

HEY'DI POWDER X SYSTEM

Waterproofing System for Active Leaks

CEMENTITIOUS AND REACTIVE WATERPROOFING
THERMAL AND MOISTURE PROTECTION

TAMMS INDUSTRIES
MARCH 2002 (Replaces 1/01)

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CEMENTITIOUS AND REACTIVE WATERPROOFING
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- DESCRIPTION:** The HEY'DI POWDER X SYSTEM is a combination of cementitious and silicate based materials used on negative side surfaces to seal and stop leakage caused by hydrostatic pressure. HEY'DI POWDER X SYSTEM is a 3 coat, two component system consisting of one powder and a liquid. HEY'DI POWDER X is a dry powder that hardens in seconds when exposed to water. HEY'DI SEALING LIQUID penetrates through HEY'DI POWDER X into the capillaries of the substrate. There, it reacts with moisture and the constituents of the substrate to form crystals. While moisture is present, the crystallization process will continue for approximately six months. HEY'DI POWDER X SYSTEM is a dark cement gray color, and is not intended as a decorative finish.
- USES:** HEY'DI POWDER X SYSTEM waterproofs leaking and weeping concrete or masonry from the negative side to protect against hydrostatic water pressure. It is applied to interior or exterior walls below grade, slabs on grade, foundations, basements, reservoirs, tunnels, dry docks, and other areas where leakage is encountered. Properly applied, HEY'DI POWDER X SYSTEM becomes an integral part of the structure and will not debond from the surface by water pressure. HEY'DI POWDER X SYSTEM is not designed to be used as a wearing surface. Horizontal surfaces subject to vehicle or heavy foot traffic must be covered with a protective topping. For further information, contact TAMMS Technical Service Centers.
- COMPOSITION AND MATERIAL:** HEY'DI POWDER X is a proprietary formulation of hydraulic cements and chemical additives used to stop running water leaks. HEY'DI SEALING LIQUID is a proprietary solution of liquid silicate chemicals which initiates the crystallization process within the capillaries of the coating and the wall. HEY'DI POWDER X SYSTEM components contain no added chloride compounds, are inorganic, nontoxic, and resist chemical attack similar to that of portland cements.

Material Properties		
Test Method	Criterion	Results
ASTM E149		
Adhesion, PSI, 3 Day Cure	Open Structure Concrete	84.6
	Closed Structure Concrete	42.2
	Steel Formed Concrete	61.4
ASTM C190		
Tensile Strength, PSI	100% RH	380
	50% RH	325
CRD-48-55		
Permeability	Water Head @ 4.3 Ft.	7.6×10^{-11}
	Water Head @ 144 Ft.	8.1×10^{-10}
Values are typical and not necessarily referenced to create specifications.		

- GENERAL SURFACE PREPARATION:** New concrete and masonry surfaces should be cured a minimum of 7 days. Surface must be structurally sound, clean, and free of contaminants including curing compounds, form release agents, dust, dirt, oil, efflorescence, old coatings, and paint. Substrates must be roughened and absorptive. Smooth precast or formed concrete must be opened to an exposed aggregate surface. The

surface must have an open capillary system for adhesion and optimum crystalline growth. Remove form marks and other protrusions. Concrete honeycomb, cavities, joints, cracks, voids, tie holes, and other defects must be opened and routed to sound material. Rout broken or uneven brick or block to sound material. Follow special methods for repairing defects per section 6.

- APPLICATION TECHNIQUES:** For actively leaking surfaces.

STEP 1- Put on rubber gloves and immediately rub Powder X well into the wet surface until the surface is dry. This application should not be more than 1/32" in thickness.



STEP 2 - As soon as the Powder X has been applied, brush the area with Hey'di sealing liquid using a clean brush.



STEP 3 - As soon as the Sealing Liquid of Step 2 is applied, rub another batch of Powder X into the wet surface.



STEP 4 - The entire procedure may be repeated for difficult to control leaks.

Upon completion of the three steps, protect the surface from rain, hot sun, or wind, and freezing or frost for 24 hours while monitoring the area to ensure leaks have been stopped and have not been re-directed to new locations. To produce an uninterrupted waterproof membrane, apply two coats of HEY'DI K-11 over the entire surface, including the repaired surface and the surrounding wall area. Apply HEY'DI K-11 as described in the HEY'DI K-11 Technical Data Sheet.

6. **SPECIAL APPLICATION PREPARATION:** Clean and prepare the surface as described above.

6.1 Patching Methods for Active Leaks under pressure: Rubber gloves must be worn to apply HEY'DI POWDER X.

Hey'Di Powder X has the power to stop and seal water leaks, even under pressure, in a matter of seconds.

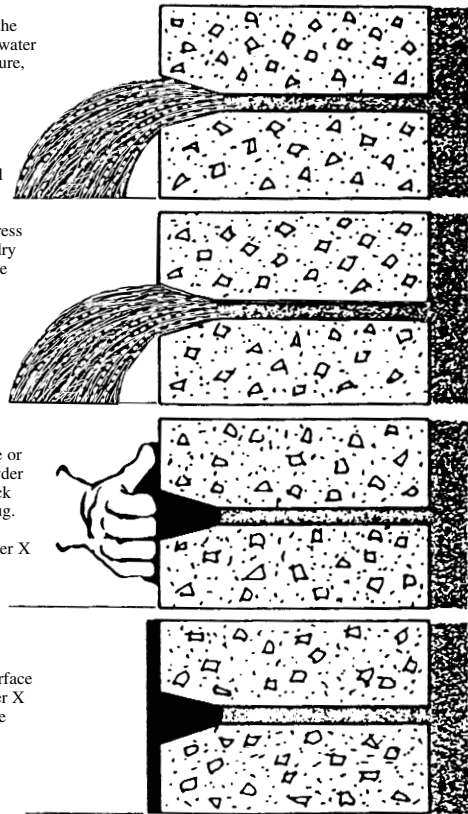
PROCEDURE:

Water leaking under pressure can be stopped by:

Using rubber gloves, press a generous handful of dry Hey'Di Powder X in the hole. Maintain pressure until leak has stopped.



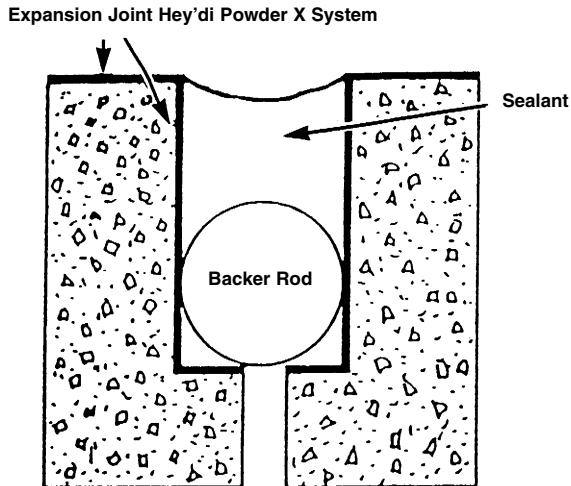
In case of high pressure or great flow, premix Powder X with water into a thick paste and use it as a plug. Then seal off the flow completely using Powder X in powder form.



Then treat the entire surface with the Hey'Di Powder X System, followed by the Hey'Di K-11 System.

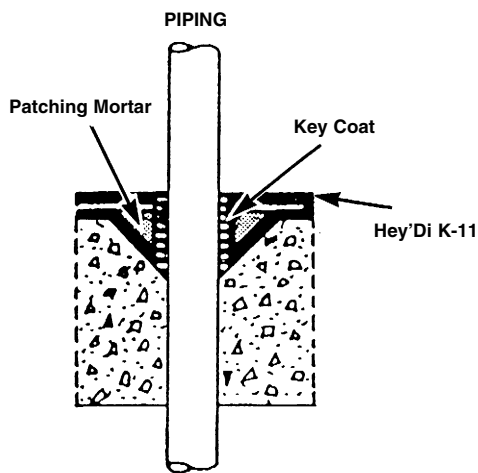
- A. Moderate leakage or small holes - Press a generous handful of dry HEY'DI POWDER X into the hole and maintain constant pressure until leakage stops.
- B. High pressure leakage or heavy flow - Premix HEY'DI POWDER X with potable water into a thick putty and use it as a plug. Finish sealing off the remaining flow using dry HEY'DI POWDER X as directed above.

6.2 Dynamic and static cracks:



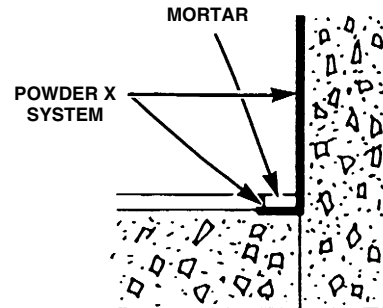
- Cut out the crack 3 inches (7.62 cm) wide at surface and 2 to 3 inches deep (5.08 - 7.62 cm).
- Use HEY'DI POWDER X SYSTEM to stop active leaking.
- Dampen area, and apply HEY'DI K-11 to the sides and bottom of the cut and overlap onto the sides and bottom of the cut and overlap onto the adjacent surfaces.
- Following cure of the HEY'DI K-11, apply a bond breaker tape in the bottom of the cut and install a waterproof flexible joint sealant. Maintain top surface of sealant 1-½ inches (3.81 cm) below the top of the substrate.
- Following cure of sealant, install a bond breaker tape to only the cured surface of the sealant.
- Fill the remaining cut with TAMMSPATCH to the level of the substrate.
- To create a joint for movement control, cut into the center of the fill mortar 2 mm wide and a minimum one half of the depth of the fill mortar.

6.3 Through Wall Penetrations - Including piping, electrical conduit, and other embedded materials:



- Cut around pipes a minimum 1 inch deep and 1 inch wide (2.54 x 2.54 cm) at the surface, and clean pipe thoroughly.
- Mix HEY'DI SB BONDING AGENT with potable water in a 1:1 ratio. Dry blend cement and sand in a 1:1 ratio, mix with the liquid, and apply this "key coat" to only the pipe. Cure for 24 hours.
- Dampen area, and apply HEY'DI K-11 to the pipe and substrate.
- Fill the remaining cavity with TAMMSPATCH and cure 24 hours. Apply HEY'DI K-11 waterproofing.

6.4 Floor/Wall Joint Leakage -



- Cut an area approximately 1/2 inch (1.27 cm) deep a minimum 3 to 4 inches up the wall, and 3 to 4 (7.62 - 10.16 cm) inches onto the floor.
- Use HEY'DI POWDER X SYSTEM to stop active leaking.
- Dampen area, and apply HEY'DI K-11 to the sides and bottom of the area and overlap the adjacent surfaces.
- Following cure, use TAMMSPATCH to level the area with the floor surface.

- APPROXIMATE COVERAGE:** HEY'DI POWDER X, applied dry at 0.28 lbs per sq.ft. (1.16 kg/sq. m.) and depends on the extent of the active leaking areas. HEY'DI SEALING LIQUID, used as received, at 60 sq. ft. per gallon (1.47 sq. m/l).

- CLEAN-UP INSTRUCTIONS:** Clean all mixing and application equipment with water immediately after use. Clean all splatter or spills with water before material sets. HEY'DI SPECIAL SYSTEM is a cementitious product and if allowed to dry on the surface, removal becomes very difficult.

- CAUTIONS:** Do not apply to frozen or frost filled surfaces or when temperature is below 40°F (4.5°C), or expected to fall below 40°F (4.5°C) in 48 hours. Do not apply in temperatures above 90°F (32.2°C). Protect with a topping when used as a traffic wearing surface. Do not fill open cisterns, tanks, etc. with water for at least 7 days. Ensure that adequate ventilation is available during the application and the full curing period when using HEY'DI POWDER X SYSTEM in enclosed tanks or reservoirs. Allow minimum 7 days drying time before back-filling. Allow 7 days cure before covering or before the application of a waterbased decorative coating. Do not apply lime based products over HEY'DI POWDER X SYSTEM. Do not substitute HEY'DI SB. When the special system is used in areas exposed to chemicals or high sulfate containing soils, consult technical service for recommendations. Apply a test patch to evaluate performance and appearance on concrete or block substrates which have been subjected to contamination, efflorescence or chemical attack.

10. ENVIRONMENTAL AND SAFETY PRECAUTIONS:

Industrial Use Only. Contains portland cement which is alkaline on contact with water. Do not breathe dust. May cause delayed lung injury (Silicosis). IARC reports Crystalline silica may cause cancer in humans. Irritating to eyes and skin. Avoid splashing into eyes or contact with skin. In case of eye contact, flood eyes repeatedly with potable water and call a physician. **DO NOT RUB EYES.** Wash skin thoroughly after handling and before smoking or eating. Use adequate ventilation. **KEEP AWAY FROM CHILDREN AND ANIMALS.** Sealing liquids contains silicates which are **CORROSIVE.** In case of eye contact, wash immediately with copious amounts of water. See physician. In case of skin contact, wash with soap and water. Use gloves and eye protection.

11. PACKAGING:

HEY'DI POWDER X - 30 lb. plastic pails.
HEY'DI SEALING LIQUID - 1 gallon, 5 gallon (37.85 l)
plastic pails
Storage: Keep dry and protected from moisture. Store at 40 - 90°F (4.5 - 32.2°C)
Protect Liquid From Freezing.
Shelf Life : One year in protected storage.
Freight Class: Class 55.

12. TECHNICAL SERVICE: For application procedures or surface conditions not specified above, please contact:

TAMMS INDUSTRIES
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800-862-2667 FAX: 815-522-2323
www.tamms.com

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