

Erosion-Corrosion Resistant Metal Repair Composite

BELZONA®
1311



Belzona 1311 (Ceramic R-Metal) is a repair composite designed for rebuilding and protecting metal against the effects of erosion and corrosion.

This cold-applied material benefits from excellent erosion resistance and can be used to restore equipment operating under immersion without the need for hot work.

Belzona 1311 demonstrates outstanding adhesion to a variety of substrates, allowing it to also be used as a high strength structural adhesive for metal bonding. For long-lasting performance, it can be overcoated with another of Belzona's 1300 Series materials.



TECHNICAL DATA	Mixing ratio (base:solidifier)	3 : 1 by volume	5 : 1 by weight
	Working life	15 minutes at 25°C (77°F)	
	Shelf life	5 years	
	Dry heat resistance	200°C (392°F)	
	Adhesion (tensile shear)	Mild steel: 20.7 MPa (3,000 psi)	Stainless steel: 19.0 MPa (2,760 psi)
	Compressive strength (yield)	56.8 MPa (8,235 psi) at 20°C (68°F) cure	
	Volume capacity	415 cm ³ (25.3 in ³) / 1 kg	830 cm ³ (50.6 in ³) / 2 kg
	Heat distortion temperature	51°C (124°F) at 20°C (68°F) cure	89°C (192°F) at 100°C (212°F) cure
	Abrasion resistance	H10 - 194 mm ³ wet	CS17 - 25 mm ³ dry

CURE TIMES	Temperature	10°C (50°F)	15°C (59°F)	20°C (68°F)	25°C (77°F)
	No loading or immersion	3 hours	2½ hours	1 ¾ hours	1 hour
	Machining and/or light loading	4 hours	3 hours	2 hours	1½ hours
	Full mechanical or thermal loading	2 days	1½ days	1 day	20 hours
	Immersion in chemicals	4 days	3 days	2 days	1½ day

*Please consult the Product Specification Sheet (PSS) and Instructions for Use (IFU) for the latest technical data.



**EROSION
RESISTANT**



**CORROSION
RESISTANT**



**CHEMICAL
RESISTANT**



**EXCELLENT
ADHESION**



SOLVENT FREE

Key Benefits:

- **Erosion-corrosion resistance**

This metal repair composite offers outstanding erosion and corrosion resistance.

- **Excellent adhesion**

Belzona 1311 demonstrates excellent adhesion to a variety of metallic substrates.

- **Chemical resistance**

Belzona 1311 is resistant to a variety of chemicals, including hydrocarbons and process chemicals.

- **Solvent free**

This solvent-free solution does not shrink when curing and reduces health and safety risks in confined spaces.



Application Areas:

- **Rebuilding metal loss**

This metal repair composite can reverse the effects of metal loss on equipment and protect against further erosion.

- **Equipment under immersion**

Belzona 1311 can be used to repair equipment operating under immersion, including pumps and HVAC systems.

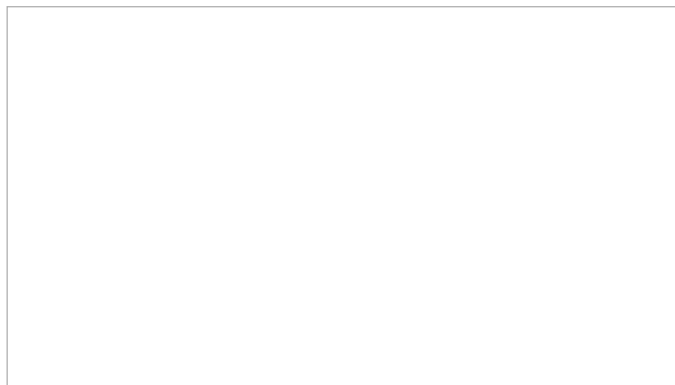
- **High-strength structural adhesive**

The adhesive strength of Belzona 1311 makes it suitable for use as a structural adhesive and for cold bonding purposes.

- **Load bearing shims**

Belzona 1311 can be used to create load bearing shims as it will not shrink.

For more information, please contact your local Belzona representative:



QUALITY PRODUCTS - TECHNICAL SUPPORT

Belzona products are manufactured under an ISO 9001 Registered Quality Management System.

Belzona has a global distribution network of over 140 Distributors operating in 120 countries. Local support is provided by a trained Technical Consultant who will diagnose the problem, recommend the solution and provide 24-hour, on-site application supervision and advice.