



HYDA CON
Innovative chemical solutions

Technical Data Sheet

HYDAFIX ST 117

ABOUT HYDAFIX ST 117

HYDAFIX ST 117 is a high-performance, polymer-modified thick bed adhesive designed for fixing small to large format stones on both interior and exterior floors. This single-component adhesive only requires the addition of water, making it extremely easy to use while delivering superior bonding strength and performance.

Suitable for use on a wide range of substrates, **HYDAFIX ST 117** exceeds the performance standards set by **ANSI A118.4** and complies with **EN 12004/C2TE** and **IS 15477:2019** – Type 2 adhesive specifications.

Engineered to support up to 40mm bed thickness, this product is especially suited for heavy-duty flooring applications, including wet areas such as swimming pools, washrooms, and water bodies. Its excellent adhesion, flexibility, and compatibility with stone and tile installations make it ideal for both residential and commercial environments.

SURFACE APPLICATION MATERIALS

- Existing Tile Surfaces
- Precast Concrete Tiles
- Vitrified & Ceramic Tiles
- Cement Terrazzo
- Cement Backer Boards
- Natural Stones

RECOMMENDED SURFACES / SUBSTRATES

- Concrete, Tremix & VDF Concrete
- Gypsum-Based Screeds
- Precast Concrete
- Cement Plaster
- Cement-Based Screeds
- Brick Masonry
- Existing Natural Stone & Tiles
- Calcium Silicate Board

APPLICATION AREAS

- Swimming Pools, Saunas & Water Bodies
- Institutional and Commercial Flooring Areas
- Residential Bathrooms & Washrooms
- Large Format Stone Installations (up to 4 Sft on walls with support)
- Interior & Exterior Floors
- Tile-on-Tile Installations
- Industrial Kitchens and Wash Zones

PRODUCT HIGHLIGHTS

- ❖ **SINGLE COMPONENT, EASY TO MIX** – Just add water; no additives required
- ❖ **POLYMER MODIFIED HIGH STRENGTH** – Provides strong and durable bonding
- ❖ **FLOOR-FOCUSED FORMULATION** – Optimized for large-format stone floor applications
- ❖ **EXCEPTIONAL SUBSTRATE COMPATIBILITY** – Bonds well with concrete, screed, terrazzo, and tile
- ❖ **SUITABLE FOR WET AREAS** – Underwater shear strength for use in swimming pools, washrooms
- ❖ **THICK BED SUPPORT** – Ideal for bed thickness up to 40mm
- ❖ **MEETS GLOBAL STANDARDS** – Exceeds ANSI A118.4; complies with **EN 12004/ C2TE** and **IS 15477 Type 2**

TECHNICAL DETAILS

EN / ISO DATA

PROPERTY	TEST METHOD	REQUIREMENT	HYDAFIX ST 117 VALUES
Tensile Adhesion Strength – Initial	EN 1348 – Clause 8.2	≥ 1.00 N/mm ²	1.52 – 1.62 N/mm ²
Tensile Adhesion Strength – After Water Immersion	EN 1348 – Clause 8.3	≥ 1.00 N/mm ²	1.32– 1.37 N/mm ²
Tensile Adhesion Strength – Heat Ageing	EN 1348 – Clause 8.4	≥ 1.00 N/mm ²	1.32 – 1.42 N/mm ²
Tensile Adhesion Strength – Freeze-Thaw	EN 1348 – Clause 8.5	≥ 1.00 N/mm ²	1.12 – 1.22 N/mm ²

IS DATA

PROPERTY	TEST METHOD	REQUIREMENT	HYDAFIX ST 117 VALUES
Tensile Adhesion (Dry Conditions)	IS 15477:2019 – Annex A (Clause 5.1)	Minimum 1.00 N/mm ²	1.17 – 1.27 N/mm ²
Tensile Adhesion (Wet Conditions)	IS 15477:2019 – Annex A (Clause 5.1)	Minimum 1.00 N/mm ²	1.12 – 1.22 N/mm ²
Shear Adhesion (Dry Conditions)	IS 15477:2019 – Annex B (Clause 5.2)	Minimum 1.25 N/mm ²	1.37 – 1.47 N/mm ²
Shear Adhesion (Heat Ageing)	IS 15477:2019 – Annex B (Clause 5.2)	Minimum 1.00 N/mm ²	1.12 – 1.22 N/mm ²
Shear Adhesion (Wet Conditions)	IS 15477:2019 – Annex B (Clause 5.2)	Minimum 1.00 N/mm ²	1.17 – 1.27 N/mm ²

APPLICATION INSTRUCTIONS

SUBSTRATE PREPARATION GUIDELINES

1. CLEAN & PREPARE SURFACES

Ensure all surfaces are structurally sound, free from dust, dirt, oil, grease, loose paint, laitance, curing compounds, and any other contaminants. For dry, dusty concrete or masonry, lightly dampen the surface but ensure no standing water remains.

Note: Acid cleaners should not be used. If previously applied, rinse thoroughly with clean water before proceeding. Surface should be true to plumb. All concrete slabs must be true to within 6 mm in 3 m. Rough surfaces should be levelled using appropriate plaster or screed materials.

2. INSPECT TILE/STONE SURFACE

Before installation, check the tile or stone for back mesh or epoxy coatings. Remove any mesh backing and lightly grind to remove residual epoxy for better adhesion with **HYDAFIX ST 117**. For highly absorbent stones (like certain natural stones), conduct a patch test or apply an impregnating sealer to avoid visible wet patches.

3. MOVEMENT JOINT PROVISION

Provide movement joints in accordance with ANSI A108.01 – 3.7 or TCNA Detail EJ 171 guidelines. Do not cover movement joints with adhesive or tile. Expansion joints from the substrate must be carried through the tile assembly.

Note: For external stone installations, leave periphery joints unbounded and fill with a flexible cement-based grout mixed with admix for accommodation of surface movement.

4. PROTECT THE WORK AREA

In installations exposed to sun, rain, or water (e.g., swimming pools, saunas), protect the area during and after installation. Shield from direct sunlight and moisture ingress for at least 7 days. Delay filling water bodies until full curing is achieved.

HOW TO MIX HYDAFIX ST 117

- **PRODUCT COMPOSITION** – HYDAFIX ST 117 is a single-component, polymer-modified adhesive supplied in powder form. Available in Grey colour variant.
- **MIXING PROCESS** – Pour clean, potable water into a clean mixing pail. Gradually add HYDAFIX ST 117 powder to the water. Use approximately 5.5 – 7 L of water for a 20 kg bag. Mix using a slow-speed drill mixer or by hand until a smooth, trowelable consistency is achieved. Allow to slake for 5–10 minutes, then remix before use.
- **ADDITIVE OPTION** – For improved bond strength and flexibility, a suitable latex admix can be used partially or entirely in place of water. For guidance on installations involving large format tiles or stones on exterior floors, please consult technical support.
- **READY FOR APPLICATION** – Use a proper-sized notched trowel for application. Apply adhesive to the substrate with the flat side of the trowel, pressing firmly. Then comb with the notched side. For large format stones (>12"x12"), back buttering is recommended. Embed stone with a beating block and rubber mallet for full bedding.

STEP-BY-STEP TILE APPLICATION GUIDE

1. SURFACE PREPARATION

- Ensure all surfaces are structurally sound, level, clean, and free from dust, dirt, oil, grease, paint, or curing compounds.
- Dampen dry and dusty surfaces before application, and sweep off any excess water.
- For new concrete, allow 28 days of curing before application (unless using latex additive).
- Substrate temperature should be between 4°C – 40°C (40°F – 104°F) before beginning installation.
- For uneven or rough concrete, smoothen with appropriate plaster or screed to achieve a wood float finish or better.
- Expansion joints in the substrate must be carried through the tilework. Do not bridge these joints with adhesive.

2. TILE PLACEMENT

- Apply HYDAFIX ST 117 adhesive to the substrate using the flat side of the notched trowel.
- Comb additional adhesive with the notched side to ensure proper coverage.
- Spread only as much adhesive as can be tiled within 10 minutes.
- For large format tiles or stones (>12"x12"), back-butter each piece to ensure full bedding.
- Press tiles firmly into the wet adhesive and tap with a rubber mallet for alignment.

- Use spacers to maintain consistent joint width as per design or specification. Remove spacers after adhesive sets.

3. ACHIEVING FULL ADHESION

- Check coverage periodically by lifting a tile and inspecting the adhesive transfer on the back.
- If adhesive skins over (loses tackiness), remove and apply fresh adhesive before placing tiles.
- For natural stones with mesh backing or epoxy layer, remove both before installation to ensure bond integrity.
- For water-sensitive stones, apply a suitable impregnating sealer on all sides to prevent wet patches.

4. SPACING & CLEANING

- Maintain joint spacing as specified by the project architect or engineer.
- Remove any excess adhesive from tile joints and surface before it hardens.
- Clean tools and equipment with water while adhesive is still wet.
- Grouting can begin after a minimum of 24 hours at 21°C (70°F) once tiles are firmly set.

5. SPECIAL CONSIDERATIONS

- Use a latex admix in place of water to enhance bond strength and flexibility, especially for exterior applications or large format tiles.
- For exterior stone cladding, provide movement joints and fill them with a flexible, UV-resistant grout.
- Do not restrict stone installations at the edges with adjacent plaster or masonry to prevent de-bonding.
- Protect freshly installed tilework from rain, frost, and traffic until fully cured.
- Refer to the manufacturer's technical guidance when tiling in extreme temperatures or special conditions (e.g., swimming pools, saunas).

PRO TIPS & PRECAUTIONS

- ✓ Ensure surfaces are clean, sound, and free of dust, oil, grease, or loose materials before applying HYDAFIX ST 117.
- ✓ Do not apply adhesive over expansion joints. Always provide movement joints in accordance with ANSI A108.01 – 3.7 or TCNA EJ 171 guidelines.
- ✓ For external floors stone installations, always provide spacer joints and fill them with a suitable flexible cement-based grout mixture to prevent de-bonding caused by surface movements.
- ✓ Do not mix HYDAFIX ST 117 with additional cement or sand. Use clean, potable water only, as per recommended mixing ratio (approx. 5.5 – 7 L per 20 kg bag).
- ✓ Mix thoroughly and allow the adhesive to slake for 5–10 minutes before remixing. Do not use adhesive that has begun to harden.
- ✓ Only mix and apply as much adhesive as can be covered with tiles or stones within 10 minutes. Discard adhesive that has skinned over.

- ✓ For large format stones (> 12"x12"), always back-butter before placing to ensure full contact and support.
- ✓ For tile-on-tile installations or when working over plywood or wooden substrates, a specialized high-bond adhesive designed for challenging surfaces should be used to ensure proper adhesion and durability.
- ✓ Do not use HYDAFIX ST 117 to correct substrate irregularities deeper than 40 mm. Level such surfaces with appropriate plaster or screed beforehand.
- ✓ To prevent visible wet patches on highly absorbent stones, apply a compatible impregnating sealer or use a suitable latex-based bonding coat before installation.
- ✓ For installations in submerged or wet areas like pools or saunas, ensure proper curing and use of appropriate waterproofing systems if needed.
- ✓ In hot or cold weather conditions, follow special guidelines for tiling as detailed in the technical documents.
- ✓ Begin grouting only after 24 hours of tile installation. Use stain-resistant grout like HYDAPOXY 711 Grout for optimal performance.
- ✓ For tile-on-tile installations or installations on plywood or wood substrates, use a suitable polymer-based adhesive such as a high-performance acrylic or two-component polyurethane formulation like HYDATHENE PU 2C, as recommended.
- ✓ Always consult substrate board manufacturer's guidelines when installing on boards like Gypsum Wallboard, Cement Backer Board, or Calcium Silicate Board.
- ✓ For installations above 3 meters height, provide mechanical fixing such as clamps or anchors in addition to adhesive bonding.

PRODUCT SPECIFICATIONS & STORAGE GUIDELINES

AVAILABLE PACKAGING

- 20 kg bag

COLOUR OPTIONS

- Grey

SHELF LIFE

12 months from the manufacturing date when stored in original sealed packaging under dry conditions.

STORAGE LIFE

- Store between 10°C and 35°C
- Keep containers tightly sealed when not in use
- Discard product if packaging is damaged or contents have hardened.
- Keep away from:
 1. Direct sunlight
 2. High humidity or moisture
 3. Extreme cold or heat (<5°C or >35°C)

GROUTING INSTRUCTIONS

1. WAITING TIME:

Begin grouting only after a minimum of 24 hours curing time at 21°C (70°F) to ensure tile or stone is properly installed and free from surface contaminants.

2. RECOMMENDED PRODUCTS:

- For maximum stain resistance in internal spacer joint applications, use a premium-grade epoxy grout or a stain-free epoxy-based grout such as HYDAPOXY 001.
- For exterior applications, use HYDAPOXY UV 10 – UV resistant and capable of accommodating surface movements.
- Mix all cement-based grouts with HYDAADMIX 141 for enhanced performance.

3. APPLICATION TIP:

- Always perform a test area before full installation, especially with absorbent natural stones.
- Ensure tiles and stone are clean and dust-free before application.
- For external floors, always provide adequate spacer joints between stones and grout with cement-based grout mixed with HYDAADMIX 141 grout admix plus or equivalent flexible grout.
- Avoid applying grout on surfaces prone to discoloration without testing first.
- Protect freshly applied grout in open or exterior areas from direct sun exposure for 7 days.

COVERAGE DETAILS

- Approx. 22-27 Sft per 20 kg bag with 1/2" x 1/2" (12mm x 12mm) square notched trowel for average bed of 6mm.
- Coverage varies with tile size, joint width, joint depth, and surface texture.

FACTORS AFFECTING COVERAGE:

- Tile size and joint width
- Surface smoothness and porosity
- Grouting method (float or gun)
- Quantity of filler powder used in mix.

SAFETY & APPLICATION GUIDELINES FOR HYDAFIX ST 117

1. PERSONAL PROTECTION

- Wear suitable protective gloves, clothing, and safety goggles during mixing and application.
- Avoid contact with skin and eyes; wash thoroughly after handling.
- Keep out of reach of children.
- For professional use only.

2. EMERGENCY PROCEDURES

- Skin Contact: Wash thoroughly with plenty of clean water and soap.
- Eye Contact: Rinse immediately with clean water for at least 15 minutes and seek medical advice.
- Inhalation/Ingestion: Move to fresh air and seek immediate medical assistance.

3.SURFACE PREPARATION

- Ensure substrate is clean, dry, structurally sound, and free from dust, grease, paint, or curing compounds.
- Dampen dry and porous surfaces slightly; do not leave standing water.
- Substrate temperature should be between 4°C and 40°C (40°F – 104°F).
- Substrate should be plumb and level to within 6 mm in 3 meters (¼" in 10 ft).
- Do not cover expansion joints; follow industry standards such as ANSI A108.01 – 3.7 or TCNA EJ 171 for expansion joints.
- For cement backer boards or gypsum substrates, refer to the respective manufacturer's installation guidelines.

4. INSTALLATION & PROTECTION

- Apply HYDAFIX ST 117 to the floor using the flat side of a notched trowel and press firmly.
- Comb additional adhesive with the notched side ensuring proper coverage.
- Spread only as much adhesive as can be tiled within 10 minutes.
- Back-butter large format stones (larger than 12" x 12") for full bedding.
- Tap stones into place using a rubber mallet and check adhesion by lifting tiles periodically.
- Use spacers to ensure uniform grout joints. Remove spacers after adhesive has set.
- For highly absorbent stones that are prone to staining, use a suitable impregnating sealer or apply a latex admix as a bottom coat.
- Protect external stone installations by maintaining space between periphery masonry and using cement-based grout mixed with latex admix.

5. GROUTING

- Wait at least 24 hours after curing at 21°C (70°F) before grouting to ensure proper tile or stone installation.
- For interior use, apply HYDAPOXY 001 for stain resistance and durability.
- For exteriors, use HYDAPOXY UV 10 for UV resistance and flexibility.
- Mix HYDAADMIX 141 with cement-based grout for improved performance.
- Always test a small area first, especially on absorbent stones, and ensure surfaces are clean before grouting.

MAINTENANCE

- Clean tiled surfaces regularly using neutral pH cleaner and water.
- Avoid acidic or harsh chemical cleaners.
- For long-lasting performance, use HYDACLEAN series cleaners.
- Maintain movement joints to accommodate thermal expansion.

PERFORMANCE LIMITATIONS

- Not suitable for very soft, moisture-sensitive, or polished stone without proper sealing.
- Not a substitute for a waterproofing system—use a compatible membrane in wet areas.
- Protect freshly installed surfaces from extreme temperatures and direct sunlight during curing.
- Ensure movement joints are installed as per recommendations to avoid de-bonding.
- Full performance (including stain resistance) is achieved after 7 days of curing.

End of TDS