

### **“HYDRAKRETE-61™” Pipe Lining Material – Technical Data Sheet**

“HydraKrete-61™” Cement Lining was developed by the “Hydrastone Industrial Coatings Inc.” Company in 2010 specifically designed for potable, steel & concrete water-mains. With developmental research assistance from “Quikrete Canada”, Hydrastone has produced a potable lining material that offers both; long-term protection for steel surfaces against corrosion and a material suitable for machine-lining or hand application. End result was a high performance lining that could bond to steel or concrete surfaces at the necessary thickness offering corrosion protection and prevention of premature lining failure.

HydraKrete-61™ has been certified to CSA, NSF/ANSI 61 specifications for potable water use. The CSA group originated in 1919 and has since become one of the worlds most trusted agencies for certifications and standards. To support North Americas growing appetite for certification services, CSA’s water products testing laboratory in Toronto, Canada, tests to key water quality standards. HydraKrete-61™ also meets all requirement set by the ANSI/AWWA standards.

### **HYDRAKRETE-61™ Lining Material Guidelines**

The following information points out various installation procedures but cannot cover all variations in field conditions. This information should be used as a guide only. The installation of this material should only be completed by an experienced HydraKrete-61™ applicator. Their knowledge and experience will ensure the most favorable results.

Install a corrosion resistant HydraKrete-61™ lining in accordance with the following specifications. All work is to be inspected at each stage by the party responsible for quality control and be completed within confined space regulations.

#### **Basic Tools Required**

Mortar mixer / Wheelbarrow, Lining Machinery, Mason Hoe, Masonry Brush - 1-1/2" / 38mm thick, Pointed Trowel, Pool Trowel - 4" x 10" / 102mm x 254mm.

#### **Surface Preparation**

Plug all connections with sponges, plastic caps or other types of plugs, to prevent Hydraskrete-61™ from entering openings.

The steel surface shall be cleaned to remove oil, dirt, grease and contaminates or other coatings. Cleaning can be accomplished by:

- High-pressure water blaster is acceptable if it can clean the steel so it will exhibit a tight cohesive surface suitable for bonding of HydraKrete-61™ lining.

- Rust bloom is perfectly acceptable and will aid in mechanical bond.

On mature steel, the substrate must be free of any holes and should be inspected and repaired as necessary (if pressure vessel... proper procedures must be followed for repair) prior to installing the lining.

Installation is to be accomplished when the surface temperature is between 40°F/4.5°C and 105°F/40.6°C. Fluctuations in temperature are permitted for short periods of time. If temperatures will be below or above this range for a majority of the time, the area should be heated or cooled to insure a sound lining application.

### **Metal Reinforcement**

The use of expanded metal or wire mesh is recommended for pipes that are 72"/1800mm or greater. Smaller diameters may be recommended if the pipe is to be transported after lining is completed. Expanded metal or wire mesh should be tacked on metal anchors or secured directly against the surface of the tank.

### **Mixing**

HydraKrete-61™ is mixed at the rate of approximately 1 imp. Gallon / 5.5 liters of water per 30kg / 66lb bag. The amount of water required is dependent on the level of humidity. Mix the HydraKrete-61™ to a mortar-like consistency, not too dry or too wet.

Water for mixing the HydraKrete-61™ lining shall be clean, cool, potable water, free from objectionable quantities of silt, organic matter, alkali, salts and other impurities

### **Application**

Hand Application: Apply first coat as evenly as possible at an approximate thickness of 1/4" - 3/8" / 6mm – 10mm. Do not line the floor of the pipe during the first coat and clean any excess amounts of HydraKrete-61™ from that area. Leave the lining to set before applying the second and final coat. The set up time depends a great deal on ambient conditions. Warm dry conditions will allow shorter set times than damp, cooler conditions. Generally, allow 20 minutes to 1 hour for AlKrete to set. In some cases, the second coat can begin directly after the first coat is applied if the starting point has set. The first coat should be sticky to the touch when applying the finish coat. Do not allow the first coat to set up too hard since this will result in a delaminated lining.

The finish coat is almost a repetition of the first. The final coat should be trowelled smooth to a final combined thickness of 5/8" - 3/4" / 16mm – 19mm. Use a wet masonry brush on entire final coat to remove any imperfections in the lining.

When the entire lining has been brushed, sweep out the excess HydraKrete-61™ from the bottom of the pipe. Apply the finish coat to the floor in one thick application.

### **Moisture Cure**

HydraKrete-61™ linings should be moisture cured by securely covering pipe openings with plastic and tape directly after the lining is installed. It is imperative that all openings be tightly sealed to cure the lining properly or loss of strength and cracking may occur.

After 12-hour curing period, spray pipe lightly to remove loose debris then fill slowly. For new pipe, water-spray the lining approximately 12hrs after initial moisture cure, and reseal, leaving a small amount of water inside the pipe until shipment or filled with water. Pipe should be filled with water within 7 days of lining completion.

## TECHNICAL DATA SHEET

### Life Test Temperature Range

100 cycles of dry heat at 350°F / 176.7°C and then quenched in tap water. Appearance after test, not cracking or spalling, condition good.

### Maximum Temperature Test

Material was tested to 900°F / 482°C and held for 30 minutes, appearance slightly lighter and strength unaffected.

### Porosity and Density Test

Initial Suction Rate – 0.163 gms/sq.inch/1 minute

Density - 136.4 lbs per cu.ft / 185kg cu.m

Suction rate is low (equal to .38 gms per 30 seconds)

### Shrinkage Test

Shrinkage – 0.00002%

### PH and Solubility Tests

Sample immersed in a definite volume of distilled water for 48 hours. The pH of the water extract and the soluble matter determined. Six extractions were made on the same sample:

Extraction No.	PH	Soluble Matter
1	11.01	0.065%
2	11.15	0.054%
3	11.25	0.051%
4	11.20	0.042%
5	11.23	0.035%
6	11.20	0.032%

Note: The Warnock Hersey Company, a third party testing laboratory, prepared the above results.

If you have any questions regarding technical information of Alkrete lining material, please feel free to contact Mr. Jamie Russell at HydraStone Industrial Coatings Inc., 519-766-8466.