ADT NS RM

HIGH-STRENGTH NON-SHRINK STRUCTURAL REPAIR MORTAR | SINGLE PACK | EN 1504-3 R4 | 70 N/mm²

M70 GRADE · POLYMER MODIFIED · THIXOTROPIC · 10 – 40 mm PER LAYER · FIBRE REINFORCED · ADD WATER ONLY

TECHNICAL DATA SHEET Version 0.1 (Draft — spec-driven targets, pending first-batch COA + NABL report) | September 2026

PRODUCT DESCRIPTION

ADT NS RM is a single-pack, high-strength, polymer-modified, fibre-reinforced, shrinkage-compensated cementitious repair mortar for the structural reinstatement of damaged concrete. Mixed with clean water on site, it gives a thixotropic, hand- or trowel-applied mortar that holds on vertical and overhead faces in layers of 10 – 40 mm without slump or sag, bonds to prepared concrete and reinforcement, and cures to a dense, low-permeability section of 70 N/mm² — well above any parent concrete it will meet. Its controlled expansion offsets drying shrinkage so the repair does not crack away from the substrate. Designed for spalled columns and beams, chajja and balcony edges, slab soffits, parapets, lintels, industrial floors and any RCC repair where shuttering is not practical.

NS = non-shrink. RM = repair mortar. Where ADT NS Micro is poured into shutters, ADT NS RM is applied by hand — the same structural-grade chemistry, in a form that stays where the trowel puts it.

KEY FEATURES & BENEFITS

High Strength — Core USP
≥ 60 N/mm² minimum, 70 N/mm² target at 28 days (EN 1504-3 R4 is 45) — the repair is stronger than any parent concrete it meets

Thixotropic, No Sag
Holds 40 mm on vertical and 25 mm overhead in one layer — no formwork, no slumping, no repeated build-up

Shrinkage Compensated
Controlled expansion offsets drying shrinkage (ASTM C157) — no crack line between repair and parent concrete

Fibre Reinforced
Micro-fibre controls plastic-shrinkage cracking in thick or exposed repairs

High Bond
Polymer-modified — pull-off adhesion ≥ 2.0 N/mm² to prepared concrete (EN 1542), cohesive failure in substrate

Low Permeability
Dense matrix resists water, chloride and carbonation ingress — protects the reinforcement behind it

Modulus Matched
Elastic modulus 25 – 30 kN/mm² — in the range of M40 – M60 concrete, so the repair shares load instead of fighting it

Single Pack, 45-min Pot Life
Add water only; a full 30 kg bag stays workable for 45 minutes at 30°C — enough for one section, no waste

A COVER REPAIR IS NOT A REPAIR IF IT IS WEAKER THAN THE CONCRETE IT REPLACES

Most site repair mortars are 20 – 30 N/mm² — fine for cosmetic patching, but a spalled column or a corroded beam bottom needs the new material to carry the same stress the old concrete did. ADT NS RM is specified at M70 grade — well above the R4 line of 45 N/mm², stronger than any building concrete it will meet, bonded at 2 N/mm², and shrinkage-compensated so the bond line never opens. It is the difference between a society repair that lasts until the next monsoon and one the structural engineer will sign off.

WHERE IT SITS IN THE ADT RANGE

	ADT Flex SBR NPU mortar	ADT NS RM	ADT NS Micro	ADT NS Grout
What it is	Site-mixed SBR + cement + sand	Factory single-pack structural repair mortar	Factory single-pack flowable micro concrete	Factory single-pack precision grout
How applied	Trowel	Hand / trowel — thixotropic	Poured / pumped into shutters	Poured under plates
Thickness	5 – 25 mm	10 – 40 mm per layer (80 mm in pockets)	25 – 100 mm per pour	10 – 50 mm gaps
28-day strength	≈ 25 – 30 N/mm²	≥ 60 · target 70 N/mm² (R4+)	55 N/mm² (M)	≥ 70 N/mm²
Buy it for	Fillets, small patches, bond coats	Spalls, edges, soffits, columns without shutters	Jackets and sections with shutters	Base plates and bolt pockets

ADT INDUSTRIES PVT. LTD. Raheja Arcade, Block-1, GF, Plot-61, Sector-11, CBD Belapur, Navi Mumbai – 400614
Toll Free: 1800 410 1818 | WhatsApp: +91 96193 03000 | support@adtindustries.com | www.adtindustries.com | www.adtchemical.com

TECHNICAL DATA (spec-driven targets @ 30°C — to be confirmed by batch COA & NABL)

Base
Portland cement, graded silica sand (≤ 2 mm), redispersible polymer, micro-fibre, shrinkage-compensating and thixotropic additives

Form / Colour
Single pack — grey dry powder; add water only

Water : Powder Ratio
0.15 – 0.16 by weight · 4.5 – 4.8 L per 30 kg bag

Fresh Wet Density (IS 1199 / ASTM C138)
2.05 – 2.15 kg/L

Yield
≈ 15.5 – 16 L per 30 kg bag

Consumption
≈ 2.0 kg powder per m² per mm thickness · 30 kg ≈ 1.5 m² at 10 mm

Pot Life @ 30°C
≈ 45 minutes

Layer Thickness
Vertical 10 – 40 mm · Overhead 10 – 25 mm · Pockets / horizontal up to 80 mm; further layers after initial set

Setting Time (IS 4031 Pt 5)
Initial ≈ 2 h · Final ≈ 5 h

Compressive Strength (IS 516 / ASTM C109 / EN 12190)
1 day ≥ 25 · 3 days ≥ 40 · 7 days ≥ 50 · 28 days ≥ 60 N/mm² minimum — target 70

Flexural Strength (ASTM C348 / EN 196-1)
≥ 9 N/mm² at 28 days

Tensile Strength (ASTM C307)
≥ 4 N/mm² at 28 days

Bond to Concrete (EN 1542 / ASTM C1583)
≥ 2.0 N/mm² — cohesive failure in substrate

Modulus of Elasticity (ASTM C469 / EN 13412)
25 – 30 kN/mm² (EN 1504-3 R4: ≥ 20)

Drying Shrinkage (ASTM C157)
Shrinkage compensated — ≤ 0.05% at 28 days

Capillary Absorption (EN 13057)
≤ 0.5 kg/m²·h$^{0.5}$

Carbonation Resistance (EN 13295)
Depth ≤ reference concrete MC(0.45)

Chloride Content (IS 2645 / EN 1015-17)
Nil — chloride-free

Sag / Slump (EN 1308)
No sag at 40 mm vertical, 25 mm overhead

Application Temperature
10°C – 40°C

Compliance Target
EN 1504-3 Class R4 structural repair (exceeds) · Fire Class A1 — to be established by NABL

Packing
30 kg HDPE laminated bag

Shelf Life & Storage
12 months in unopened bags — cool, dry, on pallets, away from moisture

Reference Standards
IS 516 · IS 1199 · IS 2645 · IS 4031 · ASTM C109 · C138 · C157 · C307 · C348 · C469 · C1583 · EN 1504-3 · EN 1542 · EN 12190 · EN 13057 · EN 13295 · EN 13412 · EN 1308

CONSUMPTION & BAG CALCULATOR

One rule everywhere: 2 kg of powder per m² per mm. Area (m²) × thickness (mm) × 2 ÷ 30 = bags. Add 10% for waste on rough, irregular spalls. One 30 kg bag + 4.6 L water ≈ 15.5 L of mortar.

Application	Typical thickness	Consumption	One 30 kg bag covers
Column / beam spall reinstatement	25 mm	≈ 50 kg / m²	≈ 0.6 m²
Chajja / balcony edge (75 mm × 150 mm profile)	75 mm × 150 mm	≈ 23 kg / m run	≈ 1.3 m run
Slab soffit patch (overhead, 2 layers)	30 mm	≈ 60 kg / m²	≈ 0.5 m²
Parapet / wall face repair	15 mm	≈ 30 kg / m²	≈ 1.0 m²
Cover reinstatement over cleaned bars	40 mm	≈ 80 kg / m²	≈ 0.4 m²
Honeycomb / pocket fill (horizontal)	50 mm	≈ 100 kg / m²	≈ 0.3 m²

Worked example: society repair — 12 column spalls averaging 0.6 m² at 25 mm (≈ 360 kg) + 30 m of chajja edge (≈ 690 kg) + 20 m² of slab soffit at 30 mm (≈ 1,200 kg) = 2,250 kg + 10% → ≈ 83 bags (2.5 MT). Water ≈ 380 L. Figures indicative — measure actual depths after cutting back to sound concrete.

APPLICATION METHOD — STEP BY STEP

Phase 1 — Surface & Reinforcement

1 CUT BACK TO SOUND CONCRETE

Remove all loose, delaminated and carbonated concrete with a chisel or breaker. Saw-cut the perimeter square, minimum 10 mm deep — no feather edges. Sound with a hammer; hollow = remove more.

2 EXPOSE & CLEAN THE STEEL

Expose corroded bars fully with 20 mm clearance behind them. Wire-brush or needle-gun to bright metal — rust left on the bar is corrosion left in the repair.

3 PROTECT THE STEEL

Apply anti-corrosive zinc-rich primer to the bars and let it dry. Section loss over 20% goes to the structural consultant before any mortar is placed.

4 SATURATE & BOND COAT

Wet the surface to SSD — damp, no free water. Brush a bond coat of ADT NS RM slurry (or ADT Flex SBR NPU 1 : 1 with cement) firmly into the surface and apply the mortar while the bond coat is still wet.

Phase 2 — Mixing, Applying & Curing

5 MIX — WATER FIRST

Put 4.5 – 4.8 L of clean water in the bucket, add the full 30 kg bag slowly under a slow-speed drill mixer (≤ 400 rpm) and mix 3 – 4 minutes to a lump-free, thixotropic consistency. Never add water afterwards to “loosen” it.

6 APPLY & COMPACT

Press the mortar firmly into the wet bond coat by gloved hand or trowel, working from the back of the cavity outwards to fill behind the bars. Build vertical faces to 40 mm and overhead to 25 mm per layer. Score the surface of a layer that will be over-coated.

7 NEXT LAYER & FINISH

Apply further layers once the previous one has stiffened (2 – 4 h), after re-wetting. Finish the final layer with a wooden float to match the surrounding profile — over-trowelling brings water to the surface and weakens it.

8 CURE 7 DAYS

Cover with wet hessian and polythene, or apply ADT WBCC immediately after finishing. Cure 7 days minimum. Photograph, record bag count and batch numbers — this is the warranty file.

Note: In pockets or horizontal fills deeper than 80 mm, use ADT NS Micro in shutters instead. Where the repair is exposed to rain, follow with ADT Acrylic Coat or ADT Strongflex 2K after 7 days. Do not extend NS RM with site sand or SBR — the fibre, polymer and expansion are already in the bag.

8 SITE MISTAKES THAT WASTE A REPAIR MORTAR

Extra water for “easy trowelling”
Every litre above 4.8 per bag cuts strength and lets the layer sag. It is designed to be stiff — that is what holds it overhead

Feather edges
A repair that thins to zero breaks off at the edge within a season. Saw-cut the perimeter square, ≥ 10 mm deep

Mortar on rusty steel
The mortar bonds to metal, not to rust. Clean to bright and prime — or the corrosion continues behind the new cover

Dry substrate, no bond coat
Dry concrete steals the mix water and the repair debonds as a sheet. SSD plus a wet bond coat, every time

One 80 mm layer on a vertical face
It sags, cracks and traps air. Two layers of 40 mm maximum, the first scored and stiffened

Mixing by hand in a tray
Hand mixing never disperses the polymer and fibre — lumps, low bond. Drill mixer, 3 – 4 minutes

Over-trowelling the surface
Polishing brings water and fines to the top — a weak, dusty skin that cracks. Wooden float, once

No curing — “thoda sa hi hai”
Thin repairs dry fastest and crack first. Hessian + polythene or WBCC, 7 days, no exceptions

TYPICAL SYSTEM BUILD-UPS

Column / Beam Spall
Cut back square → clean and prime steel → SSD + bond coat → NS RM in ≤ 40 mm layers to profile → WBCC cure → exterior paint or Acrylic Coat

Chajja / Balcony Edge
Break spalled edge → prime steel, add bars if lost → edge form board → NS RM built to profile → cure → Strongflex 2K on top face, drip groove cut

Slab Soffit (overhead)
Cut back → clean and prime bars → bond coat → NS RM 2 × 25 mm overhead layers → cure → Flex SBR NPU skim if a paint finish is required

Parapet / Lintel Cover Loss
Remove loose cover → prime steel → NS RM 15 – 25 mm → cure → Plaster Mix 100 plaster or Acrylic Coat + paint

AREAS OF APPLICATION

Columns & Beams	Chajjas & Balconies	Slab Soffits	Parapets & Lintels
Spalled cover, corroded bars	Edge and soffit reinstatement	Overhead patch repairs	Cover loss, cracked sections

Staircases	Water Tanks & STPs	Precast & Industrial	Marine / Coastal RCC
Waist slab and step edges	Wall sections, with waterproofing	Chipped edges, pedestals, plinths	Chloride-damaged cover

QUALITY HOLD POINTS — SIGN OFF BEFORE THE NEXT STEP

Hold point	Check	Acceptance
H1 Cut-out	Sound concrete reached, square edges, depth	Hammer sounds solid; perimeter saw-cut ≥ 10 mm; ≥ 20 mm clear behind bars
H2 Steel	Cleaned, primed, section loss assessed	Bright metal, primer dry; consultant sign-off if loss > 20%
H3 Bond coat	SSD and wet bond coat	Surface damp, no free water; mortar applied while bond coat is wet
H4 Mix	Water measured, drill mixer, time	4.5 – 4.8 L per bag; lump-free; used within 45 min; cubes cast per 40 bags
H5 Layers	Thickness per layer, compaction	≤ 40 mm vertical / ≤ 25 mm overhead; no voids behind bars on tapping
H6 Cure & inspect	Curing method, cracks, hollowness	Hessian / WBCC same day; 7 days; no hollow sound at 28 days; 7-day cube ≥ 50 N/mm²

SYSTEM PRODUCTS

ADT NS Micro — pours and jackets deeper than 80 mm, with shutters · **ADT NS Grout** — base plates, bolt pockets · **ADT Flex SBR NPU** — bond slurry and skim finishing · **ADT WBCC** — curing compound · **ADT Acrylic Coat** / **ADT Strongflex 2K** — waterproofing over repairs exposed to water · **ADT Seal MPU 150** — sealing the repair perimeter where movement is expected

FOR CONSULTANTS — READY SPECIFICATION CLAUSE

Copy this clause directly into your BOQ / tender specification:

"Reinstatement of spalled and damaged concrete to columns, beams, slabs, chajjas and parapets shall be carried out with ADT NS RM or approved equivalent — a single-pack, high-strength, polymer-modified, fibre-reinforced, shrinkage-compensated, chloride-free cementitious repair mortar conforming to EN 1504-3 Class R4, mixed with clean water only at 0.15 – 0.16 by weight and hand- or trowel-applied in layers of 10 – 40 mm (vertical) and 10 – 25 mm (overhead) onto a saturated substrate with a wet bond coat, achieving minimum compressive strength of 25 N/mm² at 1 day, 50 N/mm² at 7 days and 60 N/mm² at 28 days (EN 12190 / IS 516), flexural strength of 9 N/mm² (EN 196-1), bond to concrete of not less than 2.0 N/mm² (EN 1542), modulus of elasticity of not less than 25 kN/mm² (EN 13412) and capillary absorption not exceeding 0.5 kg/m²·$h^{0.5}$ (EN 13057), after removal of defective concrete to sound, square-cut edges, cleaning and priming of reinforcement, and followed by 7 days of wet curing or an approved curing compound."

PRECAUTIONS

Do not exceed the specified water content — excess water causes sag, shrinkage cracking and loss of strength. Do not apply below 10°C or above 40°C, on frozen or water-logged substrates, or in direct hot sun without shading. Do not extend with sand, cement or SBR. Not a substitute for structural assessment: replacement or addition of reinforcement is decided by the structural consultant, not the applicator. Cementitious material is alkaline when wet — avoid inhaling dust and prolonged skin contact; wear gloves, goggles and dust mask; wash splashes with clean water; on eye contact rinse thoroughly and seek medical advice. Keep out of reach of children. Clean tools with water before the mortar hardens.

IMPORTANT NOTICE

This is Draft v0.1 of the data sheet, prepared from ADT's manufacturing specification for this product. All values are specification targets that the manufacturer must meet or exceed; they will be replaced by tested values from the first-batch Certificate of Analysis and NABL laboratory report before release, and this document is not for external circulation until then. Users should verify suitability for their specific application and cast trial cubes before large-scale use. For repair design, bag estimates and site support, contact ADT technical support on the toll-free number below.

एक अटूट भरोसा