PIPELINE CORROSION · SURFACE PREPARATION

Rust Converter vs Blasting for Pipelines

Abrasive blasting is the best way to prepare rusted steel — where it is allowed. On many running plants it is not. Then the steel gets a wire brush, the rust stays in the pits, and the new coat fails. A rust converter is made for that steel.



75%
of coating failures begin with poor surface preparation

5%
of GDP is lost to corrosion in India every year

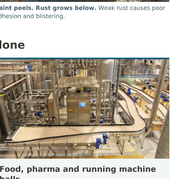
Figures as published by Stanvac: Z 704 RUSTEX-NMB industrial rust converter

01 Why surface preparation decides coating life

A coating is only as good as the steel under it. Hand cleaning leaves rust in every pit. The rust grows, lifts the film — and in a season the pipe needs repainting again.

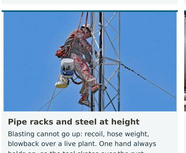


Pitting eats the pipe wall. Rust, moisture, salt and acid remain trapped in pits.



Paint peels. Rust grows below. Weak rust causes poor adhesion and blistering.

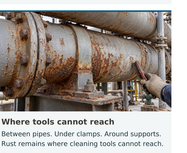
02 Where blasting cannot be done



Fire-risk and hot-work-banned zones

Refineries, gas plants, solvent stores and dust zones. Blasting and sparking tools are banned; the steel gets a wire brush — and the rust gets a future.

Where one spark is unacceptable →



Food, pharma and running machine halls

One gram of grit in the product costs more than the paint job. Where dust would spoil product or wreck machines, the steel gets a wipe and a repaint.

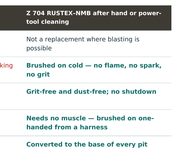
Where blasting grit can never fly →



Pipe racks and steel at height

Blasting cannot go up: recoil, hose weight, blowback over a live plant. One hand always holds on, so the tool skates over the rust.

At height, steel is never properly prepared →



Where tools cannot reach

Between pipes. Under clamps. Around supports. Rust remains where cleaning tools cannot reach.

Pipeline corrosion repair system →

A wire brush alone is not the answer. A wire brush removes loose rust only. What stays keeps growing. The coat fails in a season or two — exactly where repainting is hardest to permit.

03 Blasting vs rust converter: side by side

Situation	Abrasive blasting	Z 704 RUSTEX-NMB after hand or power-tool cleaning
Where it is permitted and practical	**The best preparation method**	Not a replacement where blasting is possible
Refinery, gas, solvent and dust zones	Banned: blasting and sparking tools	**Brushed on cold — no flame, no spark, no grit**
Food, pharma, running machines	Grit near open product or machinery	**Grit-free and dust-free; no shutdown**
Steel at height	Cannot go up: recoil, hose weight, blowback	**Needs no muscle — brushed on one-handed from a harness**
Rust left in pits after hand cleaning	—	**Converted to the base of every pit**
Salt and acid traces after washing	—	**Converts beneath residual traces and seals them out**

Not every rust converter is the same

Ordinary single-chemistry converter	Z 704 — TriArmor multi-chemistry + nano-bonding
Single chemistry — skins the surface	**Multi-chemistry — converts deep in every pit**
Porous film; no bond to the topcoat	**Nano-molecular bonding seals and bonds the topcoat**
Re-rusts within a season	**Holds for years — 500+ hours salt spray under epoxy primer**
Traps salt and acid residues — pitting keeps growing under the film	**Tolerates residual salt and acid after a simple wash**

04 What Z 704 RUSTEX-NMB does

Z 704 RUSTEX-NMB is a surface-tolerant rust converter and adhesion primer for hand- or power-tool-cleaned steel (St 2 / St 3) where abrasive blasting is not possible. It converts the rust, seals the steel and bonds the topcoat.

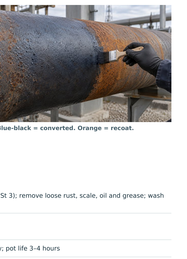
A coating over a Z 704-bonded surface — instead of painted straight over rust — is shown to:

≈ 2×
grip to the steel

≈ 2×
life before breakdown

500+ h
salt spray, with epoxy

Independent corrosion research, as published on the Z 704 page.

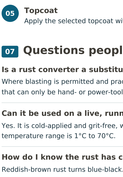


Blue-black = converted. Orange = recoat.

Surface preparation	Hand or power tool (St 2 / St 3); remove loose rust, scale, oil and grease; wash and dry
Service / application temperature	1°C – 70°C
Application	Brush, roller or HVLP spray; pot life 3–4 hours
Coverage	7 m² per litre per coat on average (profile-dependent)
Overcoating	Topcoat within 24 hours — epoxy, polyurethane, alkyd or TPA
Not for	Alkaline-contaminated surfaces without a neutralising wash; structural repair of heavily wasted steel

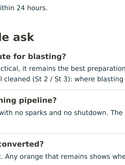
05 The complete pipeline system: repair, convert, protect

Repainting over rust in pits hides the next failure. Stanvac's pipeline system works in one order: measure → clean → restore → convert → protect.



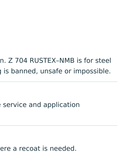
Repair

Z801 Faststeel: fast-setting, steel-filled repair for approved local pits.



Convert

Z 704 RUSTEX-NMB: converts residual rust, treats salt and acid traces, bonds the topcoat.



Protect

A topcoat matched to the exposure: 2050 Polyhyb SHP (dry, dusty), 1040 TST & NMB + 727 SHP (wet), or 1040 TST & NMB + 718 EGF + 727 SHP (acid fumes, coastal salt).

Pipe already weakened or leaking? Plug the leak, then wrap to re-strengthen: Stanvac's 944 Synthoglass and 824 wrapping systems reinforce suitable damaged pipework in place. Pipe wrapping systems →

06 How to apply Z 704 on a pipeline

01 Wash and dry
Remove loose rust, scale and old coating by hand or power tool; degrease. A fresh-water wash is mandatory on coastal, salty or acid-fume steel.

02 Mix the full kit
Mix for 5–6 minutes to a uniform consistency, fresh on site.

03 Apply
By brush, roller or HVLP, working it into pits and crevices.

04 Check the colour
Verify a uniform blue-black conversion; spot-recoat any orange.

05 Topcoat
Apply the selected topcoat within 24 hours.

07 Questions people ask

Is a rust converter a substitute for blasting?
Where blasting is permitted and practical, it remains the best preparation. Z 704 RUSTEX-NMB is for steel that can only be hand- or power-tool cleaned (St 2 / St 3): where blasting is banned, unsafe or impossible.

Can it be used on a live, running pipeline?
Yes. It is cold-applied and grit-free, with no sparks and no shutdown. The service and application temperature range is 1°C to 70°C.

How do I know the rust has converted?
Reddish-brown rust turns blue-black. Any orange that remains shows where a recoat is needed.

What about coastal or acid-fume pipelines?
Wash with fresh water and dry first. Z 704 then converts beneath residual salt and acid traces and seals them out. It is not for alkaline residues such as cement or lime splash or caustic zones, unless these are neutralised and washed off first.

Can a rust converter repair a thinned or leaking pipe?
No. It is not a structural repair for heavily wasted steel: assess the remaining wall thickness first. Approved local pits are filled with Z801 Faststeel; weakened or leaking pipework is re-strengthened with a Stanvac pipe wrapping system.

Request a free site trial

Pick the worst rusted steel in your plant and remove the loose rust. Stanvac will wash, convert and seal it in front of you — 30 minutes, free — and you watch the rust turn blue-black.

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Z 704 RUSTEX-NMB industrial rust converter | Pipeline corrosion repair system | Pipe repair and re-strengthening

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Figures as published on stanvac.com. Performance depends on substrate condition, preparation, application and service exposure; confirm the current product TDS before specifying.