ACRYLIC SEALER FOR CONCRETE BLOCK PAVING

Y. Tsur
Ashkalit Chemiprod Ltd., Ashtrom Industries
Kibbutz Tel-Yitzhak, Israel

ABSTRACT :

Concrete block paving-stones are exposed, in various areas, to staining materials such as; oil, beverages, foods and chemicals.

A clear, or pigmented, water-based Acrylic sealer was developed (*) which prevents absorption of stains, and thus facilitating easy and low-cost cleaning of the sealed surfaces.

The pigmented sealer is used for renewing surfaces stained with irremovable spots such as; concrete, paint, etc.

*** by ASHKALIT CHEMIPROD Ltd.**

INTRODUCTION :

Unsurfaced concrete block pavings function in many areas :

- Residential
- Industrial
- Commercial
- Parking garages, etc.,

Concrete blocks are an excellent flooring choice from the structural and economic aspects.

They possess high compressive strength and abrasive durability. However, their surface is highly porous and susceptible to deep staining, such as :

- powdery solids such as fine soil and soot
- oil, grease
- gasoline
- coffee, cola
- fruit juices
- dog manure

The soaked materials can cause discoloration, which often proves very difficult to remove.

What can be done to prevent staining ?

Use a proper surface-sealer !

Properties of a good surface-sealer.

A good surface-sealer requires a combination of properties in order to function properly :

- very low viscosity; to flow and spread on the surface, and get easily absorbed.
- chemical and water resistance
- hard and durable
- UV and weather resistant
- low cost

\PROPERTY MATERIAL\	low viscosity	chemical & water resistance	hard and durable	UV and weather resistance	low cost
Epoxy (2 component)	---	+ +	+ +	-	--
Polyurethane (2 component)	+ -	+	+ +	+ -	--
Acrylic (mono methyl methacrylate)	+	+ +	+ +	+ +	--
Chlorinated rubber (solvents)	+	+ -	+ +	+	-
Acrylic solvent based	+	+	+	+	-
Polyurethane water based	+	+ -	+	+ -	-
Acrylic Emulsion water based	+	+	+	+ +	+

Some systems use organic solvents inherently and some in order to reduce viscosity. These solvents are toxic and environmently dangerous.

DUROSEAL

ASHKALIT CHEMIPROD have developed an Acrylic Emulsion based sealer combining all the properties required.

It is based on a hard resin and exhibits the following unique properties;

- it dries very fast, showing early resistance to water and detergents.
- easily recoatable, which is extremely important for repair and renovation.
- high chemical resistance to acids, bases, oils, greases and detergents.
- highly reduced efflorescence.
- high UV and weather durability.
- supplied as GLOSSY or MATT
- supplied as PIGMENTED with oxides, used for obscuring unremovable stains and for surface renovation.
- easily applied.
  Best applied with a hand-operated insecticide sprayer. Sand between blocks is impregnated and set and does not move to the surface where it strongly adheres creating a sand-paper effect.
- consumption : @ 0.2 - 0.25 liter / sq.m. for regular cement block paving.

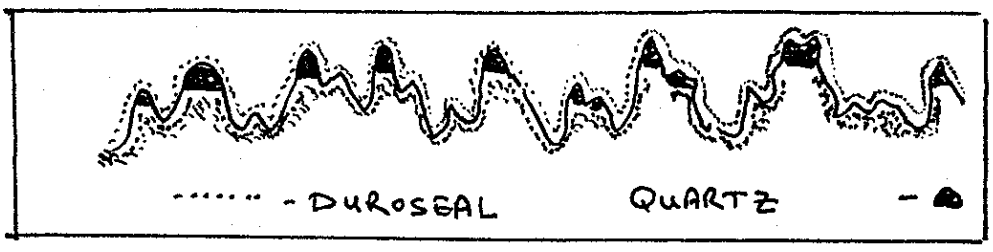
HOW DOES IT SEAL ?

It is obvious that a concrete block surface undergoes mechanical erosion in areas with heavy traffic.

Any organic coating will not be resistant to erosion more than quartz or other hard stone.

So why should someone invest in sealing such an erodable surface ?

One should observe the surface in the micro, and notice that it looks like the peaks of the "Himalayas".



The top of these peaks is composed of hard rock granules, bonded with the cement mixture. The sealer coats the rocks, whereas the cement is impregnated and deeply soaked.

So when the tops of the peaks are eroded only their coating disappears, whereas all the rest remains intact, keeping the whole surface sealed.

THE CHEWING-GUM SYNDROME.

It seems that most of the human chewers do not swallow the gum as the taste passes away, but rather "donate" it to the general public.

Well-chewed gum on concrete paving is not soaked up but sticks very well to the sealed block ! It takes drastic measures, like pressurized steam, to remove this nuisance !! However, pressurized steam does not remove "DUROSEAL", exposed up to 90 - 120 seconds.

CONCLUSION :

A private house-owner, commercial business or public authority who wish to keep the cement-block paving maintained and clean, should consider the extra cost of surface sealing.

Use of "DUROSEAL" provides easier and faster cleaning and prevents deeply soaked stains which are practically unremovable.