

A-H[®] HYDRO-SET 32

For Economically Placing Concrete & Masonry in Cold Weather

Rev. 06/15



ANTI-HYDRO INTERNATIONAL, INC.

Concrete and Masonry Products and Problem Solving Worldwide Since 1904

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DESCRIPTION:

A-H[®] HYDRO-SET 32 is an economical, set accelerating, non-chloride admixture that has been extensively used over a century in cold weather conditions, generally in temperatures below 40°F, as a set-time accelerator for concrete and masonry placing and protection. It is frequently used in concrete and, masonry mortars, stuccos and plasters for cold weather protection and strength improvement. A-H[®] HYDRO-SET 32 generates heat due to cement hydration, often eliminating needs for externally applied heating.

A-H[®] HYDRO-SET 32 is a set accelerating, water reducing, non-chloride liquid admixture generally used in cold weather conditions. It reduces finishing time and increases early strengths allowing for early removal of forms. It also improves workability and finishing properties. A-H[®] HYDRO-SET 32 reduces water requirements, bleed water and segregation, thus producing a much denser cement paste. It is suitable for potable water and subsequent finishing applications.

SPECIFICATIONS:

In cold weather conditions, all concrete and masonry, as indicated on plans and specifications, shall be placed and protected by using A-H[®] HYDRO-SET 32 admixture, as manufactured by Anti-Hydro International, Inc., in strict accordance with manufacturer's specifications. [Refer to our Waterproofing & Industrial Floor Details.](#) <- (click me)

RECOMMENDATIONS FOR GOOD COLD WEATHER CONCRETING:

1. Concrete may be safely constructed in cold weather if necessary precautions are taken. Early development of approximately 500 psi in the mortar will prevent damage due to early freezing.
2. Concrete mixes should be designed without the use of retarders. The hydration of portland cement produces heat. The higher the cement content, the greater the heat produced. This is helpful for cold weather protection.
3. Heated water and aggregates should be used. Maximum temperatures are as follows: mixing water 150°F.; aggregates 200°F.; concrete 80°F. The recommended temperature of concrete being placed should be 55°F, in accordance with ACI-306.
4. Concrete floors should never be placed on frozen sub-soil. Forms should be entirely free of ice or any other frozen material. The thawing out effect may cause subsequent movement and failure.
5. Protect concrete, during early curing stages, against change in temperature. Thermal shock may cause cracking of concrete members. Do not place concrete toppings on base slabs where there is more than 30°F temperature differential between the topping mix and existing base. The subsequent thermal movement may cause failure to the bond between base and topping.

6. Do not allow gases from heating devices to be directed on fresh concrete. Carbonation results in soft, weak surfaces.
7. On windy days, erect wind barriers to prevent rapid water loss from freshly placed floors. Leave wall forms on longer. Insulation value of the forms is helpful in retaining the heat of hydration to speed strength gain. Protect exposed concrete from elements.
8. When structural members are involved and strength gain before removal of forms is important, we recommend that concrete test specimens be made and stored under job conditions in accordance with 5.5 and 5.6 of ACI Cold Weather Concreting (306-88). The indicated strength from the test specimens would give adequate evidence that the necessary strengths of the members have been achieved before stripping. The stripping strength criteria will be far above the strengths necessary to protect the concrete against damage from frost

Concrete Batching-

A-H[®] HYDRO-SET 32 shall be added with mixing water or to the concrete while partially mixed and mixed for a minimum 1 minute per cubic yard. Addition of A-H[®] HYDRO-SET 32 shall be at the jobsite. Do not add A-H[®] HYDRO-SET 32 to dry portland cement or concrete mix. All other admixtures shall be added separately, one at a time.

Concrete dosage rates in ESTIMATOR'S DATA GUIDE are based on the lowest temperature in the 24 hours period following installation, including wind chill factor. ACI 306 "Recommended Practice for Cold Weather Concreting" shall be followed when air temperatures are below 50°F. Control joint spacing should be as recommended in ACI Standard 302-3.2.5, Concrete Floor and Slab Construction. [Refer to our Waterproofing & Industrial Floor Details.](#) <-(click me)

RECOMMENDATIONS FOR GOOD COLD WEATHER MORTAR PRODUCING:

1. Masonry may be safely constructed in cold weather if necessary precautions are taken. Early development of approximately 500 psi in the mortar will prevent damage due to early freezing.
2. The warmer the aggregates, water and masonry units, the more rapid will be the development of strength and the greater cold weather protection. Do not use frozen sand. The maximum temperatures of the mixing water should be 150°F.
3. A lower amount of water used in a given mix will increase the rate of hydration and provide better cold weather protection.
4. Higher ambient temperatures require less protection. The more efficient the wind barriers, the lower the heat losses.
5. On windy days, erect wind barriers to prevent rapid heat losses. Cover all masonry at the end of the work day to prevent water saturation from rain.
6. Prevent gases from heating devices from impinging on fresh mortar. Carbonation results in soft, weak mortars.

greater amount of heat produced. The more heat produced, the greater cold weather protection.

Masonry Mortars, Stucco and Plaster-

Mortars shall conform to the requirements of Type "M" or Type "S" (ASTM C-270). Use Type 1 or Type 2 portland cement with no more than 25% lime (1 part portland cement plus ¼ part lime to 3 part clean, sharp sand conforming ASTM C-144). ACI 306

Addition of A-H[®] HYDRO-SET 32 to the mixing water shall be done as shown in ESTIMATOR'S DATA GUIDE, based on the lowest temperature in the 24 hours period following installation, including wind chill factor. All parts are measured by volume. Increase dosage of A-H[®] HYDRO-SET 32 if quicker set is desired.

Mortar dosage rates in ESTIMATOR'S DATA GUIDE are based on the lowest temperature in the 24 hours period following installation, including wind chill factor. ACI 306 "Recommended Practice for Cold Weather Concreting" shall be followed when air temperatures are below 50°F. Control joint spacing should be as recommended in ACI Standard 302-3.2.5, Concrete Floor and Slab Construction. Refer to our [Waterproofing & Industrial Floor Details](#). <-(click me)

PRECAUTIONS:

Installation-

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

DO NOT use A-H[®] HYDRO-SET 32 in pre-stressed or post-tensioned applications.

For ambient and substrate temperatures below 40°F, use A-H[®] HYDRO-SET 32. Where job specifications require, "[ANTI-HYDRO[®]](#)" <-(click me Spec.8-5), a non-chloride admixture, may be substituted for A-H[®] HYDRO-SET 32.

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 PERFORMANCE DATA:

A-H[®] HYDRO-SET 32 meets the requirements of ASTM C-494, Type C

A-H[®] HYDRO-SET 32 conforms to the requirements of ACI 318-4.4.1 and ACI 318-3.6.3.

PACKAGING:

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

Shelf life is approximately one year in original, unopened containers when stored in a dry, cool area.

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:

Concrete-

Temperatures must include wind chill conditions

<u>Temperature Range</u>	<u>A-H[®] HYDRO-SET 32 Required</u>
From 40°F to 32°F:	1 gallon per cubic yard.
From 31°F to 23°F:	1½ gallons per cubic yard.
From 22°F to 20°F:	2 gallons per cubic yard.
From 19°F to 15°F:	3 gallons per cubic yard.

Masonry Mortars, Stucco and Plaster-

Protect cement mortars against freezing, for anticipated outside air temperatures, and wind chill conditions.

<u>Temperature Range</u>	<u>Required A-H[®] HYDRO-SET 32 and water mix</u>
From 32° to 25°F:	1 part A-H [®] HYDRO-SET 32 with 12 parts water.
From 24° to 15°F:	1 part A-H [®] HYDRO-SET 32 with 10 parts water.
14°F or Less:	Mechanical heating is necessary.

To protect masonry cement or lime mortars at temperatures as low as 25°F, use 1 part A-H[®] HYDRO-SET 32 with 10 parts water.

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.