ABOUT HYDAMIX 281

HYDAMIX 281 is a high-performance, polymer-fortified latex admix designed to be used in combination with cement-based filler powders like Crete Filler Powder. It is ideal for creating a flexible, high-strength thin-set adhesive for the installation of large-format tiles and stones across diverse substrates. This product performs exceptionally in both interior and exterior environments, offering excellent bond strength and flexibility.

HYDAMIX 281 exceeds the performance standards-

IS 15477:2019 (Type 3TS1)

EN 12004/ISO 13007 C2E T S1

ANSI A118.4ET

SURFACE APPLICATION MATERIALS

- Large format tiles and slim porcelain tiles
- Ceramic, vitrified, and natural stone tiles
- Vitreous, semi-vitreous, or non-vitreous tiles
- Cement-based precast terrazzo
- Quarry and cement body tiles
- Glass mosaic tiles

RECOMMENDED: SURFACES / SUBSTRATES

- Concrete & concrete masonry
- Cement terrazzo
- MIVON concrete, VDF, precast concrete
- Calcium silicate board

- Cement mortar beds & plaster
- Ceramic, vitrified tile & natural stone
- Cement backer board
- Gypsum wall board
- Brick masonry

APPLICATION AREAS

- Tile-over-tile applications
- Flooring and walls (internal and external)
- Wet areas like pools, water bodies, and spa zones
- Terraces, balconies, and podium decks
- Commercial spaces and public areas
- New construction and renovation projects
- Residential dry and wet areas (washrooms, saunas, spas, fountains, swimming pools)

PRODUCTS HIGHLIGHTS

- **LATEX-BASED FORMULA** – Engineered for high performance when mixed with cement fillers.
- **FLEXIBLE AND HIGH STRENGTH** – Excellent bond strength and flexibility suited for large-format tile installations.
- **WATER & SHOCK RESISTANT** – Ideal for submerged and high-traffic areas.
- **EXTENDED OPEN TIME** – Enables easy adjustments for large and heavy tiles
- **NON-SAG / NON-SLUMP** – Suitable for vertical and horizontal tile applications.
- **EXCEEDS ANSI A118.4ET** – Meets high shear bond strength benchmarks.
- **COMPLIES WITH EN/ISO STANDARDS (C2TES1)** – Ensures reliable, international-grade quality.
- **SURPASSES IS 15477 TYPE 3 / TS1** – Validated for demanding Indian site conditions.

TECHNICAL DETAILS

ANSI DATA

PROPERTY	TEST METHOD	REQUIREMENT	HYDAMIX 281 VALUES
Open Time (30 Minutes at 28°C)	ANSI A118.4 Clause 5.3	≥75 psi (0.50 MPa)	131–151 psi (0.90 – 1.04 MPa)
Sag	ANSI A118.4 Clause 6.0	≤0.02 Inches (0.50 mm)	0.015 – 0.019 Inches (0.38 – 0.48 mm)
Glazed Wall Tile Shear Strength (7 Days)	ANSI A118.4 Clause 7.1.2	>300 psi (2.07 MPa)	426–451 psi (2.94 – 3.11 MPa)
7 Days Water Immersion	ANSI A118.4 Clause 7.1.3	>200 psi (1.38 MPa)	351–401 psi (2.42 – 2.77 MPa)
Porcelain Mosaic Tile Shear Strength (1 Day)	ANSI A118.4 Clause 7.2.2	>75 psi (0.50 MPa)	151–176 psi (1.04 – 1.21 MPa)
Porcelain Mosaic Tile Shear Strength (7 Days)	ANSI A118.4 Clause 7.2.3	>200 psi (1.38 MPa)	351–401 psi (2.42 – 2.77 MPa)
7 Days Water Immersion	ANSI A118.4 Clause 7.2.4	>150 psi (1.03 MPa)	301–326 psi (2.08 – 2.25 MPa)
28 Days	ANSI A118.4 Clause 7.2.5	>200 psi (1.38 MPa)	376–426 psi (2.59 – 2.94 MPa)
28 Days Freeze-Thaw Cycling	ANSI A118.4 Clause 7.2.6	>175 psi (1.20 MPa)	376–426 psi (2.59 – 2.94 MPa)
12 Weeks	ANSI A118.4 Clause 7.2.7	>200 psi (1.38 MPa)	401–451 psi (2.77 – 3.11 MPa)
Quarry Tile Shear Strength (28 Days)	ANSI A118.4 Clause 7.3.2	>150 psi (1.03 MPa)	301–326 psi (2.08 – 2.25 MPa)
28 Days Freeze-Thaw Cycling	ANSI A118.4 Clause 7.3.3	>100 psi (0.69 MPa)	276–301 psi (1.90 – 2.08 MPa)

EN / ISO DATA

PROPERTY	TEST METHOD	REQUIREMENT	HYDAMIX 281 VALUES
Open Time	EN 1346	≥ 0.50 N/mm²	0.86 – 1.01 N/mm²
Slip Resistance	EN 1308	≤ 0.50 mm	0.36 – 0.46 mm
Tensile Adhesion Strength – Initial	EN 1348 – Clause 8.2	≥ 1.00 N/mm²	1.61 – 1.81 N/mm²
Tensile Adhesion Strength – Water Immersion	EN 1348 – Clause 8.3	≥ 1.00 N/mm²	1.21 – 1.31 N/mm²
Tensile Adhesion Strength – Heat Aging	EN 1348 – Clause 8.4	≥ 1.00 N/mm²	1.81 – 2.01 N/mm²
Tensile Adhesion Strength – Freeze-Thaw	EN 1348 – Clause 8.5	≥ 1.00 N/mm²	1.61 – 1.81 N/mm²
Transverse Deformation	EN 12002	≥2.5 mm <5.00 mm	2.9 – 3.3 mm

IS DATA

PROPERTY	TEST METHOD	REQUIREMENT	HYDAMIX 281 VALUES
Tensile Adhesion Strength – Dry Conditions (28 Days)	Annex A (Clause 5.1)	≥ 1.50 N/mm²	1.81 – 1.91 N/mm²
Tensile Adhesion Strength – Wet Conditions (7 Days Std + 21 Days Water)	Annex A (Clause 5.1)	≥ 1.00 N/mm²	1.51 – 1.61 N/mm²
Shear Adhesion Strength – Dry Conditions (28 Days)	Annex B (Clause 5.2)	≥ 1.50 N/mm²	1.91 – 2.01 N/mm²
Shear Adhesion Strength – Heat Ageing (14 Days Std + 14 Days Oven)	Annex B (Clause 5.2)	≥ 1.00 N/mm²	1.31 – 1.41 N/mm²
Shear Adhesion Strength – Wet Conditions (7 Days Std + 21 Days Water)	Annex B (Clause 5.2)	≥ 1.00 N/mm²	1.51 – 1.61 N/mm²
Slip Resistance	Annex E (Clause 5.5)	≤ 0.50 mm	0.31 – 0.41 mm
Transverse Deformation	Annex F (Clause 5.6)	≥ 2.5 mm < 5.0 mm	3.31 – 3.81 mm

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION GUIDELINES

1. **CLEAN & STABLE SURFACE** – Substrates must be structurally sound, clean, and free from dirt, oil, grease, curing compounds, or any loose particles that may hinder adhesion.
2. **EVEN & LEVEL BASE** – Floor substrates should not vary more than ¼" (6 mm) in 10 ft (3 m). Rough or uneven concrete surfaces should be made smooth using suitable screed or plaster materials to ensure a proper finish.
3. **DRY & MOISTURE-CONTROLLED** – Surfaces may be damp but should not have standing water. Damp cure concrete and allow 28 days of curing time unless latex admix is used.
4. **PRE-WET IF NECESSARY** – For dry or dusty surfaces, dampen the substrate without excess water before applying adhesive.
5. **CURE NEW CONCRETE** – Allow freshly poured concrete to cure properly. If using **HYDAMIX 281** with suitable powder, it may be applied on younger slabs per specific system allowances.
6. **RESERVE EXPANSION JOINTS** – Do not bridge movement joints with adhesive. Follow ANSI or TCA recommendations for joint placement and treatment.

HOW TO MIX THE ADHESIVE

1. **MIXING RATIO** – Use approximately 5 - 6 liters of **HYDAMIX 281** for 20 kg of compatible powder like HYDAFIX 271 or equivalent.
2. **BLENDING PROCESS** – Pour **HYDAMIX 281** into a clean container. Slowly add the powder while mixing with a low-speed mechanical mixer to achieve a smooth, workable paste.
3. **RESTING PERIOD** – Allow the mix to stand (slake) for 5–10 minutes. Remix before application without adding additional liquid.
4. **APPLICATION CAUTION** – Use the mixed material within its pot life of 4–6 hours, ensuring fresh batches are mixed as needed.

STEP-BY-STEP TILE APPLICATION GUIDE

1. SURFACE PREPARATION

- Apply a skim coat of **HYDAMIX 281** adhesive (mixed with HYDAPOXY Filler Powder) using the flat side of a notched trowel to ensure full contact with the substrate.
- Comb additional adhesive in one direction using the notched side at a 45° angle**.**
- Recommended Trowel Sizes**:**
    - Small tiles (<30x30 cm): 6 mm

- Medium tiles (30x60 cm): 8–10 mm
- Large tiles (60x60 cm and above): 10–12 mm
- Back-buttering is mandatory for large tiles to ensure full support.

2. TILE PLACEMENT

- Time-Sensitive Application: Install tiles within 10–15 minutes (before adhesive skins over).
- Skin Formation Check: If adhesive is no longer tacky, re-comb or replace with fresh mortar.
- Firm Pressing: Press tiles firmly using a beating block and rubber mallet.
- Use perpendicular motion across ridges to collapse and bond.

3. ACHIEVING FULL ADHESION

- Back**-**Buttering: Always back-butter large or thin tiles**.**
- Avoid Voids: Periodically remove a tile to check for 100% adhesive coverage.
- This ensures hollow-spot prevention and long-term durability, especially for wet areas.

4. SPACING & CLEANING

- Use spacers: To maintain uniform grout joints, use high-quality tile spacers.
- Remove excess adhesive from tile surface before hardening.
- Joint Width should be according to architect/engineer recommendation.

5. SPECIAL CONSIDERATIONS

- Wall Installations: Provide temporary support where needed during setting.
- Back-Mesh Tiles: Remove mesh and lightly grind off epoxy layer before installation.
- Porous or Unusual Surfaces: For substrates like calcium silicate, gypsum, or wood, consult technical support.

PRO TIPS & PRECAUTIONS

✔ No foot traffic for 16–24 hours after tile installation**.**

✔ Do not add cement, sand, or extra water to the mix.

✔ Mix only what can be used within 4–6 hours**.**

✔ **For** external applications**,** use edge-leveling systems to reduce slippage**.**

✔ Beat tiles in properly for full bedding, especially for large tiles.

PRODUCT SPECIFICATIONS & STORAGE GUIDELINES

AVAILABLE PACKAGING

- White liquid: 5 Litre

SHELF LIFE:

- 12 months from manufacturing date if stored properly in sealed packaging.

STORAGE LIFE:

- Store in a dry, cool place (10°C to 30°C).
- Keep away from direct sunlight and high humidity.
- Avoid exposure to temperatures below 5°C or above 35°C.
- Discard if the bag is torn or the contents hardened.

GROUTING INSTRUCTIONS

1. **WAITING TIM**E – Grout after 24–48 hours curing time at 70°F (21°C).
2. **RECOMMENDED GROUTS**
    - Internal joints: Use HYDAPOXY 003 , HYDAPOXY 002 or cement grout with HYDAADMIX 141.
    - External joints: Use HYDAPOXY UV 10 Grout for flexibility and UV resistance.
3. **APPLICATION TIP** – Use appropriate spacers during tile installation to maintain uniform joint gaps.

COVERAGE DETAILS

20 kg Bag Coverage:

- 3 mm thickness: 4–5 m² using a 6×6 mm notched trowel
- 6 mm thickness: 1.5–2.5 m² using a 12×12 mm notched trowel

FACTORS AFFECTING COVERAGE:

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

SAFETY & APPLICATION GUIDELINES FOR HYDAMIX 281

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 liquid admix – never reverse the order.
- Use 5.5 – 6 Liters of **HYDAMIX 281** for every 20 kg of filler powder.
- Mix to a smooth, trowelable consistency and allow the mix to slake for 5–10 minutes.
- Remix before application – do not add more water once mixed.

4. **SURFACE PREPARATION**

- Surfaces must be clean, structurally sound, and free of dust, oil, grease, curing agents, and sealers.
- Fresh concrete should be cured for a minimum of 28 days unless mixed with latex admix.

- Uneven concrete must be leveled using a screed/plaster layer to provide a wood float finish or better.
- Ensure removal of epoxy mesh or demolding wax from stone before installation.

5. **INSTALLATION & PROTECTION**

- Maintain ambient temperature between 40°F–104°F (4°C–40°C) during application.
- Protect installations from rain, traffic, or heavy load for at least 24 hours.
- Back-buttering is mandatory for large-format tiles (>12”x12”).
- Use spacers to maintain uniform grout joints and beat tiles into place with a mallet or beating block.
- Use mechanical tile leveling systems where needed.
- Never use adhesive mortar to level the surface.

PERFORMANCE LIMITATIONS

- **HYDAMIX 281** is not self-leveling – surfaces must be corrected beforehand.
- Cure time may vary based on site temperature, humidity, and substrate conditions.
- Conduct a sample area test for difficult or unknown substrates.
- Do not apply adhesive over expansion joints; always maintain movement joints.

-End of TDS