buckets & tooth points	Abrasion & Impact	Austenitic Mn steel	O-7020 (Buffer layer) O-7050 (Final layer)
	4. Toggle bearing plates	Abrasion	Austenitic Mn steel	O-7025
	5. Idlers, guides and track rollers	Impact and Abrasion	Carbon steel	O-7030/O-7060
	6. Sprockets	Friction and impact	Alloys steel	O-2060/O-7030
	7. Hammer arms & shafts	Impact	Alloy steel	O-2060
	8. Track links & shoes	Impact and Friction	Austenitic Steel	O-7020/O-7068
	9. Diaphragms	Impact	Mn steel	O-7025
	10. Scooper liner plates	Abrasion	M.S./mn steel	O-7020
	11. Mill gear/drive pinions	Friction	Cast steel	O-7030
	12. Mill head/journals	Impact	Cast steel	O-2060
	13. Kiln tyres	Abrasion	Cast steel	O-2060/O-7030
	14. Kiln roller shafts	Abrasion	Carbon steel	O-2060/O-7030
	15. Girth gear teeth	Fatigue	Cast steel	O-1040/O-7030
	16. Girth gear/drive pinions	Fatigue and friction	Cast steel	O-1040/O-7030
	17. Clinker inlets	Heat and abrasion	Alloy steel	O-7015
	18. Cooler plates	Heat and abrasion	Alloy steel	O-7015
	19. Lifting arms & rollers	Friction	M.S.	O-7030
	20. Locomotive crane wheels	Friction	Cast steel	O-7030
	21. Elevator rim/drums	Abrasion	M.S.	O-7030
	22. Crane grabs	Abrasion	M.S.	O-7060/O-7062
	23. Drag-chain sprockets	Friction	Carbon steel	O-7030
	24. Slurry pump shafts	Corrosion & friction	Carbon steel	O-2060
	25. I.D. Fan blades	Abrasion	M.S.	O-7062
	26. Coal pipe bends	Abrasion	Cast steel	O-7050