



Classifier Equipment Wear Prevention

WA Integra solutions for
wear prevention in the cement industry



ACTING GLOBAL
WELDING LOCAL

Cement Raw Mill Classifier

WA Fabricated Classifier Parts

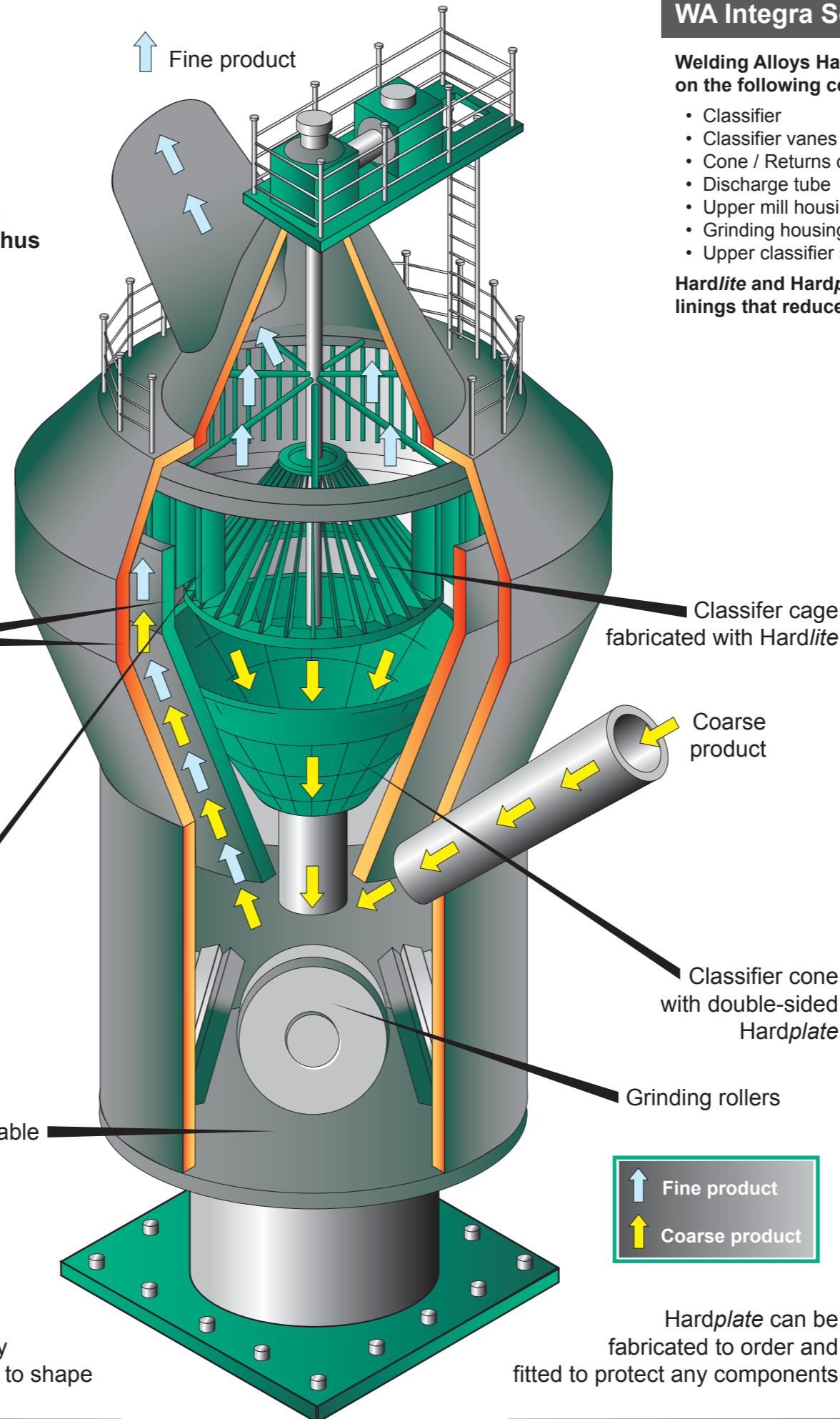
Welding Alloys Integra has significant experience in wear prevention within cement mill classifiers and the protection of their vital components. Our WA *Hardlite* and *Hardplate* product range offers superior solutions that will minimise abrasion and impact, and therefore reduce maintenance costs. In turn this will extend cement and raw mill availability until planned shutdown, thus maximising profitability.



Fabricated mill lining plates

Fan blades protected with *Hardplate* or *Hardlite*

Hardlite can be easily bent, formed and cut to shape



WA Integra Solutions

Welding Alloys *Hardlite* and *Hardplate* are ideally suited for applications on the following cement plant equipment:

- Classifier
- Classifier vanes (fixed / moving)
- Cone / Returns cone
- Discharge tube
- Upper mill housing
- Grinding housing lining plates
- Upper classifier support arms

Hardlite and *Hardplate* can be fabricated and fitted to produce parts or linings that reduce excessive wear from impact and abrasion.



Coarse product

Classifier cone with double-sided *Hardplate*

Grinding rollers

↑ Fine product
↑ Coarse product

Hardplate can be fabricated to order and fitted to protect any components

Cement Raw Mill Classifier

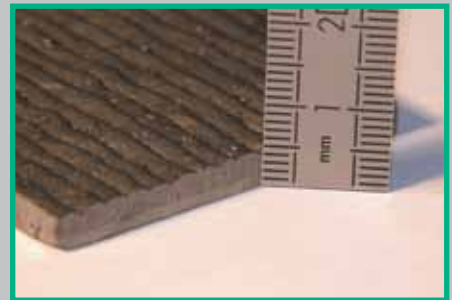
WA wear plates and wear prevention

Our range of plates are available in standard dimensions or made to measure, in the widest range of thicknesses for numerous applications throughout classifiers and their vital components.

WA *Hardlite*

Hardlite is the preferred solution for the maintenance of classifier components and offers the following benefits / features:

- Specially adapted for applications where weight is restricted
- Can be fabricated or shaped to protect vital areas of high abrasion
- Ultra-thin (less than 5mm thick)
- Keeps its outstanding properties up to 200°C
- Hardness of 66-68HRC (harder than quartz)
- Can protect components that are subjected to static/dynamic constraints
- Light and robust to cope with severe abrasion, shock/wear on moving parts



WA *Hardplate*

Hardplate is heavy duty composite wearplate for use in a wide variety of component refurbishment applications and offers the following benefits / features:

- Base metal and coating thickness is selected according to the application
- Can be fabricated or shaped to protect vital areas of high abrasion
- A choice of coating types available with stringer or oscillated welding bead
- Keeps its outstanding properties up to 200°C / 400°F (dependent upon plate spec)
- Hardness of *Hardplate* varies 60-64 HRC (depending upon plate variant specified)
- Plates are used for armouring or double facing components that are subjected to static/dynamic constraints
- Designed to withstand moderate impacts



WA Fabricated Plate Services

Integra's fabricated plate service ensures that all our wearplates are professionally fitted. Our service includes:

- Quotations and the manufacturing of parts from drawings
- Cutting, rolling and bending components
- Numerous fixing and assembly options available which include welding, bolting etc

All plates can be supplied using three different types of service:

- Supply of wear plate fabricated by Welding Alloys
- Supply of pieces prepared to specification and ready for assembly
- Construction and refurbishment of parts in our workshop or assembly carried out on-site.



Full project management is available for the refurbishment of classifier equipment & components.

Customer Case Study

One of the major cement plant producers in the UK which uses vertical mill grinding plants has called upon Welding Alloys Integra to help limit the effect of wear, abrasion and impact on its mill machinery.

Their maintenance manager said "We have been suitably impressed with the *Hardlite* trials over the last five years. The sheets of *Hardlite* have performed exceptionally well and have lasted an extremely long time. We very much like the product; especially its all round versatility and durability."

Case Study

Hardlite Application - Classifier Base Refurbishment

WA Integra has many years of experience in the refurbishment of classifier equipment & components. Recently we repaired the base of a classifier which was being exposed to a significant amount of wear. The wear occurred when cement particles were lifted by the air flow within the mill and colliding with the surface of the separator frame, which got worn away over a period of time. *Hardlite* was chosen to repair the classifier due to its light weight construction and proven abrasion resistance properties.

One of the major benefits to customer was the fact that the components were repaired in-situ and laser cut parts of *Hardlite* were fitted without moving the classifier. Another advantage with this application, was the ease and simplicity in fabricating and rolling the *Hardlite* parts due to the plate thickness of the materials used. Once refurbished regular checks were conducted on the Classifier base and one year after the surface was fabricated with *Hardlite* it shows virtually no wear at all.



Worn Classifier prior to refurbishment



Prepared fabricated *Hardlite* parts

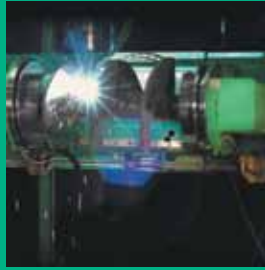


Installation being implemented

A perfectly controlled technology



WA Cored Wires™
Design and manufacture
of all types of cored
welding wires



WA MultiSurfacer™
Design and manufacture
of automated welding
equipment for hardfacing
and rebuilding applications



WA Integra™ Services
Innovative hardfacing
and rebuilding solutions
by welding

A worldwide presence

United Kingdom
(Head office)
Welding Alloys Ltd

Argentina
Welding Alloys Argentina S.A.

Australia (Trading Partner)
Specialised Welding Products Pty Ltd

Brazil
Welding Alloys Brasil Ltda

China
Welding Alloys China Ltd

Egypt
Welding Alloys Egypt

Finland
Welding Alloys Finland Oy

France
Welding Alloys France SAS

Germany
Welding Alloys
Deutschland GmbH

Greece
Welding Alloys Hellas EPE

India
Welding Alloys
South Asia Pvt Ltd

Iran
Aliaj Joosh Iran

Italy
Welding Alloys Italiana s.r.l.

Japan
Welding Alloys Japan

Malaysia
Welding Alloys (Far East) Sdn. Bhd.

Mexico
Welding Alloys
Panamericana S.A. de C.V.

Morocco
Welding Alloys Maroc Sàrl

Poland
Welding Alloys Polska Sp. z o.o.

Russia
ZAO Welding Alloys

South Africa
WASA (PTY) Ltd

South Korea
Welding Alloys Korea Ltd

Spain
Welding Alloys España

Sweden
Welding Alloys Sweden

Taiwan
Welding Alloys Taiwan Co.

Thailand
Welding Alloys (Thailand) Co. Ltd

Turkey
Welding Alloys Limited Şirketi

Ukraine
Welding Alloys Ukraine

United Arab Emirates
Welding Alloys Middle East FZC

USA
Welding Alloys (USA) Inc.

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Welding Alloys Vietnam Co. Ltd.

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