



FEROBIDE

FEROBIDE is a weldable tungsten carbide composite material, which combines high levels of wear resistance with the ease and reliability of a weldable material. The unique features of FEROBIDE closes the gap between conventional tungsten carbide which requires brazing and weldable materials which have a significant lower wear performance.



FEROBIDE is ideal in situations where brazing is not an option and for applications involving sliding wear. FEROBIDE has found its use in critical applications in several different industries such as agriculture, separation, mining, mixing, mineral processing and road maintenance.

The material is available in a range of standard tile sizes with custom designs available upon request.

FEROBIDE Tiles are available in the following dimensions

4mm Thickness	6mm Thickness	8mm Thickness	12+mm Thickness
8 x 40	–	–	–
15 x 40	15 x 40	15 x 40	–
25 x 60	25 x 60	25 x 60	25 x 60
40 x 40	40 x 40	40 x 40	40 x 40





ASTM G65 Data

FEROBIDE has been tested at renowned NPL, National Physical Laboratory, according to the ASTM G65 standard. Typical results in such tests are 3mm³ of wear. This is comparable to that of tungsten carbide with high (~10%) cobalt content.

Sliding Wear Test

FEROBIDE has a low friction coefficient and protects the surface of a steel counter face from wear, making it ideal for sliding conveying applications, like those found with drag chain conveyors. The table and photos below show the sliding wear behavior of FEROBIDE on FEROBIDE, Steel on Steel and FEROBIDE on Steel:

Sliding wear performance	Wear of pad in mm per km	Relative wear performance	Wear of counter face in mm per km	Relative wear performance
FEROBIDE pad on FEROBIDE counter face	0.3	79 times longer life of pad	n/a	n/a
Hardened steel pad on hardened steel counter face	22.8	–	7.6	–
FEROBIDE pad on hardened steel counter face	0.03	711 times longer life of pad	0.4	19 times less wear of counter face

Typical Relative Wear Performance

When compared to other common wear resistant materials in G65-type abrasion tests, FEROBIDE is:

- 15 times better than 500 HB hardened steels,
- 8-10 times better than chromium carbide plates,
- 6 times better than cast white iron,
- 4 times better than 97% alumina.

*Based on internal test rig.



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WELDING INSTRUCTIONS

Welding Ferobide creates a strong joint, capable of reaching 360 MPa shear strength which is stronger than a typical braze joint. Welding Ferobide maintains hardness of host metal, with a minimal heat affected zone. By maintaining hardness of the underlying steel, the wear resistance of the entire system is ensured. Ferobide is a very cost-effective product when used and welded correctly. Below are some guidelines to assist you:

- MIG/stick weld, 120 amps, dissimilar wire/rod gives best result.
- Clamp tile down when tacking, if one end curls up the tile will crack
- Tack in the middle of tile length if needed, weld outwards from the middle
- Don't hesitate when welding, so as to avoid heat build up
- Do no quench after welding
- If risk of weld erosion, chamfer host metal so welds can be hidden
- Do not fit to leading edges in high impact applications

