Devcon®



TECHNICAL DATA SHEET – DFENSE BLOK

Revised: 05/2018

PRODUCT INFORMATION
STOCK NO.:
PACKAGE SIZE: 30lb (13.6Kg)

DESCRIPTION
Alumina Ceramic bead filled epoxy system with outstanding abrasion resistance for severe service conditions.

RECOMMENDED APPLICATIONS
- Repairs to ash handling systems and scrubbers
- Prevents wear on metal surfaces that are exposed to severe abrasion and erosion such as chutes and launders
- Non sagging formulation
- Protecting flanges and elbows
- Lining bins and hoppers

PRODUCT DATA

TYPICAL PHYSICAL PROPERTIES

COLOUR	Grey
MIX RATIO BY VOLUME	Resin 2: Hardener 1
MIX RATIO BY WEIGHT	Resin 100: Hardener 45
% SOLIDS BY VOLUME	100
POT LIFE AT 25°C / MINUTES	25
SPECIFIC VOLUME CC/KG	452
CURED SHRINKAGE CM/CM	0.0005
SPECIFIC GRAVITY	2.21
TEMPERATURE RESISTANCE / °C	Dry 150°C Wet 60°C
COVERAGE	905cm²/Kg @ 5mm
CURED HARDNESS / SHORE D	77
DIELECTRIC CONSTANT	49
ADHESIVE TENSILE SHEAR / MPA	18
COMPRESSIVE STRENGTH MPA	49
COEFFICIENT OF THERMAL EXPANSION X10^{-6} CM/CM/°C	29
THICKNESS PER COAT / MM	As Required
CURE TIME	16 Hours
FUNCTIONAL CURE TIME / HOURS	4-5 Hours
RECOAT TIME / HOURS	2-3 Hours
MIXED VISCOSITY / CPS	Thixotropic Putty

CHEMICAL RESISTANCE - 7 DAYS ROOM TEMPERATURE CURE (30 DAYS) - TESTING CARRIED OUT 30 DAYS IMMERSION AT 21°C

	POOR	FAIR	VERY GOOD	EXCELLENT
AMMONIA				•
1,1,1-TRICHLOROETHYLENE			•	
METHANOL	•			
GASOLINE (UNLEADED)		•		
HYDROCHLORIC ACID 10%			•	
METHYL ETHYL KETONE (MEK)	•			
PHOSPHORIC ACID 10%		•		
NITRIC ACID 10%		•		
SODIUM HYDROXIDE 50%				•
SULPHURIC ACID 10%			•	
TOLUENE				•
TRISODIUM PHOSPHATE			•	

Excellent = +/- 1% weight change, Very Good = +/- 1-10% weight change, Fair = +/- 10-20% weight change, Poor = > 20% weight change

APPLICATION INFORMATION

CURE

A 5mm thick section of DFense Blok will harden at 25°C in 4-5 hours. The material will be fully cured in 16 hours. The actual cure time of epoxy is determined by the mass used and the environmental conditions at the time of repair.

SURFACE PREPARATION

Proper surface preparation is essential to a successful application. The following procedures should be considered:

- All surfaces must be dry, clean and with a suitable profile to facilitate bonding to the substrate.
- If surface is oily or greasy use Devcon Fast Cleaner 2000 Spray/Cleaner Blend 300 to degrease the surface.
- Remove any existing paint, rust or other contamination from the surface by abrasive blasting or other mechanical techniques. Further reference can be made here to the Devcon Metal filled user guide.
- Aluminium repairs: Oxidation of aluminium surfaces will reduce the adhesion of an epoxy to a surface. This film must be removed before repairing the surface, by mechanical means such as grit-blasting, abrading or chemical means.
- Provide a “profile” on the metal surface by roughening the surface. This should be done ideally by grit blasting (8-40 mesh grit), or by grinding with a coarse wheel or abrasive disc pad. An abrasive disc may be used provided white metal is revealed. Do not ’feather edge’ epoxy materials. Epoxy material must be ’locked in’ by defined edges and a good 3-5 mil profile.
- Metal that has been handling sea water or other salt solutions should be grit blasted and high pressure water blasted and left overnight to allow any salts in the metal to ’sweat’ to the surface. Repeat blasting may be required to ’sweat out’ all the soluble salts. A test for chloride contamination should be performed prior to any epoxy application. The maximum soluble salts left on the substrate should be no more than 40 ppm (parts per million).
- Chemical cleaning with Devcon Fast Cleaner 2000 Spray/ Cleaner Blend 300 should follow all abrasive preparation. This will help to remove all traces of sandblasting, grit, oil, grease, dust or other foreign substances.
- Under cold working conditions, heating the repair area to 38°C-43° C immediately before applying any of Devcon Epoxies is recommended. This procedure dries off any moisture, contamination or solvents and assists the epoxy in achieving maximum adhesion to the substrate.
- Always try to make the repair as soon as possible after cleaning the substrate, to avoid oxidation or flash rusting. If this is not practical, a general application of FL-10 Primer will keep metal surfaces from flash rusting.

ADDITIONAL SURFACE PREPARATION INFORMATION

If abrasive blasting is not possible and expanded metal cannot be welded in place then the Surface Wetting Agent is essential where maximum adhesion to substrate is required. This should be applied at 250 to 500 microns after which the DFence Blok can be applied immediately.

For bridging large gaps or holes it is essential to place fibre-glass sheet, expanded metal or other suitable mechanical fasteners across the area prior to application of the DFence Blok.

MIXING

Add the hardener to the resin then mix thoroughly using a suitable mixing paddle or suitable size jiffy type mixer. Mix in such a fashion that the material is thoroughly dispersed from top to bottom of the container until homogenous.

APPLICATION

Spread the material over the prepared surface with a putty knife or spatula pressing firmly into all cracks and voids to ensure maximum surface contact and avoid trapping air.

A film of at least 5mm and up to 15mm can be applied in one coat if required even onto vertical surfaces without sagging. If a coat of greater than 15mm is required then it is important to let the first coat cure partially until firm such that the a subsequent coat can be applied.

For overhead applications it is possible to build 10mm in one coat, again if more is required then it is important to leave it to cure to firm before subsequent applications.

SHELF LIFE & STORAGE

A shelf life of 3 years from date of manufacture can be expected when stored at room temperature (22ºC) in their original containers.

PRECAUTION

For complete safety and handling information, please refer to Material Safety Data Sheets (MSDS) prior to using this product.

WARRANTY

ITW Performance will replace any material found to be defective.
As storage, handling and application of this material is beyond our control we can accept no liability for the results obtained.

DISCLAIMER

All information on this data sheet is based on laboratory testing and is not intended for design purposes.
ITW Performance Polymers makes no representations or warranties of any kind concerning this data.

For product information visit www.devconeurope.com alternatively for technical assistance please call +353 61 771 500.

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