

**LOCTITE®**

# Surface Engineering Solutions

Rebuild, Repair and Protect Industrial Equipment



Excellence is our Passion

# Whatever You Rebuild, Repair and Protect ...

... Find the Right Solution!

## Henkel's Solutions for all Surface Engineering Needs

Henkel offers you more than state-of-the-art adhesives, sealants and surface treatment products. We give you access to our unique expertise covering the entire value chain. So whatever you rebuild, repair or protect, with our technical consultancy and expert training we are able to offer you specific solutions for your industry and your maintenance needs.

### Technical Consultancy

Our products have been designed to meet the specific challenges of your industry. With an extensive network of sales and technical engineers around the world we offer you professional consultancy to find the best solution for your specific surface engineering needs.

- Technical Consultancy for Surface Engineering Needs: page 5

**Technical  
Consultancy**

**Metal  
Working**

**Cleaning &  
Pre-Treatment**

**Bonding**

**Sealing**

### Cleaning & Pre-Treatment

Correct surface preparation is the most important factor affecting the total success of any surface treatment. Without correct surface profile and surface cleanliness coating systems will quickly fail. To ensure high quality applications we offer superior cleaning and pre-treatment products like surface cleaners and corrosion inhibitors.

- Loctite® Cleaning & Pre-Treatment Products: page 6

## Filling & Protecting

To permanently repair, rebuild and restore damaged machinery, equipment, floors and walls specific products are required to put worn parts back to a serviceable condition. Our range includes putty or pourable formulations for aluminum, steel and concrete.

- Loctite® Hysol® Metal Repair Solutions: page 8
- Loctite® Nordbak® Concrete Repair Solutions: page 8

## Expert Training

Maintenance Workshop Training from Henkel provides maintenance engineers with the necessary skills, knowledge and tools to reduce plant downtime and drive down maintenance costs.

- Expert Training for Surface Engineering Needs: page 20

**Filling &  
Protecting**

**Coating**

**Lubricating**

**Expert  
Training**

## Coating

The protection of machinery and equipment against external attack is a challenge in any industry. Protective coatings and compounds offer maintenance solutions to the problems caused by wear, abrasion, erosion, chemical attack, and corrosion. Our products are available in sprayable, brushable as well as trowelable formulations.

- Loctite® Nordbak® Protective Coatings & Compounds: page 12

# Henkel's Solutions for all Surface Engineering Needs



## The challenge

The protection of industrial equipment and machinery is crucial for any kind of harsh industrial environments. Industrial parts are very often worn out by wear, abrasion, erosion, chemical attack, corrosion and mechanical damage. If parts are not protected properly the efficiency impairs; initial functionality and safety at work is no longer guaranteed, leading to costly acquisition of new parts.

## Henkel's solution

At Henkel, we understand plant maintenance – and the challenge you face in ensuring reliability, safety and durability. We offer you an extensive network of experts, knowledge and innovative technologies to master this challenge.

Partner with us to benefit from our competencies and to achieve the best results for your maintenance and repair needs:



### **Increase Reliability**

of worn parts by restoring them to a serviceable condition



### **Improve Safety**

by preventing occupational accidents due to part failure



### **Save Time**

by minimizing downtime and extending part life



### **Reduce Costs**

by avoiding part replacement and reducing spare part inventories

This brochure is designed to give you a detailed overview of our extensive product portfolio for surface engineering needs. To ensure that you achieve the best solution for your maintenance need, please contact a Henkel Engineer for technical consultancy.





Our highly experienced Henkel Engineers are committed to provide the highest level of technical support and assistance in the industry. Working closely with local industrial suppliers and selected engineering service agents, our Application Engineers provide full process support – from maintenance assessment, performance and analytical testing to implementation of solutions – to find the right solution for your needs.

## **For your surface engineering needs we offer you technical consultancy for:**

- Surface cleaning
- Surface preparation
- Surface pre-treatment
- Repair product selection
- Surface protection product selection
- Application process
- Control recommendation
- Application tips

# Cleaning & Pre-Treatment



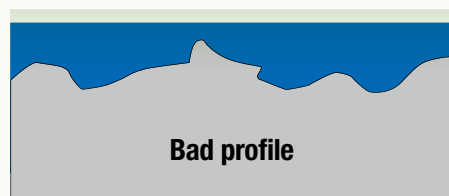
**Correct surface preparation is crucial for the successful application of both, metal repair products and protective coatings and compounds. Good surface preparation will:**

- Improve adhesion to parts
- Prevent corrosion between the surface and product used
- Extend maintenance intervals

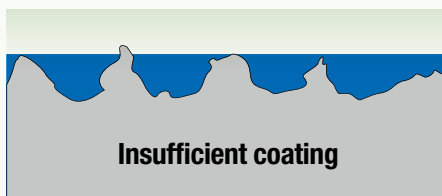
The two main important factors for a successful application are **surface profile** and **surface cleanliness**.

## 1. Surface profile

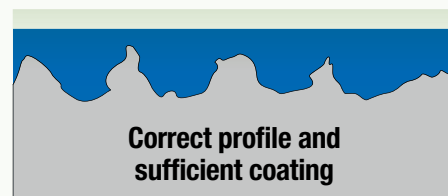
Improve adhesion by increasing surface area and providing a keyed anchor pattern.



Surface profiles vary depending on the type and size of abrasive particles impacting the surface. A bad surface profile provides poor anchor pattern, resulting in adhesive failure.



Correct profile but insufficient coating causes surface peaks which may be exposed to rust and/or contamination.



It is critical to achieve the correct profile depth and product coating thickness. Loctite® product applications require a minimum 75µm surface profile. Only with this anchor pattern and a sufficient coating layer, maximised coating adhesion can be guaranteed.

■ Coating

■ Surface

The best way to achieve the correct surface profile is abrasive blasting. It does not only remove visible surface rust and contaminants, but also creates a surface roughness ideal for bonding to. See following table for surface specification.

## Surface preparation grades of blast

	Unblasted	Blast class 1	Blast class 2	Blast class 2.5	Blast class 3
Rust grade A					
Rust grade B					
Rust grade C					
Rust grade D					

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### Rust grade

- A** Steel with mill scale layer intact and very minor, or no rusting
- B** Steel with spreading surface rust and the mill scale commenced flaking
- C** Rusty steel with mill scale layer flaked and loose or lost but only minor occurrence of pitting
- D** Very rusty steel with mill scale layer all rusted and extensive occurrence of pitting

### Blast class

- 1** (SP-7/N4) Very light over clean with removal of loose surface contaminants
- 2** (SP-6/N3) Substantial blast clean with wide spread, visible contaminate removal and base metal colour appearing
- 2,5** (SP-10/N2) Intensive blast clean leaving shading grey metal with only contaminates
- 3** (SP-5/N1) Complete blast clean with consistent metal colour all over and no visible contaminates

## 2. Surface cleanliness

Chemical contaminants that are not readily visible, such as chlorides and sulphates, attract moisture through coating systems resulting in premature failure. For this reason it is fundamentally important to clean all substrates with an industrial strength cleaner and degreaser. Heating up the device before cleaning can facilitate the removal of contaminants.

### Loctite® 7840 – Cleaner and degreaser

- Before abrasive blasting
- Meets the requirements of a wide range of industrial cleaning applications
- Biodegradable, solvent free, non-toxic and non-flammable, diluted with water (Rated USFA-C1)



### Loctite® 7063 – Cleaner and degreaser

- After abrasive blasting
- Compatible with metal, glass, rubber, most plastics and painted surfaces
- No residue, rapid flash off cleaner ideal for removing greases and contaminates prior to adhesive bonding, coating and sealing applications



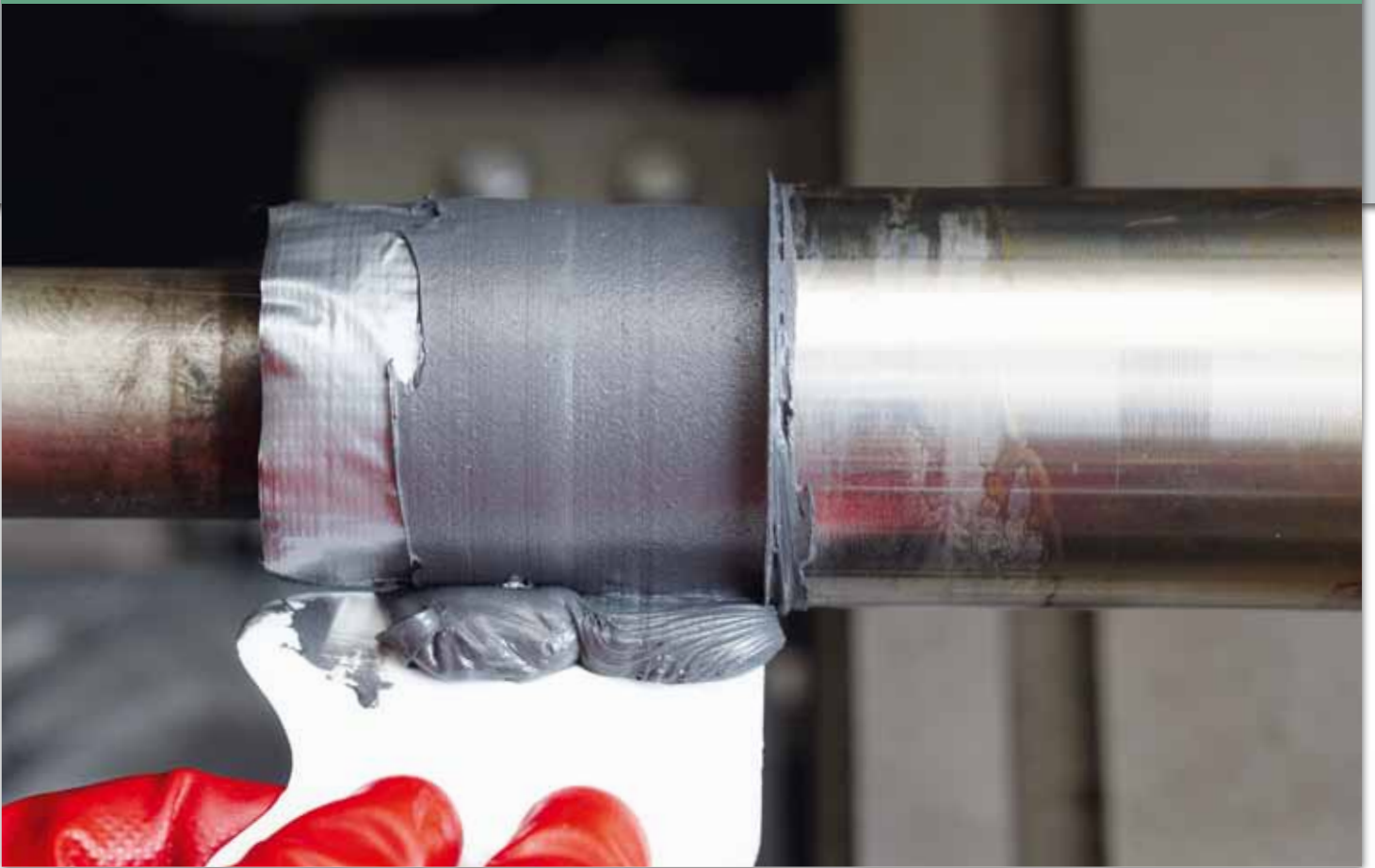
### Loctite® 7515 – Flash rust prevention

- Pre-treatment on large surfaces to avoid any flash rust
- Easy and fast to apply on freshly blasted surface steel
- Increases surface working time up to 48 hours





# Filling & Protecting



**Loctite® Hysol® Metal Repair Compounds** are designed to repair, rebuild and restore worn metal parts without the need of heat or welding. Typical applications include cracks in housings, worn keyways in shafts and collars, worn cylindrical shafts, etc.

**Loctite® Nordbak® Concrete Repair products** are designed to guarantee fast, reliable and long lasting repairs. They bond to concrete, wood, glass, steel and other construction materials. Typical applications include ramps and loading areas, support beam and footer repairs, bridge decking and supports, concrete bunds and walls etc.



## Why choose Loctite® Hysol® Metal Repair Solutions?

Traditional repair methods such as hard face welding are time consuming and expensive. Alternatively, Loctite® Hysol® Metal-filled Compounds are easily applied and offer superior compressive strength and protection qualities.

### Key benefits:

- Low-shrinking
- Can be drilled, tapped, or machined after cure
- Superior adhesion to metal, ceramic, wood, glass and some plastics
- Excellent resistance to aggressive chemicals
- Choice of mild steel, aluminium or non-metallic fillers
- Create durable repairs



Loctite® Hysol® 3472 pourable steel-filled, self-levelling 2K-epoxy

## Why choose Loctite® Nordbak® Concrete Repair Solutions?

Traditional repair methods such as repairing floors or walls with conventional concrete need extensive time for curing. Alternatively, Loctite® Nordbak® Concrete Repair products are easily mixed, applied and cured after 45 minutes.

### Key benefits:

- Easy to mix and apply
- Can be applied at temperatures even below 0 °C
- Can be applied on damp surfaces
- Does not shrink or crack
- Reduces repair time, labour costs and downtime
- Chemical resistant
- Impact resistant
- Can be coloured with standard cement colouring powders



Loctite® Magna Crete® 7257 and Loctite® High Performance Quartz 7204: quicker and safer than conventional concrete.

# Metal and Concrete Surface

## Repair and Rebuild

### Repair or rebuild damaged parts?

#### Steel

##### Kneadable

##### High compressive strength

##### Putty

##### Pourable

#### Solution

#### Loctite® 3463 (Metal Magic Steel™ stick)

#### Loctite® Hysol® 3478 A&B (Superior Metal)

#### Loctite® Hysol® 3471 A&B (Metal Set S1)

#### Loctite® Hysol® 3472 A&B (Metal Set S2)

Description	2K-Epoxy	2K-Epoxy	2K-Epoxy	2K-Epoxy
Mix ratio by volume / weight	N/A	4:1 / 7.25:1	1:1	1:1
Working life	3 min.	20 min.	45 min.	45 min.
Fixture time	10 min.	360 min.	180 min.	180 min.
Shear strength (GBMS)	≥ 3.45 N/mm <sup>2</sup>	17 N/mm <sup>2</sup>	20 N/mm <sup>2</sup>	25 N/mm <sup>2</sup>
Compressive strength	82.7 N/mm <sup>2</sup>	125 N/mm <sup>2</sup>	70 N/mm <sup>2</sup>	70 N/mm <sup>2</sup>
Service temperature range	-30 to +120°C	-30 to +120°C	-20 to +120°C	-20 to +120°C
Pack sizes	50g, 114g	453g, 3.5kg tub kit	500g tub kit	500g tub kit



#### Loctite® 3463

- Emergency sealing of leaks in pipes and tanks
- Smoothes welds
- Repairs small cracks in castings

Sets in 10 minutes. Steel filled kneadable stick. Adheres to damp surfaces and cures under water. Chemical and corrosion resistant. Can be drilled, filed and painted.

**ANSI/NSF Standard 61**



#### Loctite® Hysol® 3478 A&B

- Rebuilding keyways and spline assemblies
- Rebuilding of bearing housing, clamp connections, or tensioning elements.

Ferro-silicon filled with outstanding compression strength. Ideal for renewing surfaces subjected to compression, thrust, impact and harsh environments.



#### Loctite® Hysol® 3471 A&B

- Seal cracks in tanks, castings, vessels and valves
- Patch non-structural defects in steel casings
- Resurface worn air seals
- Repair pitting caused by cavitation and/or corrosion






General-purpose steel-filled, non-sagging 2K-Epoxy. Used to rebuild worn metal parts.



#### Loctite® Hysol® 3472 A&B

- Form moulds, fixtures and prototypes
  - Repair threaded parts, pipes and tanks
- Pourable, steel-filled, self levelling. Recommended for casting into hard to reach areas, anchoring and levelling, forming moulds and parts.

## What material are you filling / rebuilding?

		Aluminium			Concrete	
Fast cure		Multi purpose	High temperature resistance	Reliable and long lasting concrete repairs		
Loctite® Hysol® 3473 A&B (Metal Set S3)		Loctite® Hysol® 3475 A&B (Metal Set A1)	Loctite® Hysol® 3479 A&B (Metal Set HTA)	Loctite® Nordbak® 7257	Loctite® Nordbak® 7204	
2K-Epoxy		2K-Epoxy	2K-Epoxy	2K Magnesium Phosphate	2K-Epoxy	
1:1		1:1	1:1	Refer to TDS	Refer to TDS	
6 min.		45 min.	40 min.	3 to 11 min.	60 min.	
15 min.		180 min.	150 min.	15 to 22 min.	300 min.	
20 N/mm²		20 N/mm²	20 N/mm²	–	–	
60 N/mm²		70 N/mm²	90 N/mm²	90 N/mm²	83 N/mm²	
-20 to +120°C		-20 to +120°C	-20 to +190°C	-26 to +1,090°C	-29 to +65°C	
500g tub kit		500g tub kit	500g tub kit	5.54kg kit, 25.7kg kit	19kg kit	
						
<p><b>Loctite® Hysol® 3473 A&amp;B</b></p> <ul style="list-style-type: none"><li>• Repair holes in tanks, leaks in pipes and elbows</li><li>• Renew stripped threads</li><li>• Rebuild worn steel parts</li></ul> <p>Fast curing, steel filled, non-sagging. Ideal for emergency repair and repairing worn metal parts to prevent downtime.</p>		<p><b>Loctite® Hysol® 3475 A&amp;B</b></p> <ul style="list-style-type: none"><li>• Repair aluminium castings, cracked or worn aluminium parts and stripped aluminium threads</li></ul> <p>A non-sagging, heavily reinforced, aluminium powder filled 2K-Epoxy. Easily mixed and moulded to form odd shapes if required. Cures to a non-rusting, aluminium-like finish.</p>	<p><b>Loctite® Hysol® 3479 A&amp;B</b></p> <ul style="list-style-type: none"><li>• Rebuilding and repairing worn metal parts in high operating temperature applications.</li></ul> <p>A non-sagging, heavily reinforced, aluminium powder filled 2K-Epoxy. Easily mixed and moulded to form odd shapes if required. Cures to a non-rusting, aluminium-like finish.</p>	<p><b>Loctite® Nordbak® 7257</b></p> <ul style="list-style-type: none"><li>• Repair / rebuild of ramps and loading areas, support beam and footer repairs, bridge decking and supports, concrete bunds and walls etc.</li></ul> <p>Two-component, rapid setting concrete repair and grouting system designed for making reliable, long lasting repairs. Bonds to concrete, wood, glass, steel and construction materials. Can be mixed and applied from -25 °C to 45 °C.</p>	<p><b>Loctite® Nordbak® 7204</b></p> <ul style="list-style-type: none"><li>• Floor protection in chemical containment areas (baseplates)</li><li>• Protection of baseplates against high dynamic loads</li><li>• Resurfacing ramps and stairs</li></ul> <p>Trowelable two-component quartz filled epoxy for repairing and protecting flooring &amp; surfaces exposed to chemical and mechanical attacks. The product has a very high compression strength.</p>	

# Coating



**Loctite® Nordbak® Protective Coatings and Compounds** offer maintenance solutions to problems caused by wear, abrasion, erosion, chemical attack and corrosion. They are available in trowelable, brushable and sprayable formulations with special fillers for tough conditions and are ideal for all those largescale repairs that have to last. Typical applications for this product range include for example air ducts, pumps, heat exchangers, centrifuges, impellers, fan blades, cyclones, pipes, tanks, retention areas, etc.

**Loctite® Nordbak® Protective Compounds** provide excellent wear resistance and superior adhesion. Filled with ceramic particles, specific to the different service conditions, they protect against abrasion and therefore extend the service life of a wide range of plant areas and plant equipment. Their key advantage is their capability to create a sacrificial and renewable working surface, protecting the structural integrity of the original substrate.

**Loctite® Nordbak® Protective Coatings** are designed to protect against corrosion and chemical attack. They do not contain any ceramic fillers and therefore allow a very smooth surface.



## Why choose Loctite® Nordbak® Protective Coatings and Compounds?

Traditional repair methods such as hard metal welding or flame spraying are expensive and difficult to use for large surfaces. Alternatively, Loctite® Nordbak® Protective Coatings and Compounds are easily applied on all surface sizes and offer the extra benefit of corrosion protection. In addition Loctite® Nordbak® Protective Coatings and Compounds don't create heat stress during the application.

### Key benefits:

- Restore worn surfaces and extend part life of new as well as old parts
- Increase part efficiency
- Save costs by avoiding part replacement and reducing spare part inventories
- Protect parts against abrasion, erosion, chemical attack and corrosion
- Excellent chemical resistance for effective protection of assemblies



## Key factors to consider when choosing the right Loctite® Nordbak® Protective Coating or Compound:

### Particle size

To improve abrasion resistance, particle sizes of the abrasive materials and of the Loctite® Nordbak® Protective Coatings and Compounds should be similar. The range of Loctite® Nordbak® Protective Coatings and Compounds offers grades for coarse particles as well as fine particle protection and some specific products for pure chemical attack or corrosion protection. A special product offering high impact resistance is also included in the range.

### Temperature resistance

Operating temperatures of Loctite® Nordbak® Coatings and Compounds range from -30 to +120 °C. Some special grades, such as Loctite® Nordbak® 7230 or Loctite® Nordbak® 7229, can be used up to 230 °C. These special grades require post curing to achieve their ultimate high temperature performance.

### Chemical and corrosion resistance

Thanks to the special epoxy matrix of Loctite® Nordbak® Coatings and Compounds, this range of products is resistant to most types of chemical attack. All our products offer good protection against fresh water and sea water, ammonium sulphate and sodium hydroxide. Specific products also resist strong chemicals such as sulphuric acid and urea.

**A comprehensive overview for the chemical resistance of Loctite® Nordbak® Coatings and Compounds is available – please contact your local Henkel Technical Support Team for further information.**

# Application Tips & Tricks

## Preventing flash rusting

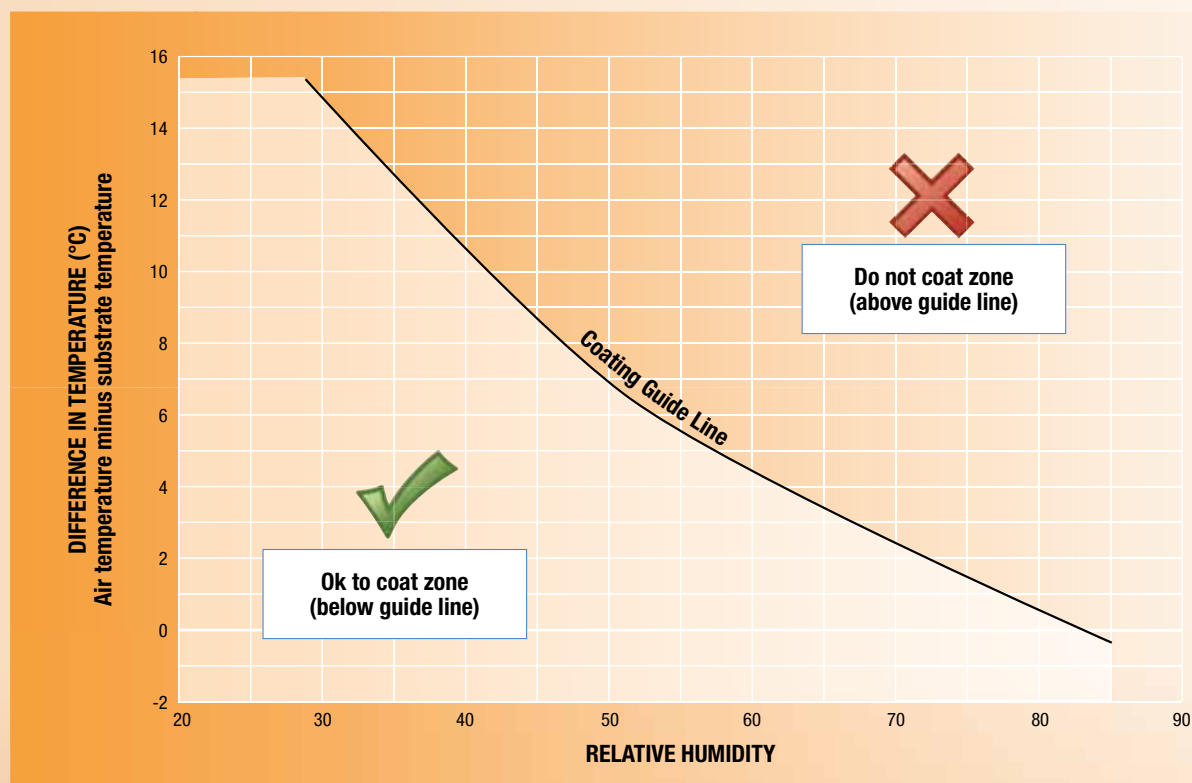
In high humidity conditions, flash rusting of a newly prepared metal surface can develop within minutes, causing contamination which will need to be removed again before a coating is applied. A thin coat of Loctite® 7515 applied as soon as possible after preparing a metal surface will prevent flash rusting.

## Moisture free surface

It is critical to the success of most coating systems that the surface is completely free of moisture prior to and during product application and curing.

## Dewpoint

Condensation of water (dew) from the atmosphere onto the surface can occur, given the right conditions. For a given set of conditions, the temperature at which condensation will occur is called the dewpoint. As long as the surface temperature is 3 °C (or more) above the dewpoint temperature, it is generally considered safe to coat as far as risk of condensation is concerned.



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## Pre-coating for maximum adhesion

After surface preparation, pre-coat the application surface by rubbing the mixed composite into the substrate. This technique, called “wetting out the surface”, helps the repair material fill all the crevices in the application surface, creating a superior bond between the composite and substrate. The rest of the mixed product can then be applied over the pre-coat to finish the application.



## Creating a smooth finish

Smooth out the uncured product with a warm trowel for a smooth, glossy finish. A heat gun can also be used to create a smooth finish.



## Wear indicator

When applying two coats of Loctite® Nordbak® Coatings and Compounds, different colors can be used as wear indicator. When the first coat begins to wear the second coat colour will show through, providing an accurate visual indicator of wear.



## Special recommendations for sprayable products

As for all Loctite® Nordbak® Protective Coatings and Compounds best coating results are obtained by applying the product specific layer thickness. This is especially important for application on vertical surfaces.




For best results also in corners and edges, it is recommended to smooth angles to a radius of 3 mm.

When using Loctite® Nordbak® 7255 it is recommended to heat the product prior to application to ensure easy spraying and a smoother surface.



# Protective Coatings and Compounds

## Which attack to be resisted?

Solution	Pure chemical attack or corrosion		
	On concrete	On metal	
	Brushable coating	Sprayable coating	Sprayable ceramic compound
	Loctite® Nordbak® 7277	Loctite® Nordbak® 7266	Loctite® Nordbak® 7255
Colour	Blue	Blue	Green, grey
Service temperature range (dry)	-30 to +95°C	-30 to +100°C	-30 to +95°C
Mix ratio by volume (A:B)	2.8:1	2.3:1	2:1
Mix ratio by weight (A:B)	100:28	100:34	100:50
Working time	30 min.	30 min.	40 min.
Surface drying time	6 h	5 h	4 h
Recommended total layer thickness*	min. 0.5 mm	min. 0.2 mm	min. 0.5 mm
Pack sizes	5kg, 30kg	1kg, 30kg	900ml, 30kg
<b>Practical hints:</b> 1) Apply Loctite® 7515 at the end of surface preparation and before applying the final coating/compound. Benefit: Temporary corrosion protection which prolongs the working time of the surface to up to 48 h. 2) Badly worn surfaces are rebuilt using Loctite® Nordbak® 7222 Wear Resistant Putty or Loctite® Nordbak® 7229 or 7230 High Temperature Wear Resistant Compound, prior to applying protective Loctite® Nordbak® composite coatings. Please refer to your local Henkel Technical Engineer for further information.			
	<b>Loctite® Nordbak® 7277</b> Brushable non-filled two-part epoxy for <ul style="list-style-type: none"> <li>• Tanks, reservoirs and pipes</li> <li>• Flooring</li> </ul>	<b>Loctite® Nordbak® 7266</b> Sprayable non-filled two-part epoxy for <ul style="list-style-type: none"> <li>• Pumps, centrifuges and pipes</li> <li>• Gearboxes, engines and compressors</li> <li>• Heat exchangers, fans and casings</li> <li>• Tanks and reservoirs</li> </ul>	<b>Loctite® Nordbak® 7255</b> Ultra-smooth, ceramic reinforced two-part epoxy for <ul style="list-style-type: none"> <li>• Lining tanks and chutes</li> <li>• Rudders and pintle housings</li> <li>• Heat exchangers</li> <li>• Condensers</li> <li>• Cooling pump impellers</li> </ul>

\*It is recommended for sprayable and brushable products to apply minimum two layers to achieve total layer thickness.



## Abrasion or erosion on metal with or without chemical attack

## Fine particle

## Coarse particle

Brushable ceramic compound

High temperature brushable ceramic compound

Pneu-Wear ceramic compound

Trowelable ceramic compound

High impact trowelable ceramic compound

Loctite® Nordbak® 7117

Loctite® Nordbak® 7234

Loctite® Nordbak® 7226

Loctite® Nordbak® 7218

Loctite® Nordbak® 7219

Dark grey

Grey

Grey

Grey

Grey

-29 to +95°C

-29 to +205°C

-30 to +120°C

-30 to +120°C

-30 to +120°C

3.38:1

2.75:1

4:1

2:1

2:1

100:16

100:21

100:25

100:50

100:50

60 min.

30 min.

30 min.

30 min.

30 min.

3.5 h

8 h + 3 h post cure\*

6 h

7 h

6 h

min. 0.5 mm

min. 0.5 mm

min. 6 mm

min. 6 mm

min. 6 mm

1kg, 6kg

1kg

1kg, 10kg

1kg, 10kg

1kg, 10kg



**Loctite® Nordbak® 7117**  
Brushable ceramic filled two-part epoxy for

- Impellers, butterfly valves
- Pump housings
- Cyclones
- Lining tanks

**Loctite® Nordbak® 7234**  
Brushable ceramic filled two-part epoxy for

- Exhausters
- Heat exchangers and condensers
- Lining tanks and chutes
- Butterfly valves

\*post-cure necessary to reach max. service temperature resistance

**Loctite® Nordbak® 7226**  
Ceramic filled two-part epoxy for

- Dredge pump liners
- Flumes and troughs
- Pump impellers
- Vibrating feeders
- Chutes/hoppers

**Loctite® Nordbak® 7218**  
Trowelable, ceramic filled two-part epoxy for

- Cyclone and separator bodies
- Dust collectors and exhausters
- Pump liners and impellers
- Fan blades and housings
- Chutes and hoppers
- Elbows and transition points

**Loctite® Nordbak® 7219**  
Rubber modified, ceramic filled two-part epoxy for

- Dredge pump liners
- Flumes and troughs
- Pump impellers
- Vibrating feeders
- Chutes/hoppers

# Protective Coatings and Compounds

Product	Product description	Particle size	Colour	Mix ratio by volume (A:B)	Mix ratio by weight (A:B)	Working time	Surface drying time	
<b>Loctite® Nordbak® 7117</b>	Ceramic filled epoxy compound	Fine	Dark grey	3.38:1	100:16	60 min.	3.5 h	
<b>Loctite® Nordbak® 7218</b>	Ceramic filled epoxy compound	Large	Grey	2:1	100:50	30 min.	7 h	
<b>Loctite® Nordbak® 7219</b>	Ceramic filled epoxy compound	Large	Grey	2:1	100:50	30 min.	6 h	
<b>Loctite® Nordbak® 7221</b>	Epoxy coating	Fine	Grey	2.3:1	100:29.4	20 min.	16 h	
<b>Loctite® Nordbak® 7222</b>	Ceramic filled epoxy compound	Small	Grey	2:1	100:50	30 min.	6 h	
<b>Loctite® Nordbak® 7226</b>	Ceramic filled epoxy compound	Fine	Grey	4:1	100:25	30 min.	6 h	
<b>Loctite® Nordbak® 7227</b>	Ceramic filled epoxy compound	Fine	Grey	2.75:1	100:20.8	30 min.	6 h	
<b>Loctite® Nordbak® 7228</b>	Ceramic filled epoxy compound	Fine	White	2.8:1	100:22.2	15 min.	5 h	
<b>Loctite® Nordbak® 7229</b>	Ceramic filled epoxy compound	Small	Grey	4:1	100:25	30 min.	6 h + 2 h post cure	
<b>Loctite® Nordbak® 7230</b>	Ceramic filled epoxy compound	Large	Grey	4:1	100:25.6	30 min.	7 h + 2 h post cure	
<b>Loctite® Nordbak® 7234</b>	Ceramic filled epoxy compound	Fine	Grey	2.6:1	100:21	30 min.	8 h + 3 h post cure	
<b>Loctite® Nordbak® 7255</b>	Ceramic filled epoxy compound	Fine	Green/grey	2:1	100:50	40 min.	4 h	
<b>Loctite® Nordbak® 7266</b>	Epoxy coating	—	Blue	2.3:1	100:28	30 min.	5 h	
<b>Loctite® Nordbak® 7277</b>	Epoxy coating	—	Blue	2.8:1	100:34	30 min.	6 h	

Fillers used in these products can request special tools for machining. Please contact your local Henkel Technical Support Team for further information.

	Recommended layer thickness	Hardness shore D	Compressive strength N/mm <sup>2</sup>	Shear strength N/mm <sup>2</sup>	Service temperature range	Pack sizes	Comments
	min. 0.5 mm	87	105	23.2	-30 to +95°C	1kg, 6kg	Brushable ceramic compound
	min. 6 mm	90	110.3	–	-30 to +120°C	1kg, 10kg	Trowelable ceramic compound
	min. 6 mm	85	82.7	–	-30 to +120°C	1kg, 10kg	High impact trowelable ceramic compound
	min. 0.5 mm	83	69	17.2	-30 to +64°C	5.4kg	Brushable ceramic compound, high chemical resistance
	–	89	80	10	-30 to +107°C	1.3kg	Trowelable ceramic putty
	min. 6 mm	85	103.4	34.5	-30 to +120°C	1kg, 10kg	Pneu-Wear ceramic compound
	min. 0.5 mm	85	86.2	24.2	-30 to +95°C	1kg	Brushable ceramic compound, self-levelling (grey)
	min. 0.5 mm	85	86	24	-30 to +95°C	1kg, 6kg	Brushable ceramic compound, self-levelling (white)
	min. 6 mm	85	103.4	34.5	-30 to +230°C	10kg	Trowelable ceramic compound, high temperature resistant
	min. 6 mm	90	103.4	–	-28 to +230°C	10kg	Trowelable ceramic compound, high temperature resistant
	min. 0.5 mm	–	–	–	-29 to +205°C	1kg	High temperature brushable ceramic compound
	min. 0.5 mm	86	106	31	-30 to +95°C	900ml, 30kg	Sprayable ceramic compound
	min. 0.2 mm	84	105	17	-30 to +100°C	1kg, 30kg	Sprayable non-filled coating for metal surfaces
	min. 0.5 mm	–	–	–	-30 to +95°C	5kg, 30kg	Brushable non-filled coating for concrete surfaces



**Loctite® Maintenance Workshop Training from Henkel** provides maintenance engineers with the necessary skills, knowledge and tools to reduce plant downtime and drive down maintenance costs.

The workshops are suitable for all engineers. Conducted at the customer's premises, training can be tailored to meet individual needs through a plant tour and pre-survey. This includes training materials and a review of the common causes of plant and equipment failure and their prevention.

Contact Henkel now for more details and to arrange training for your maintenance team.



# Application Case Histories

## Shaft

### Challenge

Metal shaft is worn out resulting in device failure and being not able to properly assemble the counterpart anymore.



### Solution

Rebuild shaft by using Loctite® Hysol® 3478 to recreate smooth surface and ensure needed fit between shaft and bearing.



### Benefit

Shaft is put back to serviceable condition in only 4 hours.

## Screw conveyor

### Challenge

Conveyor of waste water plant is exposed to aggressive media and solid particles resulting in heavy corrosion and worn surface (conveyor) as well as damaged surrounding (foundation).



### Solution

Overhaul by using Loctite® Nordbak® 7255 (conveyor) and Loctite® Nordbak® 7257 (foundation).



### Benefit

Extended service life by up to 10 years and significant cost savings.

## Decanter centrifuge

### Challenge

Centrifuge of waste water plant made of mild steel is exposed to moisture resulting in heavy corrosion of the outer wall.



### Solution

Coat with Loctite® Nordbak® 7227 to rebuild and avoid steady corrosion.



### Benefit

Protect against device failure caused by corrosion and extend service intervals.

# Application Case Histories

## Pump

### Challenge

Pump of a refinery made of stainless steel is exposed to aggressive chemicals and moisture resulting in abrasion as well as galvanic corrosion.



### Solution

Coat with Loctite® Nordbak® 7266 (outer wall) and Loctite® Nordbak® 7255 (inner wall).



### Benefit

High wear resistance of the inner wall and improved efficiency, insulation of outer wall against corrosion.

## Centrifugal pump

### Challenge

Centrifugal pump of a refinery is exposed to strong corrosion and wear. Rebuild by Grupo NAVEC needed to put device back to serviceable condition.



### Solution

Coat with Loctite® Nordbak® 7255 to rebuild and increase resistance against wear.



### Benefit

Prevent part replacement and improve pump efficiency.

## Impeller

### Challenge

Pump impeller made of cast iron is exposed to fluids and particles resulting in heavy abrasion and corrosion.



### Solution

First rebuild worn part with Loctite® Hysol® 3478. Secondly coat with Loctite® Nordbak® 7227 to create a smooth surface.



### Benefit

Extend part working life and improve pump efficiency.

## Notes

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