ADT NS MICRO

NON-SHRINK FREE-FLOW REPAIR MICRO CONCRETE | SINGLE PACK | 55 N/mm² · Formerly known as ADT Micro Concrete

FREE FLOW · SHRINKAGE COMPENSATED · PUMPABLE · 100 mm IN ONE POUR · ADD WATER ONLY

TECHNICAL DATA SHEET Version 0.1 (Draft — renamed from ADT Micro Concrete; (M) values pending NABL) | September 2026

PRODUCT DESCRIPTION

ADT NS Micro (formerly ADT Micro Concrete) is a single-pack, ready-to-use dry powder of Portland cement, selected graded aggregates and shrinkage-compensating additives. Mixed with clean water on site, it produces a free-flowing, non-shrink repair micro concrete that reaches congested reinforcement and confined sections where normal concrete cannot be placed or compacted. A controlled expansion system offsets plastic shrinkage and settlement, giving a tight, monolithic bond to the parent concrete, and rapid strength gain allows early de-shuttering. It is designed for structural repair of damaged RCC beams, columns, slabs, chajjas and walls, and for jacketing of columns to restore or increase load-carrying capacity.

NS = non-shrink. Micro = it goes where a vibrator cannot. One bag, one bucket of water, one pour — the repair concrete that fills every gap behind the rebar and stays there.

KEY FEATURES & BENEFITS

Free Flowing — Core USP
Fills congested reinforcement and confined sections completely without vibration — no honeycombs behind the bars

Non-Shrink
Controlled expansion (≈ 0.45%, M) compensates plastic shrinkage and settlement — no gap between repair and parent concrete

High Early Strength
15 N/mm² at 1 day, 40 at 7 days, 55 at 28 days (M) — de-shutter in 24 h, reload early

Pumpable
Pours or pumps into beam soffits, column jackets and under-slab cavities — reaches where a trowel cannot

100 mm in One Pour
Up to 100 mm thickness in a single operation; deeper sections extended with clean 10 mm aggregate

Dense & Low Permeability
Dense repair section resists moisture and chloride ingress — protects the reinforcement it surrounds

Compatible with Old RCC
Thermal expansion and modulus matched to existing concrete — moves with the structure, no delamination

Single Pack, Add Water Only
Factory-controlled dry blend — no site batching of cement, sand and admixture; same quality on every site

THE REPAIR THAT FAILS IS THE ONE WITH A GAP BEHIND THE STEEL

A jacket or beam repair does not fail because the concrete was weak — it fails because ordinary concrete could not get behind the bars, and the void it left became the next corrosion cell. ADT NS Micro is engineered around that one problem: it flows like a grout, fills like a liquid and expands slightly as it sets, so the space behind every bar is full and stays full. Strength you can specify; the absence of voids you can only get from flow.

WHERE IT SITS IN THE ADT RANGE

	ADT Flex SBR NPU mortar	ADT NS Micro	ADT NS Grout
What it is	Site-mixed polymer repair mortar	Factory single-pack flowable repair concrete	Factory single-pack precision grout
Thickness	10 – 40 mm, trowel applied	25 – 100 mm per pour, poured / pumped	10 – 50 mm gap fill (100 mm with aggregate)
Where	Patch repairs, fillets, chajja edges	Column jackets, beam soffits, slab & wall sections	Base plates, bolt pockets, machine foundations
28-day strength	≈ 25 – 30 N/mm²	55 N/mm² (M)	≥ 70 N/mm² (ADT spec)
Buy it for	Small hand repairs	Structural section repair & strengthening	Precision load transfer under steel

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TECHNICAL DATA (typical values @ 30°C — (M) = manufacturer typical, NABL pending)

Base
Portland cement, graded aggregates (≤ 4 mm) and shrinkage-compensating additives

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

Water : Powder Ratio
0.16 – 0.18 by weight · 4.8 – 5.4 L per 30 kg bag (M)

Fresh Wet Density (IS 1199 / ASTM C138)
2,200 – 2,300 kg/m³ (M)

Yield
≈ 16 L per 30 kg bag at W/P 0.16 (M)

Flow (IS 1199 flow table / ASTM C1437)
Free-flowing, self-compacting at W/P 0.16 — target ≥ 500 mm spread (TBC)

Working Life @ 30°C
20 – 30 minutes (TBC)

Compressive Strength (IS 516 / ASTM C109)
1 day: 15 N/mm² · 3 days: 28 · 7 days: 40 · 28 days: 55 N/mm² (M)

Flexural Strength (IS 516 / ASTM C580)
≥ 6 N/mm² at 28 days (M)

Tensile Strength (ASTM C307)
≥ 2.5 N/mm² at 7 days (M)

Bond to Concrete (EN 1542 / ASTM C882)
≥ 1.5 N/mm² target — TBC by NABL

Expansion (ASTM C827 / C1090)
≈ 0.45% controlled expansion (M — method TBC)

Modulus of Elasticity (ASTM C469)
≥ 20 kN/mm² target (EN 1504-3 R4 requirement)

Chloride Content (IS 2645 / BS 1881)
Nil — chloride-free (certificate TBC)

Thickness per Pour
25 – 100 mm in one operation; above 100 mm extend with 10 mm aggregate (see calculator)

De-shuttering Time @ 30°C
≈ 24 hours (TBC)

Application Temperature
10°C – 40°C

Compliance Target
EN 1504-3 Class R4 structural repair — to be established through NABL testing

Packing
30 kg HDPE laminated bag

Shelf Life & Storage
6 months from manufacture in unopened bags (M) — 12 months targeted; cool, dry, on pallets, away from moisture

Cleaning
Tools and mixer with water immediately — hardened material only mechanically

Reference Standards
IS 516 · IS 1199 · IS 2645 · ASTM C109 · C138 · C307 · C469 · C580 · C827 · C882 · C1437 · EN 1504-3 · EN 1542

YIELD & BAG CALCULATOR

One rule everywhere: one 30 kg bag + 4.8 L water = ≈ 16 L of micro concrete. Volume of the repair in litres ÷ 16 = bags. Add 5% for wastage and formwork leakage. Cement : sand : aggregate batching on site is not required — the bag is the mix design.

Application	Typical section	Volume per unit	Bags per unit
Column jacket — 300 × 300 to 450 × 450 mm, 3 m high	75 mm all round	≈ 340 L	≈ 22 bags
Beam soffit / side repair — 300 mm wide	50 mm × 300 mm × 1 m run	≈ 15 L / m	≈ 1 bag per m
Slab underside / patch repair	50 mm deep	≈ 50 L / m²	≈ 3.2 bags / m²
Chajja / balcony edge reinstatement	75 mm × 150 mm × 1 m run	≈ 11 L / m	≈ 0.7 bag per m
Wall / parapet section, 1 m²	50 mm thick	≈ 50 L	≈ 3.2 bags
Deep pour > 100 mm (with 10 mm aggregate)	up to 50% aggregate by weight	≈ 24 L per bag + 15 kg agg.	volume ÷ 24

Worked example: society structural repair — 6 columns jacketed 75 mm × 3 m (≈ 2,040 L) + 20 m of beam soffit at 50 mm (≈ 300 L) = 2,340 L ÷ 16 = 146 bags + 5% → ≈ 155 bags (≈ 4.6 MT). Water ≈ 750 L. Yield figures indicative at W/P 0.16 — verify with a trial bag before ordering.

APPLICATION METHOD — STEP BY STEP

Phase 1 — Surface & Reinforcement

1 REMOVE DEFECTIVE CONCRETE

Cut out all loose, delaminated, cracked and carbonated concrete back to sound material with square-cut edges, minimum 10 mm deep — never feather-edge. Sound with a hammer; hollow = remove.

2 EXPOSE & CLEAN THE STEEL

Expose corroded bars all round with a minimum 20 mm clearance behind the bar so the micro concrete can flow past it. Remove rust and scale by wire brush, needle gun or light blasting to bright metal.

3 PROTECT THE STEEL

Apply anti-corrosive zinc-rich primer to cleaned bars and let it dry. If section loss is above 20%, stop — the structural consultant decides on supplementary steel before any concrete goes in.

4 SATURATE & SHUTTER

Wet the substrate to SSD (damp, no free water); on dry or absorbent concrete apply ADT Flex SBR NPU bond slurry and place while tacky. Erect rigid, 100% watertight shuttering with a pouring hopper 150 mm above the top and an air vent at the highest point.

Phase 2 — Mixing, Placing & Curing

5 MIX — WATER FIRST

Use a pan or drum mixer. Put 85–90% of the measured water (4.8–5.4 L per bag) into the mixer, add the powder slowly over 2 minutes, then the balance water, and mix a further 2–3 minutes to a lump-free, free-flowing mix. Never add water later to “loosen” it.

6 POUR FROM ONE SIDE

Pour or pump continuously from one side through the hopper so air escapes through the vent — never from two sides, which traps air in the middle. Place within 20–30 minutes of mixing. Light rodding only; no vibrator.

7 DE-SHUTTER AT 24 H

Strip shuttering after ≈ 24 h at 30°C (longer in cool weather). Inspect immediately; any surface void is made good the same day with ADT Flex SBR NPU polymer mortar.

8 CURE 7 DAYS

Wet-cure with hessian or water spray for 7 days, or apply ADT WBCC curing compound immediately after de-shuttering. Photograph, record bag count and batch numbers — this is the warranty file.

Note: For sections deeper than 100 mm, extend with clean, washed 10 mm aggregate up to 50% of the powder weight (15 kg per bag) — add the aggregate to the mixed micro concrete, never dry with the powder. Above 150 mm or for any load-bearing element, consult the ADT technical team and the structural consultant.

8 SITE MISTAKES THAT WASTE A MICRO CONCRETE

Extra water for “better flow”
Every litre above 5.4 per bag drops strength and causes bleeding and segregation. It flows at 0.16 — if it doesn’t, the mixer or the mixing time is wrong

Pouring against rusty steel
Micro concrete bonds to steel, not to rust. Unprepared bars corrode inside the new jacket and crack it within two monsoons

Less than 20 mm behind the bar
If the material cannot flow past the reinforcement it leaves a void exactly where corrosion starts. Cut deeper, not thinner

Leaking shuttering
Water and fines escape through every gap — honeycombed surface and low strength at the edges. Seal joints; test with water before pouring

Pouring from both sides
Two fronts meet in the middle and trap air. One hopper, one side, one continuous pour, vent at the top

Using a vibrator
A needle vibrator segregates a self-compacting mix — aggregate sinks, laitance rises. Rod lightly if at all

Feather edges
A repair thinning to zero always breaks off at the edge. Square-cut the perimeter to a minimum 10 mm depth

No curing — “ready mix hai”
High early strength is not full strength. Seven days wet cure or WBCC, or the jacket shrinks and cracks

TYPICAL SYSTEM BUILD-UPS

Column Jacketing
Remove cover → clean and prime steel → add ties / dowels per consultant → SSD + Flex SBR NPU bond slurry → shutter → NS Micro 75 mm pour → de-shutter 24 h → WBCC cure

Beam Soffit / Side Repair
Cut back to sound concrete → expose and prime bars → shutter with hopper and vent → NS Micro pour from one end → make good → 7-day cure → plaster or paint

Chajja / Balcony Edge
Break spalled edge square → prime steel, add bars if lost → edge shuttering → NS Micro → cure → Acrylic Coat or Strongflex 2K on top if exposed to rain

Tank Wall / STP Section
Remove damaged section → prime steel → NS Micro pour → cure → Strongflex 2K 3 coats (positive side) → plaster

AREAS OF APPLICATION

Column Jacketing	Beam Repair	Slab Repair	Walls & Parapets
Strengthening of vertical members	Soffits & congested reinforcement	Spalled & delaminated sections	Honeycombed / damaged RCC

Chajjas & Balconies	Tanks & STPs	Marine / Coastal RCC	Infrastructure
Corroded-rebar reinstatement	Wall sections, with waterproofing	Chloride-damaged sections	Piers, culverts, retaining walls

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; edges ≥ 10 mm square; ≥ 20 mm clear behind bars
H2 Steel	Cleaned, primed, section loss assessed	Bright metal, primer dry; consultant sign-off if loss > 20%
H3 Shuttering	Rigid, watertight, hopper and vent	Holds water without leak; hopper 150 mm above top; vent at the highest point
H4 Mix	Water measured, mixer, mixing time	4.8 – 5.4 L per bag; lump-free; used within 20–30 min; cubes cast per 50 bags
H5 Pour	One side, continuous, no vibrator	Material seen emerging at the vent; no interruption; bag count recorded
H6 Cure & inspect	De-shutter, voids, 7-day cure	No voids on stripping; hessian / WBCC applied same day; 7-day cube ≥ 40 N/mm²

SYSTEM PRODUCTS

ADT Flex SBR NPU — bond slurry on absorbent substrates and polymer mortar for making good · **ADT NS Grout** — base plates, bolt pockets and gaps under 50 mm · **ADT WBCC** — curing compound after de-shuttering · **ADT Strongflex 2K** / **ADT Acrylic Coat** — waterproofing over repaired sections exposed to water · **ADT Seal MPU 150** — sealing the repair perimeter joint where movement is expected

FOR CONSULTANTS — READY SPECIFICATION CLAUSE

Copy this clause directly into your BOQ / tender specification:

"Structural repair and jacketing of RCC columns, beams, slabs and walls shall be carried out with ADT NS Micro (formerly ADT Micro Concrete) or approved equivalent — a single-pack, free-flowing, shrinkage-compensated, chloride-free cementitious micro concrete requiring only the addition of clean water at 0.16 – 0.18 by weight, placed by pouring or pumping without vibration in thicknesses of 25 – 100 mm per lift (extended with 10 mm aggregate beyond 100 mm), achieving minimum compressive strength of 15 N/mm² at 1 day, 40 N/mm² at 7 days and 55 N/mm² at 28 days (IS 516 / ASTM C109), flexural strength of 6 N/mm² at 28 days (ASTM C580), and bond to prepared concrete of not less than 1.5 N/mm² (EN 1542), after removal of defective concrete to sound, square-cut edges, cleaning and priming of reinforcement, saturation of the substrate, watertight shuttering with hopper and vent, and 7 days of wet curing or an approved curing compound."

PRECAUTIONS

Strictly follow the specified water : powder ratio — excess water causes segregation, bleeding and strength loss. Do not apply below 10°C or above 40°C. Shuttering must be 100% watertight; loss of mix water through leaks causes honeycombing. Reinforcement must be fully exposed, cleaned and primed before placing — micro concrete placed against corroded steel will fail. Sections deeper than 100 mm require aggregate extension as specified. Replacement or addition of reinforcement is decided by the structural consultant, not the applicator. Non-hazardous when dry; 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.

IMPORTANT NOTICE

This is Draft v0.1 of the data sheet, issued on renaming of ADT Micro Concrete to ADT NS Micro. Values marked (M) are typical values declared by the source manufacturer and will be re-validated through ADT-commissioned NABL testing; values marked TBC are pending. No IS/EN compliance claim, warranty period or coverage guarantee will be printed until supported by test data, 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.

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