

# WA Integra™

Composite wear plates: *Hardplate*™  
*Hardlite*™  
*Tuffplate*™

# Composite overlay wear plates

Our standard and complex carbide ranges of welded overlay plates have wear resistant properties far exceeding those of quenched and tempered abrasion resistant steels. In-house developed technology and state of the art equipment ensure our products are distinguished by their:

- **Homogeneity throughout the welded deposit thickness**
- **Regular appearance**
- **High quality consistency**
- **Functionality**
- **Ability to be cut, formed and welded to produce fabrications - this is achieved through the use of low carbon structural steel as the base material for all Welding Alloys' overlay materials.**

In addition to abrasion resistance, Welding Alloys also offers materials specifically designed to resist material loss caused by high impact, elevated temperatures and corrosion, as well as a combination of these wear mechanisms.

## Hardplate™

### Heavy duty composite overlay wear plate

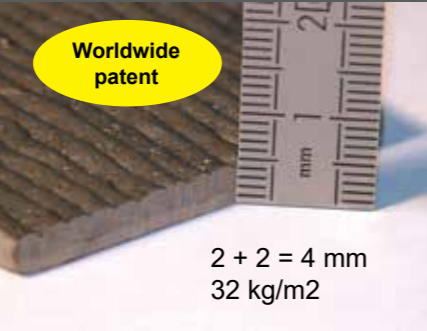
- Base material and overlay thickness selected according to the application
- Selection of various overlay materials available depending on the area of use and the wear mechanisms present
- The preferred solution for maintenance of wear areas



## Hardlite™

### Ultra-thin welded overlay wear plate, overall thickness of less than 5 mm

- Ideally suited for areas of high wear, where weight restrictions apply
- Easily formable, despite its very high hardness
- Thanks to its light weight, it is most suitable for wear protection of moving parts, i.e. fan blades.



## Tuffplate™

### Impact resistant composite overlay wear plate

- Designed to be used in areas of high impact, with or without the addition of abrasion
- Ideally suited for areas of material transfer and transportation



## A range of composite overlay wear plates to suit your specific needs

Hardplate™ 100	Hardplate™ 300	Hardplate™ 600	Hardlite™	Tuffplate™
Chromium Carbide based product Excellent abrasion resistance Optimum solution for most applications Low-range temperature resistance	Consists of Chromium and Niobium carbides Improved wear resistance Excellent for use in high abrasion applications Moderate temperature resistance	Carbide structure consists of a variety of complex carbides Superior wear resistance Excellent for use in areas of wear at elevated temperatures	Refined welding techniques to ensure ultra-hard, very thin overlay Fine, densely packed chromium carbides in an austenitic matrix Best suited for low impact, high abrasion applications where there are weight restrictions	Finely dispersed carbides embedded in a tool steel matrix Ideally suited for areas of high impact, pressure and abrasion or a combination of these mechanisms
Fair corrosion resistance Designed to withstand moderate impact			Fair corrosion resistance with low levels of impact resistance	Moderate levels of abrasion resistance with high impact resistance
Hardness 60 - 62 HRC	Hardness 61 - 63 HRC	Hardness 62 - 64 HRC	Hardness 68 HRC	Hardness 56 - 58 HRC

Hardness values obtained from 3-layer deposits

### Standard Dimensions

Type	Size
Hardplate™	1500 x 3000 mm 2000 x 3000 mm
Hardlite™	1000 x 2000 mm
Tuffplate™	1500 x 3000 mm

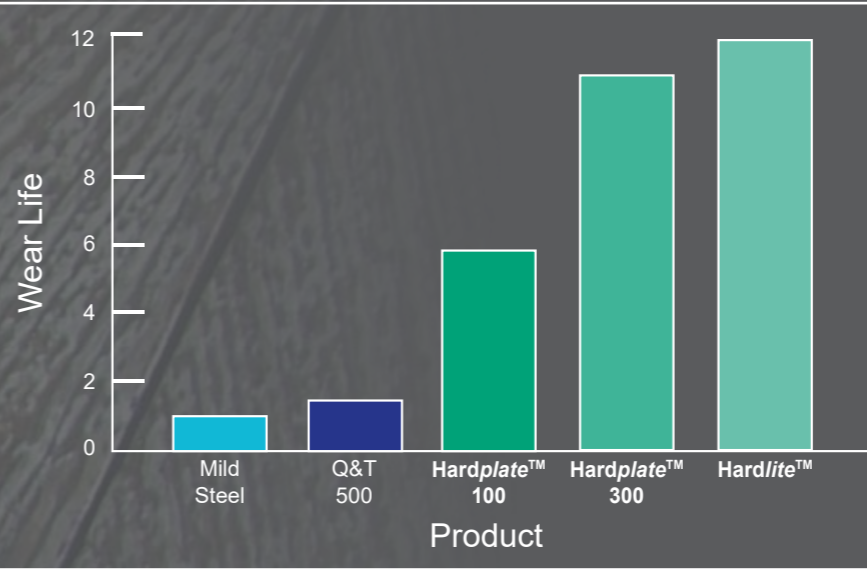
Other dimensions and thicknesses available on request

### Standard Thickness

Type	Base Plate	Overlay
Hardplate™	5 – 15 mm	3 – 15 mm
Hardlite™	2 – 3 mm	2 - 3 mm
Tuffplate™	5 – 10 mm	3 – 8 mm

Our overlay products are available in a wide selection of thicknesses, suitable to all application needs. Hardplate™, Hardlite™ and Tuffplate™ are available in standard dimensions or cut-to-size configurations. We also offer design and fabrication services throughout our global network of Integra workshops. Technical and application data sheets are available on request.

### ASTM G-65 Wear Test (independent laboratory)

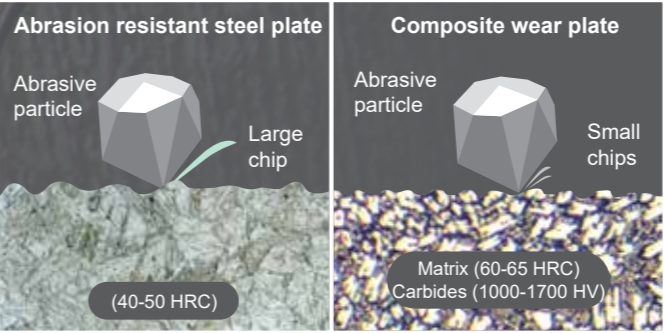


The graph reflects results from the ASTM G-65 wear test performed by an independent laboratory.

The results compare the wear life of various products tested, with Welding Alloys composite overlay plates proving they provide superior wear protection.

As an example, Hardplate™ 100 has outlasted 500 BHN quenched and tempered material by a factor of 4 and Hardplate™ 300, by a factor of 7.

### Comparative wear test



### Example of Applications

- Hoppers
- Truck Tray Liners
- Cyclones & Classifiers
- Pipes & Pipe Bends
- Dust Extraction
- Fan Blades & Casings
- Conveyor Liners
- General Wear Liners
- Screens and Grids
- Mixers and Mixer Blades
- Mills & Mill Liners
- Chutes
- Slurry Systems
- Impact Zones
- Scrapers
- Furnace Chutes

## Manufacturing and Plate Processing

For more information on plate processing, cutting, forming, welding, etc., please refer to our **Workshop and Plate Processing Manual** available from any of our subsidiaries or our website.

All Welding Alloys plate products can be thermal processed by means of plasma or laser cutting and joined by means of welding. None of these thermal processes affect the wear resistance in the heat affected zone, effectively eliminating preferential wear typically seen in these areas when quenched and tempered materials are used.



# Our Technical 'Spark' Solves Your Industrial Challenges



## WA Consumables

The go-to provider  
of advanced welding  
consumables



## WA Machines

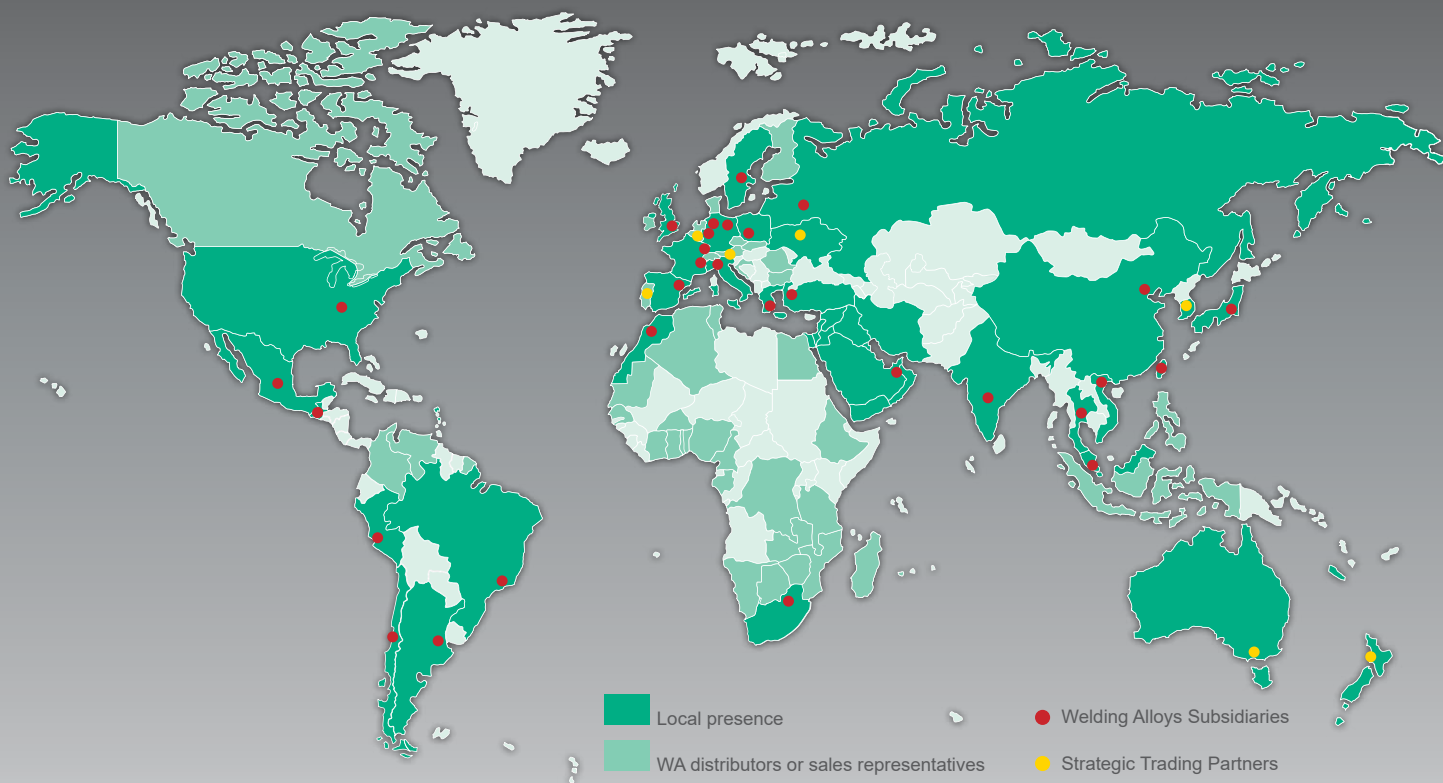
The go-to provider  
of automated equipment  
for wear protection



## WA Integra™

The go-to provider  
of engineered wear  
protection solutions

## A worldwide presence



[www.welding-alloys.com](http://www.welding-alloys.com)

