

# Metal repair material for application to wet and oil-contaminated surfaces



Belzona 1161 is a two-component, surface-tolerant, paste grade system for repairing and rebuilding machinery and equipment.

This fully machinable, surface-tolerant product displaces fluid from the substrate and therefore can be applied to wet and oily surfaces as well as for underwater application.

This material does not shrink, expand or distort during cure and can be applied in thick or thin sections in one operation. It is easy to mix and apply without the need for specialist tools and can be machined using conventional tools.

TECHNICAL DATA	Mixing ratio (Base : Solidifier)	2 : 1 by volume		4 : 1 by weight	
	Working life	16 minutes at 20°C (68°F)			
	Shelf life	3 years			
	Dry heat resistance	208°C (401°F)			
	Adhesion (tensile shear)	Grit blasted mild steel - clean and dry: 20.7 MPa (3,007 psi)	Grit blasted mild steel - oily: 18.9 MPa (2,735 psi)	Abraded mild steel - clean and dry: 14.7 MPa (2,130 psi)	Abraded mild steel - oily: 15.6 MPa (2,256 psi)
	Volume capacity	428 cm <sup>3</sup> (26.1 in <sup>3</sup> ) / 1 kg			
	Heat distortion temperature	47°C (117°F) at 20°C (68°F) cure			
Abrasion resistance	H10 - 712 mm <sup>3</sup> wet		CS17 - 43 mm <sup>3</sup> dry		

CURE TIMES	Temperature	5°C (41°F)	10°C (50°F)	20°C (68°F)	30°C (86°F)	40°C (104°F)
	Machinable or light loading	6 hours	4 hours	2 hours	1 hours	30 minutes
	Full mechanical or thermal loading	4 days	2 days	1 day	16 hours	12 hours

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



EASY TO APPLY



COLD CURE



CHEMICAL RESISTANCE



ELECTRICAL INSULATION



FULLY MACHINABLE



IMMERSION RESISTANCE

## Key Benefits:

- Bonds strongly to oily, wet and manually prepared substrates

This 100% solids repair composite displaces water and oil from the surface and bonds strongly to almost any metal and other natural and synthetic materials including glass and wood.

- Easy to apply

This material is easy to mix and apply without the need for specialist tools and can be machined using conventional tools.

## Application:



Through-wall defect



Cold plate bonding

## Application Areas:

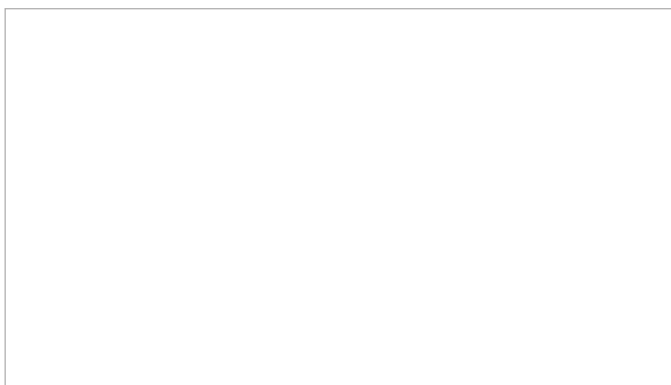
- Repair of oil and water leaks
- Sealing of joints and flanges
- Repair of cracks and holes on
  - engine and pump casings
  - transformers
  - pipes
  - tanks
  - and other equipment
- Resurface of pitted metal surfaces
- High strength structural adhesive for metal bonding
- Creation of irregular load bearing shims and reforming of bearing housings



### Pull Off Adhesion on 10mm thick mild steel

Substrate	Grit Blasted (SSPC-SP10) (ISO 8501-1 Sa2.5)
Clean & Dry	34.7 MPa (5036 psi)
Transformer Oil	24.9 MPa (3603 psi)
Wet	14.0 MPa (2035 psi)
Underwater	12.9 MPa (1873 psi)

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.