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 lightweight, 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™**

| Hardness | 60 - 62 HRC |

**Hardlite™**

| Hardness | 61 - 63 HRC |

**Tuffplate™**

| Hardness | 69 HRC |

**Chromium Carbide based product**
- Excellent abrasion resistance
- Optimum solution for most applications
- Low-range temperature resistance

**Consists of Chromium and Nobium 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

**Rounded 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

**Comparative wear test**

<table>
<thead>
<tr>
<th>Abrasive particle</th>
<th>Large chip</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abrasive resistant steel plate</td>
<td>Composite wear plate</td>
</tr>
</tbody>
</table>

**Example of Applications**

- Screens and Grids
- Mixers and Mixer Blades
- Mills & Mill Liners
- Chutes
- Slurry Systems
- Impact Zones
- Scraper
- 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.

### 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.

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

<table>
<thead>
<tr>
<th>Product</th>
<th>Size</th>
<th>Type</th>
<th>Base Plate</th>
<th>Overlay</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardplate™ 100</td>
<td>1000 x 2000 mm</td>
<td>Hardplate™</td>
<td>2 – 3 mm</td>
<td>2 – 3 mm</td>
</tr>
<tr>
<td>Hardplate™ 300</td>
<td>1500 x 3000 mm</td>
<td>Hardplate™</td>
<td>3 – 10 mm</td>
<td>3 – 8 mm</td>
</tr>
<tr>
<td>Hardlite™ 500</td>
<td>1500 x 3000 mm</td>
<td>Hardlite™</td>
<td>5 – 15 mm</td>
<td>3 – 15 mm</td>
</tr>
</tbody>
</table>

Other dimensions and thicknesses available on request.

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.
Our Technical ‘Spark’ Solves Your Industrial Challenges

WA Consumables
The go-to provider of advanced welding consumables

WA Machines
The go-to provider of engineered wear protection solutions

WA Integra™
The go-to provider of automated equipment for wear protection

A worldwide presence

www.welding-alloys.com