



**HYDA CON**  
Innovative chemical solutions

Technical Data Sheet

## AQUA 505

Superior Polymer Modified High Strength Tile Adhesive

### ABOUT AQUA 505

**AQUA 505** is a high-performance, polymer-modified adhesive specially designed for installing all types of natural stones, tiles, and mosaics. It is suitable for both horizontal and vertical applications in dry and wet environments, making it ideal for both indoor and outdoor use. With superior bonding strength, it is perfect for commercial spaces, as it absorbs shocks and withstands heavy traffic, ensuring long-lasting durability.

**AQUA 505** exceeds the performance standards-

**IS 15477:2019 (Type 3TS1)**

**EN 12004/ISO 13007 C2ET**

**ANSI A118.4ET**

### SURFACE APPLICATION MATERIALS

- |  |  |
|--|--|
|  Glass mosaic tiles             |  Marble & natural stones          |
|  Precast terrazzo               |  Large-format tiles               |
|  Vitrified tiles & paver bricks |  Low-thickness slabs & slim tiles |
|  All types of ceramic tiles     |  Brick & terracotta pavers        |
|  Terracotta tiles               |  |

### RECOMMENDED SURFACES / SUBSTRATES

- |   |  |
|---|--|
|  Brickwork & AAC blocks                              |  Cement-based screeds & mortar beds |
|  Cement-plastered & rendered surfaces                |  Other cement-based substrates      |
|  Concrete surfaces                                   |  Existing tiled & stone surfaces    |
|  Drywall panels (cement, bison, gypsum boards, etc.) |  Waterproofing-treated surfaces     |

## APPLICATION AREAS

- |  |   |
|--|---|
|  Flooring & walls (internal & external) |  Dry & wet areas (saunas, spas, fountains, swimming pools, etc.) |
|  Terraces, balconies & podium decks     |  Residential & commercial applications                           |
|  New construction & renovation projects |  External shaded & open areas                                    |

## PRODUCTS HIGHLIGHTS

- ❖ **WATER & SHOCK RESISTANT** – Perfect for wet areas and high-traffic commercial flooring.
- ❖ **EXTENDED OPEN TIME** – Ideal for large-format tiles and external conditions.
- ❖ **HEAT-RESISTANT** – Withstands high-temperature conditions, making it suitable for outdoor spaces, Jacuzzis, and saunas.
- ❖ **HIGHLY POLYMER-MODIFIED** – Ensures superior adhesion on various substrates for different tile and stone types.
- ❖ **SAG-RESISTANT** – Allows effortless application on vertical surfaces.
- ❖ **EASY TO USE** – Simply mix with water for on-site preparation.
- ❖ **LOW VOC** – Contributes to a healthier indoor environment.
- ❖ **FLEXIBLE FORMULATION** – Absorbs minor substrate vibrations, preventing surface cracks.

## TECHNICAL DETAILS

### ANSI DATA

PROPERTY	TEST METHOD	REQUIREMENT	AQUA505 VALUES
Open Time (30 min, 28°C)	ANSI A118.4 Clause 5.3	≥75 psi (0.50 MPa)	123 - 143 psi (0.85 - 0.99 MPa)
Sag Resistance	ANSI A118.4 Clause 6.0	≤0.02 inches (0.50 mm)	0.013 – 0.017 inches (0.30 – 0.40 mm)
Glazed Wall Tile Shear Strength	ANSI A118.4 Clause 7.1.2 (7 Days)	>300 psi (2.07 MPa)	326 - 351 psi (2.25 - 2.42 MPa)
Water Immersion (7 Days)	ANSI A118.4 Clause 7.1.3	>200 psi (1.38 MPa)	226 - 251 psi → (1.56 - 1.73 MPa)
Porcelain Mosaic Tile Shear Strength	ANSI A118.4 Clause 7.2.2 (1 Day)	>75 psi (0.50 MPa)	126 - 176 psi → (0.87 - 1.21 MPa)
Porcelain Tile (7 Days)	ANSI A118.4 Clause 7.2.3	>200 psi (1.38 MPa)	251 - 276 psi → (1.73 - 2.08 MPa)
Water Immersion (7 Days)	ANSI A118.4 Clause 7.2.4	>150 psi (1.03 MPa)	201 - 251 psi (1.39 - 1.73 MPa)
28 Days Strength	ANSI A118.4 Clause 7.2.5	>200 psi (1.38 MPa)	251 - 301 psi (1.72 – 2.06 MPa)
Freeze-Thaw (28 Days)	ANSI A118.4 Clause 7.2.5	>175 psi (1.20 MPa)	226 - 276 psi (1.56 - 1.90 MPa)
Quarry Tile Shear Strength (28 Days)	ANSI A118.4 Clause 7.3.2	>150 psi (1.03 MPa)	201 - 251 psi (1.39 - 1.73 MPa)
Freeze-Thaw Cycling (28 Days)	ANSI A118.4 Clause 7.3.3	>100 psi (0.69 MPa)	151 - 201 psi (1.04 - 1.39 MPa)

**EN / ISO DATA**

PROPERTY	TEST METHOD	REQUIREMENT	AQUA505 VALUES
Open Time	EN 1346	$\geq 0.50 \text{ N/mm}^2$	0.76 – 1.01 N/mm <sup>2</sup>
Slip Resistance	EN 1308	$\leq 0.50 \text{ mm}$	0.26 - 0.36 mm
Tensile Adhesion Strength (Initial)	EN 1348 – Clause 8.2	$\geq 1.00 \text{ N/mm}^2$	1.26 – 1.51 N/mm <sup>2</sup>
After Water Immersion	EN 1348 - Clause 8.3	$\geq 1.00 \text{ N/mm}^2$	1.26 – 1.51 N/mm <sup>2</sup>
Heat Ageing	EN 1348 – Clause 8.4	$\geq 1.00 \text{ N/mm}^2$	1.01 – 1.26 N/mm <sup>2</sup>
Freeze-Thaw Resistance	EN 1348 – Clause 8.5	$\geq 1.00 \text{ N/mm}^2$	1.26 – 1.51 N/mm <sup>2</sup>

**IS DATA**

PROPERTY	TEST METHOD	REQUIREMENT	AQUA505 VALUES
Tensile Adhesion Strength (Dry Condition)	Annex A (Clause 5.1)	Minimum 1.5 N/mm <sup>2</sup>	1.56 – 1.66 N/mm <sup>2</sup>
Tensile Adhesion Strength (Wet Condition)	Annex A (Clause 5.1)	Minimum 1.0 N/mm <sup>2</sup>	1.11 – 1.21 N/mm <sup>2</sup>
Shear Adhesion Strength (Dry Condition)	Annex B (Clause 5.2)	Minimum 1.5 N/mm <sup>2</sup>	1.61 – 1.71 N/mm <sup>2</sup>
Heat Ageing Resistance	Annex B (Clause 5.2)	Minimum 1.0 N/mm <sup>2</sup>	1.11 – 1.21 N/mm <sup>2</sup>
Shear Adhesion Strength (Wet Condition)	Annex B (Clause 5.2)	Minimum 1.0 N/mm <sup>2</sup>	1.16 – 1.26 N/mm <sup>2</sup>
Slip Resistance	Annex E (Clause 5.5)	$\leq 0.50 \text{ mm}$	0.36 - 0.6 mm

## APPLICATION INSTRUCTIONS

### SUBSTRATE PREPARATION GUIDELINES

- 1) **CLEAN & STABLE SURFACE** – Ensure the substrate is firm, dust-free, and free from grease, loose particles, or any material that may reduce adhesion.
- 2) **EVEN & LEVEL BASE** – The surface must be true to within 6 mm over a 3-meter (10 ft) span to prevent irregularities in tile placement.
- 3) **DRY & MOISTURE-CONTROLLED** – The substrate should be dry, structurally sound, and free from rising dampness or excess moisture that could affect adhesion.
- 4) **PRE-WET IF NECESSARY** – If the surface is too dry or absorbent, lightly dampen it before application, ensuring no standing water remains.
- 5) **CURE NEW CONCRETE** – Newly poured concrete must be cured for at least 28 days before tiling to minimize shrinkage and ensure a stable base.
- 6) **PRESERVE EXPANSION JOINTS** – Expansion joints must be maintained and filled with a flexible sealant. Avoid covering them with adhesive or tiles.

### HOW TO MIX THE ADHESIVE

- 1) **MIXING RATIO** – For a 20 kg bag, use 5.5 to 6.5 liters of water, adjusting slightly for the desired consistency.
- 2) **BLENDING PROCESS** – Use a clean container and mix with a mechanical stirrer or a low-speed drill (50-100 rpm) until a smooth, lump-free paste is achieved.
- 3) **RESTING PERIOD** – Let the mixture sit for 5 minutes before use, then stir briefly before application.
- 4) **APPLICATION CAUTION** – Prepare only the required quantity that can be used within the working time. Do not add extra water after mixing.

### STEP-BY-STEP TILE APPLICATION GUIDE

#### 1. SURFACE PREPARATION

- Apply adhesive evenly to the substrate using the flat side of a notched trowel.
- Use the notched side to create uniform ridges, ensuring proper adhesion.
- Trowel Size Recommendations:
  - Small tiles (up to 30x30 cm): 6 mm notches
  - Medium tiles (30x60 cm): 8-10 mm notches
  - Large tiles (60x60 cm and above): 10-12 mm notches

## 2. TILE PLACEMENT

- **Work Efficiently:** Fix tiles within 30 minutes of adhesive application (varies based on porosity and weather conditions).
- **Check for Skin Formation:** If a dry film forms on the adhesive, remove it and apply fresh adhesive.
- **Firm Pressing:** Set tiles by pressing firmly with a slight twisting motion.
- **Level Adjustment:** Use a rubber mallet to tap tiles into position for even placement.

## 3. ACHIEVING FULL ADHESION

- **Back-Buttering (For Large/Uneven Tiles):** Apply adhesive to both the substrate and the tile back to prevent air gaps.
- **Prevent Voids:** Ensure full adhesive contact to eliminate weak spots, especially in wet areas.

## 4. SPACING & CLEANING

- **Use Tile Spacers:** Maintain even spacing as per project specifications.
- **Remove Excess Adhesive:** Clean tile surfaces and joints before the adhesive hardens.

## 5. SPECIAL CONSIDERATIONS

- **Wall Tile Installation:** Use temporary supports along with adhesive for stability.
- **Highly Absorbent Stones:** Pre-treat with an impregnating sealer to prevent moisture stains.
- **Consultation for Special Surfaces:** For drywall, porous, or non-standard surfaces, seek technical advice for best application methods.

## PRO TIPS & PRECAUTIONS

- ✓ Protect freshly installed tiles from rain and foot traffic for at least 24 hours.
- ✓ Maintain the correct mix—do not add sand or cement on-site.
- ✓ Use the recommended water ratio—excess water can weaken the adhesive.
- ✓ For installations above 3m, consider additional mechanical support like steel hooks for enhanced stability.
- ✓ Always add powder to water, not the other way around, for a smooth mix.
- ✓ Avoid excessive surface corrections—do not use adhesive to fix irregularities deeper than 15 mm.
- ✓ Ensure the substrate is fully cured before application—never apply adhesive on wet screed.

## PRODUCT SPECIFICATIONS & STORAGE GUIDELINES

### AVAILABLE PACKAGING:

- Grey: 20 kg bag
- White: 20 kg bag

**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 the contents have hardened.

### GROUTING INSTRUCTIONS

- 1) **WAITING TIME:** Begin grouting after 24 hours of tile installation.
- 2) **RECOMMENDED PRODUCTS:**
  - Use HYDAPOXY grouts (HYDAPOXY 711, HYDAPOXY 712) for best results.
- 3) **APPLICATION TIP:** Maintain uniform joint gaps before applying grout.

### COVERAGE DETAILS

- 20 kg bag:
  - 5-6 m<sup>2</sup> at 3 mm thickness (using a 6×6 mm notched trowel)
  - 2.5-3 m<sup>2</sup> at 6 mm thickness (using a 12×12 mm notched trowel)
- Usage Rate: ~1.2 kg/m<sup>2</sup> per mm thickness

### FACTORS AFFECTING COVERAGE:

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

# SAFETY & APPLICATION GUIDELINES FOR AQUA 505

## 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 water – never reverse the order.
- Follow recommended water ratios – excess water weakens adhesion.
- Do not mix with cement, sand, or other additives.

## 4. SURFACE PREPARATION

- Ensure the substrate is dry, level, and fully cured before application.
- Not suitable for wet screeds or fresh concrete (must be at least 28 days old).
- For uneven surfaces (>15 mm variation), use a leveling compound.

## 5. INSTALLATION & PROTECTION

- Protect newly installed tiles from rain, foot traffic, and heavy loads 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-leveling compound – use appropriate leveling materials if needed.
- Curing time may vary based on environmental conditions.
- Test on a small area if uncertain about substrate suitability.