PRIME 503
POLYMER MODIFIED PREMIUM TILE ADHESIVE FOR FLOORS & WALLS

ABOUT PRIME 503

PRIME 503 is a high-performance, polymer-modified adhesive specially formulated for fixing ceramic tiles, vitrified tiles, and natural stones. It is suitable for horizontal and vertical applications for interior floors, walls, and external floors, making it ideal for a wide range of residential and commercial installations.

PRIME 503 exceeds the performance standards –

IS 15477:2019 (Type 2T)

EN 12004 / ISO 13007 C2TE

ANSI A118.4ET

With superior bonding strength, **PRIME 503** ensures long-lasting performance, excellent adhesion to various substrates, and enhanced durability. It is an excellent choice for applications like tile-on-tile, bathroom tiling, and external flooring where high strength and flexibility are critical.

SURFACE APPLICATION MATERIALS

- Ceramic tiles & vitrified tiles
- Natural stones (granite, marble, etc.)
- Brick masonry
- Existing ceramic tile & vitrified tile surfaces
- Precast terrazzo & cement terrazzo
- Concrete floors and walls
- Cement plastered surfaces

RECOMMENDED SURFACES / SUBSTRATES

- Concrete masonry blocks
- Cement-based screeds & mortar beds
- Cement-plastered & rendered surfaces
- Concrete surfaces
- Brick masonry
- Existing vitrified, ceramic tiles & natural stone

- Other cement-based substrates
- Cement terrazzo

APPLICATION AREAS

- Interior floors and walls (residential and commercial)
- External shaded floors and podium decks
- Terraces, balconies, and patios
- Tile-on-tile installations
- Wet areas like bathrooms and washrooms
- Renovation and new construction projects

PRODUCT HIGHLIGHTS

- **EASY TO USE** – Single component; simply add water and mix for quick site preparation.
- **POLYMER-MODIFIED** – Enhances adhesion to a wide range of substrates.
- **ECONOMICAL & EFFICIENT** – Cost-effective solution for high-performance tile and stone installation.
- **SAG-RESISTANT** – Suitable for vertical wall applications without slipping.
- **WATER & SHOCK RESISTANT** – Reliable in wet areas and heavy foot traffic zones.
- **EXTENDED OPEN TIME** – Ideal for large format tiles and hot weather conditions.
- **HEAT-RESISTANT** – Suitable for areas exposed to moderate temperature variations.
- **COMPATIBLE WITH LATEX ADMIX** – Can be fortified with HYDAMIX 291 & HYDAMIX 281 (latex admix) for enhanced performance on external wall applications.

TECHNICAL DETAILS

ANSI DATA

PROPERTY	TEST METHOD	REQUIREMENT	PRIME503 VALUES
Open time (30 min at 28°C))	ANSI A118.4 – Cl. 5.3	≥ 75 psi (0.50 MPa)	121–141 psi (0.83–0.97 MPa)
Sag	ANSI A118.4 – Cl. 6.0	≤ 0.02 in (0.50 mm)	0.013–0.017 in (0.33–0.43 mm)
Glazed wall tile shear strength – 7 Days	ANSI A118.4 – Cl. 7.1.2	> 300 psi (2.07 MPa)	326–351 psi (2.25–2.42 MPa)
Glazed wall tile – 7 Days Water Immersion	ANSI A118.4 – Cl. 7.1.3	> 200 psi (1.38 MPa)	226–251 psi (1.56–1.73 MPa)
Porcelain mosaic tile – 1 Day	ANSI A118.4 – Cl. 7.2.2	> 75 psi (0.50 MPa)	126–176 psi (0.87–1.21 MPa)
Porcelain mosaic tile – 7 Days	ANSI A118.4 – Cl. 7.2.3	> 200 psi (1.38 MPa)	251–276 psi (1.73–1.90 MPa)
Porcelain mosaic tile – 7 Days Water Immersion	ANSI A118.4 – Cl. 7.2.4	> 150 psi (1.03 MPa)	201–251 psi (1.38–1.73 MPa)

Porcelain mosaic tile – 28 Days	ANSI A118.4 – Cl. 7.2.5	> 200 psi (1.38 MPa)	251–301 psi (1.73–2.07 MPa)
Porcelain mosaic tile – 28 Days Freeze-Thaw	ANSI A118.4 – Cl. 7.2.5	> 175 psi (1.20 MPa)	226–276 psi (1.56–1.90 MPa)
Porcelain mosaic tile – 12 Weeks	ANSI A118.4 – Cl. 7.2.7	> 200 psi (1.38 MPa)	251–301 psi (1.73–2.07 MPa)
Quarry tile – 28 Days	ANSI A118.4 – Cl. 7.3.2	> 150 psi (1.03 MPa)	201–251 psi (1.38–1.73 MPa)
Quarry tile – 28 Days Freeze-Thaw	ANSI A118.4 – Cl. 7.3.3	> 100 psi (0.69 MPa)	151–201 psi (1.04–1.39 MPa)

EN / ISO DATA

PROPERTY	TEST METHOD	REQUIREMENT	PRIME503 VALUES
Open Time	EN 1346	≥0.50 N/mm²	0.76 – 1.01 N/mm²
Slip Resistance	EN 1308	≤0.50 mm	0.26 – 0.36 mm
Tensile Adhesion Strength (Initial)	EN 1348 – Clause 8.2	≥1.00 N/mm²	1.26 – 1.51 N/mm²
After Water Immersion	EN 1348 – Clause 8.3	≥1.00 N/mm²	1.16 – 1.41 N/mm²
Heat Ageing	EN 1348 – Clause 8.4	≥1.00 N/mm²	1.01 – 1.26 N/mm²
Freeze–Thaw Resistance	EN 1348 – Clause 8.5	≥1.00 N/mm²	1.26 – 1.51 N/mm²

IS DATA

PROPERTY	TEST METHOD	REQUIREMENT	PRIME503 VALUES
Tensile Adhesion Strength (Dry Condition)	Annex A (Clause 5.1)	Minimum 1.00 N/mm²	1.16 – 1.26 N/mm²
Tensile Adhesion Strength (Wet Condition)	Annex A (Clause 5.1)	Minimum 1.00 N/mm²	1.16 – 1.26 N/mm²
Shear Adhesion Strength (Dry Condition)	Annex B (Clause 5.2)	Minimum 1.25 N/mm²	1.36 – 1.46 N/mm²
Heat Ageing Resistance	Annex B (Clause 5.2)	Minimum 1.00 N/mm²	1.06 – 1.16 N/mm²
Shear Adhesion Strength (Wet Condition)	Annex B (Clause 5.2)	Minimum 1.00 N/mm²	1.11 – 1.21 N/mm²
Slip Resistance	Annex E (Clause 5.5)	≤0.50 mm	0.36 – 0.46 mm

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION GUIDELINES

1) **CLEAN & STABLE SURFACE –** Ensure the substrate is level, firm, and free from dust, grease, loose particles, or any contaminants that might hinder bonding.
2) **EVEN & LEVEL BASE –** The surface should be plumb and true within 6 mm over a 3-meter (10 ft) span to achieve uniform tile alignment and avoid uneven tile surfaces.
3) **DRY & MOISTURE-CONTROLLED–** The substrate must be dry, structurally sound, and free from standing water, rising dampness, or excessive moisture that could affect adhesion strength.
4) **PRE-WET IF NECESSARY –** For dry, porous, or highly absorbent substrates, lightly moisten the surface before application. Ensure no standing water remains to maintain optimal adhesive performance.
5) **CURING NEW CONCRETE**– New concrete slabs must be properly cured for at least 28 days to allow sufficient strength development and to minimize shrinkage cracks.
6) **PRESERVE EXPANSION JOINTS** – Respect all existing expansion and movement joints. Do not cover them with adhesive or tiles. Fill them with an appropriate flexible sealant to accommodate structural movements.

HOW TO MIX THE ADHESIVE

1) **MIXING RATIO**– For each 20 kg bag of PRIME 503, add approximately 6 - 8 liters of clean, potable water. Adjust slightly depending on the desired workability.
2) **BLENDING PROCESS –** Pour water into a clean container, then gradually add PRIME 503 powder while continuously mixing with a low-speed mixer (50–100 rpm) until a smooth, homogeneous, and lump-free paste is achieved.
3) **RESTING PERIOD –** Allow the mixed adhesive to stand (slake) for 5 minutes. After resting, stir the mix again without adding additional water to rework the adhesive for use..
4) **APPLICATION CAUTION** – Prepare only the quantity of adhesive that can be used within 3-4 hours (pot life). Avoid adding water once the adhesive has begun to set.

STEP-BY-STEP TILE APPLICATION GUIDE

1. SURFACE PREPARATION

- Apply a thin coat of PRIME 503 adhesive on the substrate using the flat side of a notched trowel.
- Use the notched side to comb additional adhesive and create uniform ridges, ensuring better tile anchorage.

2. TILE PLACEMENT

- Work Quickly: Fix tiles within 20 minutes of adhesive spreading (subject to weather and surface conditions).
- Skin Check: If adhesive skins over, remove and apply fresh adhesive
- Firm Setting: Position tiles by firmly pressing and slightly twisting to ensure good contact.
- Adjust Levels: Use a rubber mallet and beating block to level the tiles properly.

3. ACHIEVING FULL ADHESION

- Back-Buttering (For Large Format Tiles): Apply a thin coat of adhesive on the back of tiles in addition to the substrate to ensure full bedding.
- No Voids: Ensure complete adhesive transfer without voids, especially in areas exposed to water, to prevent tile de-bonding.

4. SPACING & CLEANING

- Tile Spacers: Use spacers to maintain uniform grout joints as specified.
- Clean Excess: Wipe off excess adhesive from tile faces and joints before it hardens to ease grouting and finishing.

5. SPECIAL CONSIDERATIONS

- Wall Installations: Use temporary supports where necessary to prevent tiles from slipping until adhesive sets.
- Highly Absorbent Natural Stones: Pre-treat with an appropriate impregnating sealer to avoid staining due to moisture absorption.
- Consult Experts for Non-Standard Surfaces: For gypsum boards, plywood, or other specialized substrates, seek technical guidance before application.

PRO TIPS & PRECAUTIONS

- ✔ Protect freshly installed tiles from rain, frost, and heavy foot traffic for at least 24 hours
- ✔ Always maintain ambient temperature between 5°C and 35°C during installation.
- ✔ Avoid applying adhesive under direct sunlight or strong winds to prevent premature drying.
- ✔ Do not add extra water or powder to the mixture once it starts setting.
- ✔ Expansion joints must be carried through to the tile surface without fail to prevent cracking or lifting.

PRODUCT SPECIFICATIONS & STORAGE GUIDELINES

AVAILABLE PACKAGING

- Grey: 20 kg
- White: 20 kg
- **SHELF LIFE:** 12 months from the manufacturing date when stored properly.

STORAGE LIFE:

- Keep in original sealed packaging
- Store in a cool, dry place (10–30°C)
- Protect from:
  - Direct sunlight
  - Moisture/humidity
  - Extreme temperatures (<5°C or >35°C)

QUALITY CHECK: Discard if the bag is torn or contents have hardened.

GROUTING INSTRUCTIONS

1. **WAITING TIME**: Begin grouting after a minimum of 24 hours curing time at 70°F (21°C)..
2. **RECOMMENDED PRODUCTS** :

   Use Unsanded Grout mixed with HYDAADMIX 141.

   For maximum stain resistance in internal applications, use HYDAPOXY 001.

   For external floor grouting, use HYDAPOXY UV 10 Grout or Unsanded Grout mixed with HYDAADMIX 141..
3. **APPLICATION TIP**: Maintain uniform joint gaps using spacers before applying grout.

COVERAGE DETAILS

- 20 kg bag:
  - Approx. 5–5.5 m² at 3 mm thickness (using a 6×6 mm notched trowel)
  - Approx. 2.5–3 m² at 6 mm thickness (using a 12×12 mm notched trowel)
- Usage Rate: ~1.2 kg/m² per mm thickness

FACTORS AFFECTING COVERAGE:

- Trowel size & application technique
- Tile size & material
- Surface smoothness & porosity

SAFETY & APPLICATION GUIDELINES FOR PRIME 503

1. **PERSONAL PROTECTION**
   - Wear protective gloves, clothing, and eye/face protection while handling.
   - Keep out of reach of children at all times.

- For professional use only – not for consumer DIY applications.

2. EMERGENCY PROCEDURES

- Skin Contact: Wash immediately with plenty of clean water.
- Eye Contact: Rinse thoroughly with water for 15 minutes and seek medical attention.

3. MIXING INSTRUCTIONS

- Always add powder to clean, potable water — never add water to powder.
- Follow the recommended mixing ratio: 6–8 Ltr water for 20 kg powder
- Do not mix with cement, sand, or other additives.
- Allow adhesive to slake for 5 minutes before remixing and application.

4. SURFACE PREPARATION

- Ensure all substrates are structurally sound, level, dry, and cured (minimum 28 days for concrete).
- Not suitable for fresh screeds or wet concrete.
- Rough or uneven surfaces should be levelled using a screed/plaster material.
- Expansion joints must be honoured through the tile layer.

5. INSTALLATION & PROTECTION

- Protect newly tiled areas from rain, foot traffic, and heavy load impact for at least 24 hours.
- For high-rise applications or heavy cladding:
    - Consult a structural engineer.
    - Use mechanical fastening systems if required.
    - Check substrate load capacity

PERFORMANCE LIMITATIONS

- Not a self-levelling adhesive – use a levelling compound for surfaces with more than 6 mm variation in 10 ft (3 m).
- Curing times may vary based on temperature, humidity, and tile type.
- Not suitable for external wall installations or tiles/stones with mesh backing.
- Always test on a small area if unsure about surface compatibility.

End of TDS