



FLOSIL BET[®]
An Indo-Malaysian JV



Protecting your Assets from Devaluation

Special Protective Coating Solutions

Flosil-BET Coatings (India) Private Limited
An Indo – Malaysian JV

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Corrosion Protection is an area that is of utmost concern especially with regards to assets continuity and preservation. In line with our expertise and experience, we have developed and patented products that meet such critical demands and conditions.

Flosil-BET is an Indo - Malaysian Joint Venture focused on technology-based products for the complete Indian & Global Industries.

Flosil-BET has been a leading manufacturer of high-performance industrial coatings, and that tradition continues with innovative coating formulations that protect a wide range of substrates and enhance aesthetics.

In line with our expertise and experience, we have developed and patented products that meets such critical demands and conditions.

From water tanks and treatment plants, to manufacturing plants, industrial facilities, refineries and specialty Oil & Gas Platforms, Flosil-BET coatings can be found protecting virtually all types of structures.

Flosil-BET's extensive product line is backed by outstanding technical support through the company's network of knowledgeable coating consultants.

Corrosion Protection is an area that is of utmost concern especially with regards to assets continuity and preservation. Our Product is applied in more diverse geographical areas and climates than anyone in the industry.

Products

- | | | |
|----------------|----------------------------|-----------------------------|
| 1. Aqua Sealer | 5. Aqua Filler | 9. Flange Protection System |
| 2. Aqua ST | 6. Universal Degreaser L-7 | 10. SKIDFREE® Anti-Skid |
| 3. Aqua ST-03 | 7. Quick Seal | 11. KON-TAC® |
| 4. Aqua PU | 8. Rust Contact V | |

Approvals

- IIT Bombay
- SIRIM QAS
- Reliance KG D6
- SHELL
- Petronas

Product Characteristics

A high build epoxy to withstand heavy abrasion, chemical attack above or below water over a wide range of substrates to a maximum temperature resistance of 120°C.

A non-solvent type 100% volume solid epoxy with excellent adhesion to steel and metal. Versatile in which it can be applied onto damp or dry surfaces and displays excellent adhesion and compability to other coatings and is suitable for rebuilding pitted surfaces.

It is highly recommended for pitted surface and formulated for strength and versatility under adverse condition.

Physical Properties

No.	Type of Tests	Results
1.	Resistance to Organic Coatings to the effect of Rapid Deformation	(Kilogram-meter) at the impact failure end point - 911g (2Lbs)- More than 65 cm.
2.	Abrasion Resistance of Organic Coatings by the Taber Abraser	Wear Index = 20 (20mg / 1000cycles / 1kg)
3.	Pull-Off Strength of Coatings using Portable Adhesion Testers	More than 6.0 N/mm ² (870psi)

Application Data

Method	Trowel on
Min. Surface Preparation	ST2 - ST3 standard
Thinner	Not recommended
Mixing	Mix and stir components thoroughly, for 5 to 10 mins before application.

Colour	Black, Grey and White
Pack sizes	200g / 500g / 1KG
Non volatile content	100%
Mix ratio	Epoxy 13.5 and Hardener 1 in proportion by weight
Full cure	30°C in 48 hours
Pot life	15 to 20 mins at 30°C
Touch dry	2 to 3 hours
Temperature resistance	30°C - 150°C
Chemical resistance	75% H ₂ SO ₄
Volume Solid	100%
Shelf life	At least 24 months when stored in sealed containers.

Recommendation Of Use

To apply on to any surface that does not exceed 90°C except for rubber and thermoplastic.

Pitted Surface



Before

After



Before

After

What is L- 7?

L- 7 is an extremely effective, heavy duty degreaser and cleaning agent, that is fully biodegradable, and works equally well on vegetable, animal or mineral oils, fats, sooty deposits, inks and carbon.

It actually breaks down the molecular structure of any oil, grease or fat, destroying the binding that is the heart of most stubborn clean-up problems. It also emulsifies carbon black and soot.

Application Area

- L- 7 is intended for large-scale, heavy-duty clean-ups.
- Chemical Industry: removal of carbon black, soot, oils, greases, etc
- Cleaning of ventilating hoods, kitchen furniture, ovens, floors, nicotine-stained places
- Petroleum industry applications, like pumping and processing equipment, paraffin removal, injection well treatment, engine rooms and oil-saturated concrete.
- Automotive and metal industry applications and pre-paint preparations, which leave odours.
- Marine applications like bilges and fiberglass hulls...
- The ability to suppress gas and oil fires, exhaust stacks, coal dust and greasy soot.
- Major chemical and oil spills

Environment

- Fully bio-degradable
- Water-based
- Non-toxic
- Leaves no residues
- No halogenated solvents
- No noxious odours
- No volatile vapors
- Non-flammable
- Non-caustic

L- 7 is water-soluble, so it is a snap to clean up. In breaking down the molecular structure of grease and oil, it produces a dilute, non-toxic and readily biodegradable solution that can be rinsed away with plain water and disposed of, leaving no residues.

L- 7 has no volatiles vapors and virtually no odour. Since it has no flash point and is non-combustible, it is perfect for enclosed area applications, so safe storage is never a problem. Besides L- 7 has no phosphates, chlorinated solvents, butyl or halogens.

Product Application



Before

After



Before

After



Grease Application

Degreaser Application



After

Quick Seal

Product Characteristics

Quick Seal Epoxy Heavy Duty is a two-part adhesive consisting of an epoxy resin and a hardener. When mixed resin and hardener react to produce a tough, rigid, high strength bond in 5 minutes for most projects.

It can be used as an adhesive for a wide range of materials or as a versatile filler for gap bonding, surface repairs and laminating. Quick Seal Epoxy Heavy Duty does not shrink and is resistant to water and most common solvents. It can be sanded and drilled.

Product Information

Color	Off White	
Packing Size	100g, 200g, 500g & as per request.	
Non-volatile Content	100% (ASTM 2697-86)	
Mixing Ratio	Part A & Part B (2:1) by weight only	
Drying Properties	Coating thickness	Drying Time
	1000 µm (1mm)	45 – 60 min
	3000 µm (3mm)	25 – 30 min
	3mm - 5mm	6 - 10 min
Hard dry	Usable strength achieved in 30 minutes. Fully cured in 24 hours.	
Pot Life	6 min	
Shelf Life	At least 12 months when stored in sealed containers	

Application Data

Method of application	Putty Knife / Utility Knife
Cleaner	Xylene

Recommendation of Use

Bonding metal, glass, ceramic, wood, many rigid plastics, china tile, fibreglass, concrete and stone. Can be combined with wrapping for a more durable patch.

Non Recommendation of Use

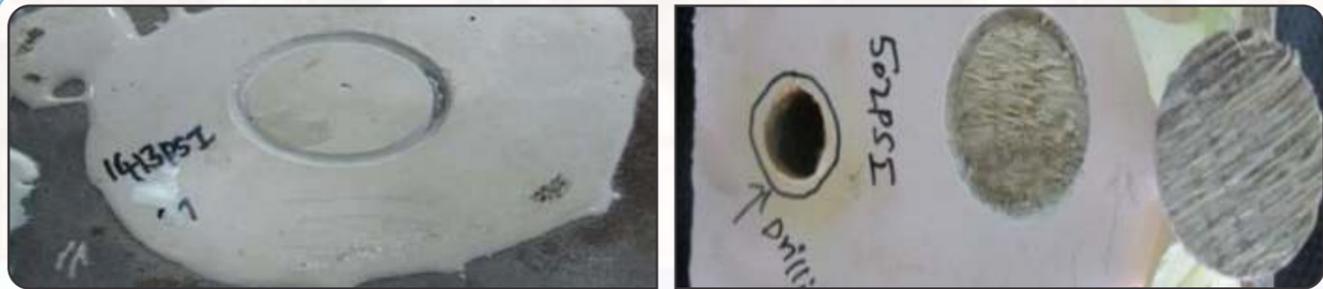
Polyethylene, Polypropylene, Acrylic sheet & Wet surface.

ASTM D-4541 (Pull off adhesion test)



Fiber Glass (FRP)

Tiles



Carbon Steel

Wood



Glass

Cement Plaster

Application over FRP Pipe



Before



8 mm Hole



Surface Preparation



Glass Quick Seal Application



Wrapping with FR-33 Clear



Pressure Test at 150 PSI(10bar) - 2days



Product Characteristics

- A viable and safe alternative where blasting is not option
- Non Hazardous
- Non Inflammable
- Non Toxic Material
- It can be applied directly and safely to the rust
- It turns into a black, stable compound upon reacting with rust
- It can also be applied on rusted galvanized steel without destroying the remaining protective coating.

Product Information

Description	Water based rust converter	
Appearance	Off White Colour	
Odour	Sweet Smell	
Coverage	4.9 sq meter per liter	
VOC (ASTM D 3960)	55 to 65 %.	
Weight per gallon	985 gram	
Boiling Point	100 deg C	
Solubility in water	100 % soluble	
Shelf life	about 12 months	
Recommended total DFT	65-90 microns 2.5 mil, minimum to 3.5 mils optimum,	
Recommended total WFT	150-200 microns	
Dry time to (ASTM D 1640) (3 mils wet film - 76 microns)	Set to touch	10 minute
	Dry to touch	30 minute
	Hard dry	40 minute
	Through (fingernail hard)	60 minute
	Over coating time minium	24 hours

Rust Contact V is self - inspecting in short period of time.

Apply at 8~10 mil (203-254 microns) wet in one coat by spray (19-21 tip), brush of roller.

Defects from improper application appear in a few minutes to within the 24 hours window prior to top coating.

Recommendation of Use

Rust Contact V is recommended for use on steel surfaces as a rust converting paint primer.

As an etch primer or sealer on non ferrous metals such as aluminum, copper, brass, bronze and on fibre glass.

Surface Preparation

- SSPC-SP1 Solvent Cleaning -Do not use hydrocarbon solvents
- SSPC-SP2 Hand Tool cleaning
- SSPC-SP3 Power Tool Cleaning
- SSPC-SP7 Brush-off Blast Cleaning
- SSPC-SP12 High & Ultra -High Pressure Water Jetting

Surface Application



Before

After

Application Procedure

Surface Application

Application	Remove all salt, loose rust mill scale, dirt, grease, oil, old paint and other deposits.
	To remove oil, dirt and salt apply according to manufacturer's directions and rinse. A residue free surface is essential before coating application begins. Do not use Acetone or dishwashing detergent to clean rusted steel surface.
	Brush, roll or spray undiluted Rust Contact V in a heavy white coat with no surface show-through at 8-10 mils wet film thickness. When black colour appears, rust conversion has started. If gray area appears apply more Rust Contact V while surface is tacky.
	Refer to colour chart and technical guide for complete application analysis. Wait at least 24 hours to topcoat.
Basic Use	Rust Contact V is recommended for use on all steel surface as rust converter / paint primer and as an etch primer or sealer on non ferrous metals such as aluminium, copper, brass.
	Protects against further rusting. Can be used on welds.
	Eliminates need to mechanically blast the white metal.
Limitations	Keep from freezing . Apply at temperatures above 40 °F and below 100 °F. Do not thin.
	Wait 24 hours before top coating, Do not use in areas with direct contact to edibles.
	Coatings subject to staining should be tested before large scale use.



Before

After



Before

After



Before

After



Before

After

Product Characteristics

- Able to protect the flange from corrosion
- Able to protect from crevice corrosion at the gasket
- Bolt and nut can be easily removed and refitted in case of any replacement
- Practical system meets Fire Rate CLASS 1
- Environmental friendly products (No hazardous material used)
- Significantly reduce the risk of product leakage



Application Method



Product Characteristics

The SKIDFREE® anti-skid system produced by Flosil-BET Coatings is an innovative product to prevent accidents/incidents due to skidding.

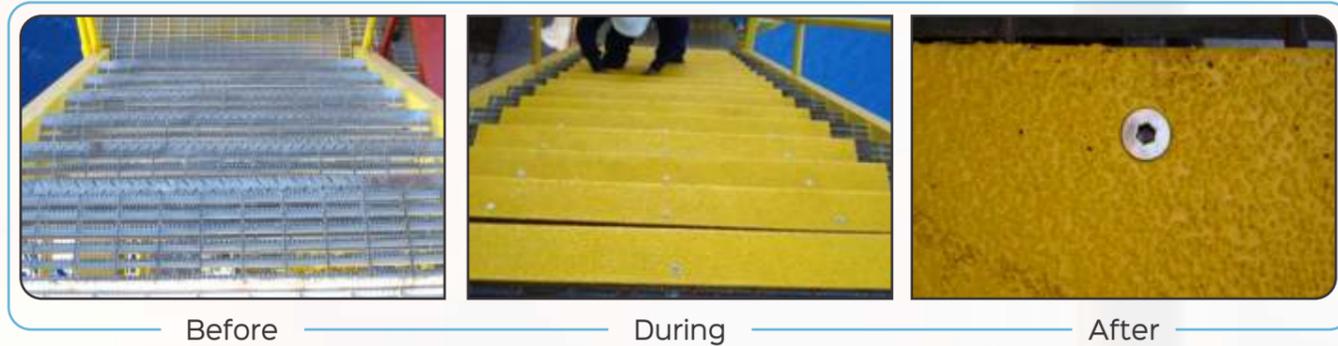
The proprietary SKIDFREE® anti-skid system has been designed in a way that prevents falls and slips usually associated with staircases, ladders and accesses.

Application Area

Oil-and-Gas	<ul style="list-style-type: none"> • Offshore facilities (Rigs) - Rig ladders / steps, offices, bathroom / toilets, storage areas, kitchen areas, working platforms / scaffolding. • Onshore facilities – Ladders / steps, offices, bathroom / toilets, storage areas, working platforms / scaffolding. • For the oil-and-gas sector, SKIDFREE® anti-skid system has already been utilized in the oil rigs as shown in the attached pictures. SKIDFREE® anti-skid system has provided the occupants in the facility the confidence in regard with their personal safety in the oilrig.
Office & Industrial Facilities	<ul style="list-style-type: none"> • Staircases, basements, parking areas, offices, pantries, toilets, storage areas etc.
Hotels	<ul style="list-style-type: none"> • Staircases, basements, parking areas, offices, pantries, toilets, etc. • For the hospitality industry, SKIDFREE® anti-skid system has been installed on the staircase in a major 5-star hotel, which not only provides safety to its guests and staff in preventing slippage on the steps but also provides aesthetic value-added designs to their staircases.
Domestic Homes	<ul style="list-style-type: none"> • Staircases, bathrooms / toilets, kitchen, aprons, etc.
Municipal Councils / City Halls	<ul style="list-style-type: none"> • Pedestrian malls, sidewalks.

Product Characteristics

- Glow-in-the-dark” coating – visible in the dark.
- Versatile system : can be custom-designed to any configuration as required by the client.
- High quality - exceeds the minimum requirement of ASTM E303-93(2003)
- Standard test method for measuring surface frictional properties using the British pendulum tester (Sirim report no. 2006KL0188).



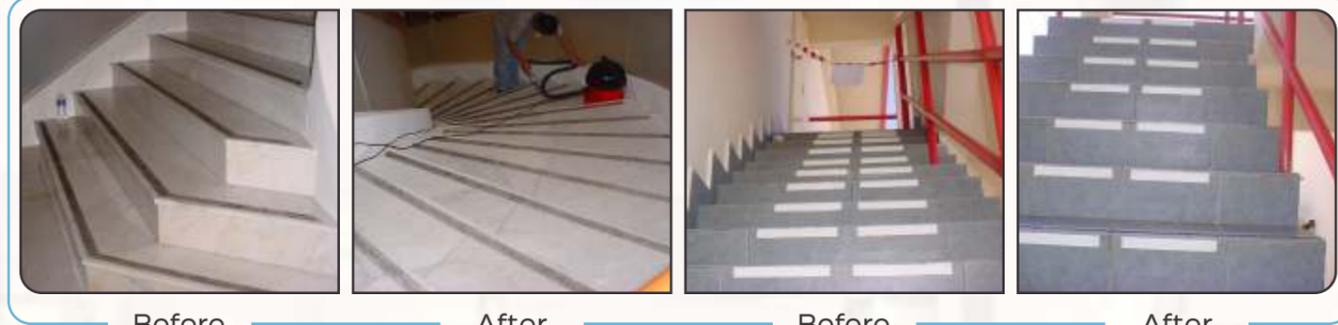
Before

During

After

5 Star Hotel Stair Case

BASF Petronas Stair Case



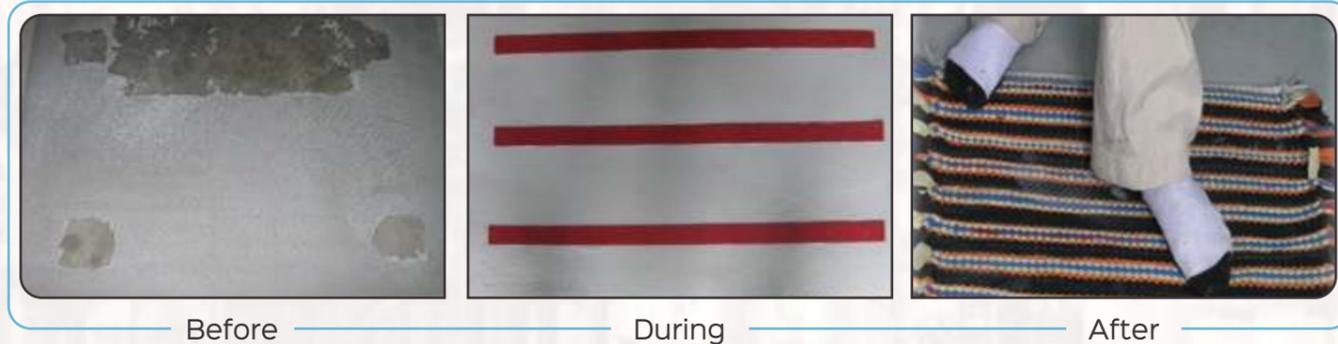
Before

After

Before

After

Floor - Mat



Before

During

After

Product Characteristics

Industries operating in marine, oil and gas industrial environments, especially located under direct and prolonged exposure to sunlight, rain and saline mildew contributes to extreme corrosion leading to serious consequences. The economic losses of such corrosion and deterioration not only includes cost of replacement but also loss in revenue and penalties due to down time during shut downs.

The areas most susceptible to such corrosion are along pipe supports especially if the supports or pipes are made of metal.

These costly shortcomings and indemnities can be avoided if the pipelines were protected from corrosion with a non-metallic isolator – to isolate the metal and metal contact point

Product Information

At Flosil-BET Coatings., KON-TAC® are made from high quality composite materials such as Fibre Reinforced Polymer (FRP) or Kevlar and build up with excellent adhesive agent.

FRP are used for KON-TAC® with diameter 1 inch to 6 inches, as the Kevlar are used for diameter 8 inches and above.

KON-TAC® acts as a non-metallic corrosion isolator by creating a barrier between pipe and its support structure. KON-TAC® sleeves are available in 1 inch to 24 inches according to pipe's outer circumference, which form a semi-round segment or can be tailored to Client's requirements.

Size (inch)	Length (mm)	Arc (mm)	Thickness (mm)	Material
1	203	21	4	FRP
1.5	203	30	4	FRP
2	203	38	4	FRP
2.5	203	46	4	FRP
3	203	56	4	FRP
4	203	72	4	FRP
5	203	89	4	FRP
6	203	106	4	FRP

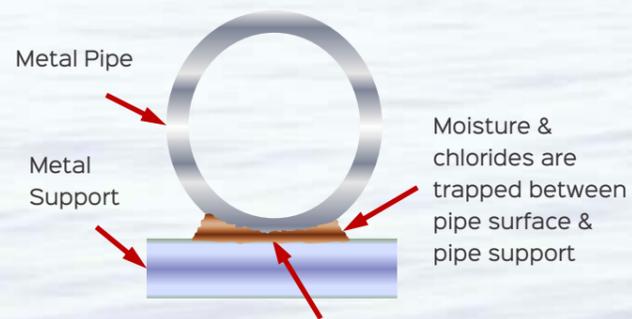
Size (inch)	Length (mm)	Arc (mm)	Thickness (mm)	Material
8	203	115	4	Kevlar
10	203	143	4	Kevlar
12	203	170	4	Kevlar
14	203	186	4	Kevlar
16	203	213	4	Kevlar
18	203	239	4	Kevlar
20	203	266	4	Kevlar

	Standard	FRP	Kevlar
Linear Thermal Expansion	ASTM E 831	2.17 x 10 ⁻⁴ mm/mm/°C	2.79 x 10 ⁻⁴ mm/mm/°C
Tensile Strength	ASTM D 3039	4,258 lbf/in ²	11,667 lbf/in ²
Elongation at Break	ASTM D 3039	0.8%	1%

Application



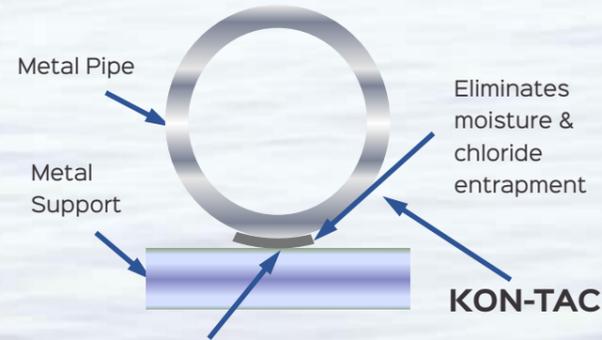
Current Problem



For old pipes, metal loss happened due to abrasion, corrosion & coating failure. This can lead to pipe leakage if prolonged without any preventive measure.

Hence, prior to KON-TAC installation, the pipe will be lifted up and repair the pitted areas with our paint, Aqua Sealer.

Our Solution



Contact point between pipe surface & pipe support has been isolated.

Our Valued Customers



Key factors contributing to Flosil - BET's success

- Advanced high-capacity robotic manufacturing processes.
- Highly experienced engineers and operators.
- Highly trained Quality Personnel.
- Professional after-sales service.
- Superior and unrivalled coating technology.