

PRODUCT SPECIFICATION 1-6A

"ANTI-HYDRO[®]"-R

Set-Retarding, Admixture for Integrally Waterproofing Mortar

Rev. 06/15



ANTI-HYDRO INTERNATIONAL, INC.

Concrete and Masonry Products and Problem Solving Worldwide Since 1904

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DESCRIPTION:

"ANTI-HYDRO[®]"-R is extensively recommended for integrally waterproofing. It has been successfully used since 1904 in all types of brick, stone and tile installations for waterproofing mortar, and to improve its workability, strength, hardness, and durability. It also provides protection against freeze/thaw damage.

"ANTI-HYDRO[®]"-R is a set-retarding, non-corrosive solution of organic and inorganic chemicals that reacts with portland cement to produce more complete hydration. Water requirements, bleed water, capillaries and shrinkage are reduced. The increased hydration provides internal curing and a much denser, harder and tougher cement paste that binds the aggregates together. These combined reactions produce impermeable mortar that is hard, non-dusting and durable. It enhances intensity and durability of color. "ANTI-HYDRO[®]"-R is suitable for use with potable water and is compatible with subsequent finishes.

SPECIFICATIONS:

All mortar for masonry shall be waterproofed with "ANTI-HYDRO[®]"-R, as manufactured by Anti-Hydro International, Inc., in strict accordance with manufacturer's specifications. *Refer to our [Waterproofing Systems Design Considerations](#) <-click me [Tech. Bulletin W-1-1](#) and [Waterproofing & Industrial Floor Details](#).*

MIX DESIGN:

Pre-packaged mortars shall be Type-M and/or Type S only as defined by ASTM C 270 Table 2. Field mixed mortars shall be proportioned as follows:

<u>Type M</u>		
Cement	94 Lb. (1 bag)	= 1 cu. ft.
Lime	10 Lb.	= 0.25 cu. ft.
Sand	240 Lb.	= 3 cu. ft.

<u>Type S</u>		
Cement	94 Lb.	= 1 cu. ft.
Lime	20 Lb.	= 0.5 cu. ft.
Sand	360Lb.	= 4.5 cu. ft.

Field mixed mortars may be made without lime. Portland cement shall be Type-1/Type2 and sand shall conform to ASTM C 144. Gauging liquid shall be a blend of 1 part "ANTI-HYDRO[®]"-R and 15 parts water. All parts measure by volume. Add enough gauging liquid to produce a workable mix

APPLICATION:

All brick or masonry units shall be thoroughly wet before laying (except in freezing weather) and bedded in mortar under the entire surface. Push-lay all brick. The compaction achieved by tooling joints gives greater density and bond.

For solid masonry walls, a complete mortar parget coat shall be applied between back-up masonry and the brick veneer. If header courses are used, pargeting shall be continuous around the headers.

For cavity wall construction, the parget coat shall be applied to the back-up masonry. Provide proper weep holes and flashings in exterior brick work.

PRECAUTIONS

Installation-

For ambient and substrate temperatures below 32°F, use "[ANTI-HYDRO[®]](#)" <-click me [Spec.1-6](#)) in place of "ANTI-HYDRO[®]"-R. Where job specifications require, "[ANTI-HYDRO[®]](#)"-NCR <-click me [Spec.1-6C](#)) or "[ANTI-HYDRO[®]](#)"-NC <-click me [Spec.1-6B](#)) may be substituted for "ANTI-HYDRO[®]"-R.

"ANTI-HYDRO[®]"-R conforms to the requirements of ACI 318-4.4.1 and ACI 318-3.6.3. "ANTI-HYDRO[®]"-R, when tested in accordance with ASTM C 876-91, exhibited no corrosion see our [Technical Bulletin](#) <-click me [W-1-2](#)). However, **DO NOT** use "ANTI-HYDRO[®]"-R in pre-stress or post-tension applications or where chlorides are not acceptable.

Testing for set time is recommended before use as a result of recent globalization of cement sources.

Safety-

Use approved safety glasses, rubber gloves, coveralls and work boots. Protect animals, vegetation and food items. Refer to the Material Safety Data Sheet (MSDS) for details.

Storage-

Store in a dry, cool place. Keep containers tightly closed. KEEP AWAY FROM CHILDREN. Refer to the MSDS for details.

TYPICAL PROPERTIES/PERFORMANCE DATA:

Concrete/mortar specimens with "ANTI-HYDRO[®]"-R exhibited similar performance as "ANTI-HYDRO[®]" tested by various independent laboratories as follows:

- **Impermeability/Waterproofing-** Impermeable¹ at 20 psi (46' head of water).²
- **Vapor Transmission/Damp proofing-** Produced 85% reduction in transmission of vapor.⁹
- **ACI 318/Non-Corrosive-** Greatly exceed the requirements (non-corrosive).^{1,12} No sign of steel corrosion in concrete with "ANTI-HYDRO[®]".¹
- **Durability-** Highest durability (over a 15 year, freeze/thaw, durability test) of any material tested.³
- **Integral Curing-** Concrete cured internally, survived durability tests of 719 freezing-thawing cycles without any damage.¹⁴

- **High Strength/Compressive Strength-** Concrete showed

compressive strength significantly higher at all ages.^{4,6}
 Concrete exhibited 27% increase in 3 days and 23% in 7 days.⁵
 Mortar exhibited 14% increase in 1 day, 11% in 3 days and 12% in 7 days.⁷

- **Bonding Shear Strength-** Poured topping with “ANTI-HYDRO®” bonded as an integral part of the old floor slab and the bond found to be stronger than the original concrete.⁶ Doubled the bond strength.^{1,8}
- **Tensile Shear Strength-** Bonded to old concrete, in all cases, the failure occurred in the old concrete, and no failure occurred in the bond.¹¹
- **Abrasion Resistance-** Produced 85% increase in abrasion resistance.¹⁰
- **Shrinkage Reduction-** 20-25% reduction in shrinkage.⁶
- **Plasticity-** Produced a 29% increase in plasticity.⁶
- **ASTM Specification-** Meets ASTM C-494, Types A, C & E

*The above laboratory results may vary dependent on real or field conditions

Test References:

1. Bulletin of the Board of Standards and Appeals, City of New York, Vol. XXVIII, No. 21.
2. US Department of Commerce, Bureau of Standards Tests of Integral and Surface Waterproofings for Concrete, Research Paper No. 394 (20 psi – 46’ Head of Water).
3. US Army Corps of Engineers, Report No. 5, Technical Memorandum No. 6-226 - 15 Year Freeze/Thaw Test.
4. W. R. MacIntosh, C. E., University of Louisville Louisville, KY.
5. Shimel and Sor Testing Laboratories, Inc. Report No. 90-6515.
6. War Department, United States Engineer Office.
7. Fairway Testing Co., Sports Complex Building, West Point, NY.
8. Raymond G. Osborne, Bureau of Tests & Inspection Los Angeles.
9. Shimel and Sor Testing Laboratories, Inc. Report No. 88-2114.
10. Pittsburgh Testing Laboratory - 7512545A/3Y-3160-S.
11. Smith-Emery Company - P-28318, Los Angeles.
12. Shimel and Sor Testing Laboratories, Inc. Report No. 84-273 R
13. Herman G. Protze, Materials Technologist, Highlands, MA
14. War Department, Corps of Engineers, Mississippi River Commission Technical Memorandum No. 6-226

MAINTENANCE:

All due diligence must be exercised to provide a regular and frequent maintenance plan to clean and protect the finished surface from severe or prolonged assault from chemical attack, abrasive attack or similar abuse.

PACKAGING:

1-gallon, 5-gallon, 55-gallon or 220-gallon containers.

SERVICES:

Our technical staff is available to review product selection and detailing during the design stage, provide proper field guidance during the installation stage, evaluate concrete construction problems on-site and make recommendations.

ESTIMATOR’S DATA GUIDE:

1 quart of “ANTI-HYDRO®”-R per a bag (94 lb.) of Type-1/Type-2 portland cement.

Gauging Liquid- 1 part of “ANTI-HYDRO®”-R to 15 parts of water Parts are measured by volume.

5-5½ quarts of **Gauging Liquid** per 80 Lb. of Type M and/or Type S mortar only (pre-packaged).

WARRANTY: Anti-Hydro International, Inc. (Anti-Hydro) warrants its products to be free of manufacturing defects at the time of delivery to its customer and will, at its option, replace or refund the invoiced price of any materials proven to be defective. This limited warranty is in lieu of any other warranty or guarantee, expressed or implied, including warranties of merchantability and fitness for a particular purpose. Anti-Hydro disclaims liability for any incidental, consequential, or other damages, including but not limited to, loss of profits or damages to a structure or its contents, arising under any theory of law whatsoever beyond the invoiced price of the material to its customer.

To the best of our knowledge, the information contained herein is accurate. However Anti-Hydro International, Inc. does not assume liability whatsoever for the accuracy or completeness of information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present known or unknown hazards, please refer to the Material Safety Data Sheet (MSDS) for this product. This notification may not be detached from the specification. Any copying and redistribution of the specification shall also include copying and redistribution of this notice. Our sales persons or representatives, distributors and their personnel have no authority to change the recommendations contained herein.

