CLEANING & PROTECTING BRICKWORK, CONCRETE AND OTHER BUILDING FACADES WITH CALMARC PRODUCTS

Second edition

CALMARC CHEMICALS
16 Goongarrie Street
BAYSWATER WA 6053
TEL. (08) 9378 2022 FAX. (08) 9377 2575
ABN 18 340 289 669
WEB: www.calmarc.com
Email: calmarc@westnet.com.au

FOREWARD

This booklet has been compiled by Calmarc Chemicals to assist builders, specifiers, building facade cleaners and others who wish to clean a stained or dirty surface. The objective of this booklet is to focus on removing the common and unusual stains associated with building facades (vertical or horizontal) both internally and externally. Calmarc Chemicals have developed a product range of specialized cleaning products for removal of the most common stains on building facades and difficult unusual to remove stains associated with buildings. We continually strive to improve the effectiveness and safety of our products. Calmarc Chemicals have written this booklet with a focus on Calmarc products but have also covered those areas of stain removal which are best removed with other products. At all times, Calmarc Chemicals appreciates reader response to this document and offers to assist with a facade cleaning or cleaning pavers or concrete or other substrates.

First edition: BRICKCLEANING PDF JANUARY 2008
Second edition: BRICKCLEANING PDF NOVEMBER 2019

CONTENTS PAGE No.

MORTAR SCUM ON CLAY BRICKS

APPRAISAL OF CLEANING CLAY BRICKWORK

The most common acid used to clean brickwork is hydrochloric acid as it is suitable to remove low level mortar staining of brickwork but not high concentration of mortar on brickwork or other types of staining. Hydrochloric acid is sold as a concentrated solution usually containing 26-28% m/m and purer grades containing 32-33% m/m of hydrochloric acid. It is a low-price raw material and mainly comes from a chemical process, as a by-product. There are pure grades available. These contain 32-33% m/m of hydrochloric acid which are more expensive.

Hydrochloric acid is diluted with water and used for cleaning clay bricks and removing mortar scum from bricks. This acid is generally suitable for removing pure Portland cement, Portland cement and lime mortars, or pozzolanic cementitious binders respectively, from clay bricks within a reasonable time, for example, 7 days plus from the time of laying the bricks. Cleaning before this period will most likely deteriorate the mortar surface and strength.

Where the cementitious binder has a portion of blast furnace slag or fly ash pozzolanic with pure off-white or white cement, with lime in each case, the cleaning of the clay brick can become difficult. The resultant mortar scum on the surface of the clay bricks will not usually remove easily with diluted hydrochloric acid. Even if pure hydrochloric acid is used, the scum is difficult to remove. The mortar scum is removed relatively easily if the cleaning process is done soon after laying the bricks. However, attempting to acid-clean too early after laying the bricks could affect the final strength of a new low strength mortar and open the mortar surface to the elements, so care is required. In winter, wash from rain on newly laid brickwork produces white stain runs from the mortar (especially if a cream or white mortar with lime). These white run stains on the bricks do not remove with hydrochloric acid, either in a weak or strong solution.

Additionally, there is the thin mortar scum stains on some of the brick face. This scum stain is caused by the bricklayer laying the brick and positioning it with hits from a trowel on the face of the brick. Excess mortar is wiped away in a cavalier manner, in such a way it is wiped by the trowel over the face of the bricks leaving a thin scum stain. If these scum stains for the cement binders described in this paragraph are not removed with a wet sponge soon after laying the bricks, the scum stain gains resistance to being removed with hydrochloric acid. Sponging over the mortar joints leaves a thin mortar scum over the brickwork. This scum stain is very difficult to remove.

Even the use of pure hydrochloric acid usually does not remove the scum stain over the bricks in the majority of cases.

The insoluble white scum stains occur when too much hydrochloric acid is used during the cleaning process. The products developed from the reaction between the acid and mortar absorb into the bricks instead of being washed clear of the wall. The prominence of the staining usually is related to the use of high content clay bearing sands in the mortar. The combination of clay, with calcium and silica residues from the cement produce resistant white films on the brickwork. Even so, the scum in these cases will not remove with dilute hydrochloric solutions.

The CSIRO (NSB 59 Brochure) conclude this and Calmarc agree with their research. Only the use of MAXiCLENE, DYNACLENE or MAGiCLENE with hydrochloric acid and water will remove this staining, using pressure blasting. DYNACLENE is not as reactive as MAXiCLENE or MAGiCLENE. MAXiCLENE contains hydrofluoric acid which is dangerous and hazardous whereas MAGiCLENE and DYNACLENE do not contain hydrofluoric acid.

See under the heading SPECIALISED ACIDS – WHY THE NEED page for removal procedure of these resistant white scum stains.

After any cleaning process, the bricks should be left overnight or for 24 hours or so to have the face of the bricks dry out fully. When the bricks are dry, they can be checked to determine whether any

of the stains or mortar scum are still prevalent. An experienced professional brick cleaner is able to determine within 15 minutes whether the cleaning process has been successful.

When nearly pure or pure hydrochloric acid is used for cleaning, the surface of the clay bricks is attacked to such an extent that the chemical structure of the bricks is sometimes altered. The clay bricks obtain a burnt look and the iron content in the clay brick (especially a red clay brick) is partially dissolved, causing a splotched look on the bricks. This splotched look is the removed or re-deposited dissolved iron. The application of strong hydrochloric acid opens up the clay brick's surface, thus allowing progress of strong acid into the clay brick core. This may result, after a few years, in the clay brick beginning to crumble or delaminate on the surface or fret away.

Rinsing water does not neutralise acids when used to wash down the brickwork. The rinsing water either dilutes the acid, and/or (by a capillary action) takes the acid further into the brick substrate and mortar respectively. See under the heading NEUTRA – A NEUTRALIZING AGENT on page 4.

Red clay brickwork, which has been cleaned with high concentrations of hydrochloric acid will leach iron. This leaching effect will be noticed as runs onto the mortar as red to brown stains. This occurs through normal water contact, for example initial cleansing water, rain or scheme water sprinkler contact or rinsing water, on the brickwork, which releases the solubilised iron that is a leftover from the application of excess acid during cleaning. Use of normal or very strong hydrochloric acid brick cleaning solutions are highly unlikely to clean off mortar scum – especially if it is left a long time. The best procedure for dealing with initial cleaning of brickwork is as follows. For substantial amounts of mortar scum left on the brickwork, it would be wise to clean using MAXiCLENE, DYNACLENE or MAGiCLENE as an additive with diluted hydrochloric acid from the beginning, as hydrochloric acid on its own will not usually be suitable.

PEELABLE TEMPORARY PROTECTIVE COATING

SUBSTRATE PROTECTION

LIQUID MASK is applied over window glazing and the aluminium window frame the window (glass) is contained in. Processes such as applying cement rendering (or floating), one bag white gypsum plaster skim finish or gypsum/lime plaster skim finishes and painting where splashing or drops occur, become attached to the LIQUID MASK. LIQUID MASK protects downpipes (galvanised or zinc alum) from acid attack.
When the trades have completed their applications of products, the LIQUID MASK is peeled off or wetted for easier peeling. A clean windowpane and frame are the result without any damage to these items.

FIRST AID AND SAFETY

PERSONAL PROTECTION

When using various chemicals and acids for cleaning brickwork take notice of the following safety and first aid recommendations.

CHILDREN Keep all cleaning chemicals of any type away or out of reach from children.

SAFETY Wear protective rubber or polyethylene elbow or shoulder length flexible gloves, a half face eye shield, protective clothing (preferably waterproof) and safety boots (preferably with rubber protection covers or rubber boots).
If using acids containing hydrofluoric acid, e.g. MAXiCLENE keep a tube of 50mls or so of Calcium Gluconate gel on hand at the location of acid use. Calcium Gluconate applied to the area of contact has a neutralising action of the hydrofluoric acid. Obtain medical advice immediately.

FIRST AID MEASURES

SWALLOWED Drink water or milk. Do not induce vomiting.
INHALED Remove to fresh air.
SKIN Wash off with water followed by soap and water.
EYES Wash off with water.

INITIAL CLEANING OF CLAY BRICKWORK

INITIAL CLEANING

The wall should be 7 days or older. Begin by physically removing all mortar dags from the wall using a metal scraper.

The wall is now suitable to attempt cleaning by the normal conventional method: which is using a mixture of hydrochloric acid (spirits of salts) diluted with water.

The wall, it must be emphasized **MUST BE INITIALLY WELL WETTED**. Do not use more than one part of volume 32% m/m (average) hydrochloric acid to 10 volume parts of water, regardless of how dirty the wall is. It helps to start by using a mixture of 1 volume part of hydrochloric acid to 19 volume parts of water by volume parts. Only slightly increase the strength where it is absolutely necessary. Using too much acid on the brick causes additional problems (some of which were detailed on page 1). Rinse after use with copious quantities of water scrubbing while doing so. Pressure water blasting is the recommended method of rinsing and cleaning the brickwork after acid treatment. Pressure blasting uses allows less acidic chemical can be used compared to brooming and water from a scheme water hose. Far less water is used with pressure blasting. A guide to hydrochloric acid percentage in a dilution of: 1 litre of 32% m/m hydrochloric acid diluted with 19 litres of water, the percentage of hydrochloric acid in the solution is in the region of 1.86% m/v or 1.06% v/v.

When working on interior brickwork, ensure that adequate ventilation is available, as acid fumes can corrode brass, copper, aluminium, zinc, steel and iron. This means that the acid fumes may attack electrical switches, destroy valuables and cause nausea if there is no means for them to dissipate.

Start at the top – not at the base of a wall. Some begin on the lower part of a wall, and then employ scaffolding later to do the higher parts. Doing this will cause all the sludge that is cleaned off the higher bricks to run down the wall onto the newly cleaned lower areas. This sludge sometimes adheres so strongly to the bottom brickwork that it is unable to be removed with normal brick cleaning dilutions.

Clean small areas at a time. About 25-50 m^2 is a convenient area, although an area possibly smaller than this might be even better. This depends on the degree of difficulty to remove the mortar scum.

Use a proper acid brush with a long handle when cleaning large areas of brickwork. Dip the brush in the hydrochloric acid dilution, remove it with a full quantity of acid solution on/in the brush. Scrub the acid solution evenly and not excessively over the brickwork. The brickwork should be well wetted with acid solution from every dip, which assists the scrubbing and removal of the mortar smudges. It is best to apply the acid solution as a skim coat and not slosh it as a liberal application to the brickwork.

Hose off with brushing by using clean, clear water with no dissolved salts. Or, recommended, the acid-ed wall with a pressure water blaster at 2700-3000 psi.

If necessary, the treatment may be repeated, but allow the brickwork to dry out thoroughly (to the state it was before cleaning) before starting again. Allowing the wall to dry out will show any mortar smears that may not have been seen when the wall was wet.

If the brickwork has concrete or concrete pavers abutting to it, have a hose with running water nearby laying on the surface so acid residue or splashes do not react with the concrete surface and are drained away.

It should be remembered that hydrochloric acid is corrosive. When used indoors, all doors and windows should be kept open and forced ventilation used if possible. Avoid splashing the acid mixture on any areas surrounding the brickwork such as concrete paving. It is advisable to wear full arm (best) or elbow-length rubber gloves, protective clothing and safety glasses.

NEUTRA ... A NEUTRALIZING AGENT

NEUTRA is a neutralizing agent, diluted with water before application, then applied as instructed in the NEUTRA brochure and is described following.

After doing the above cleaning procedures for external and internal brickwork, apply by solution, a solution of NEUTRA C as a dilution of 1 part of NEUTRA to 9 parts of water or use NEUTRA RTU. After allowing contact with the wall for 10 minutes, rinse the walls down with water. NEUTRA neutralizes residual acid in the brickwork and is highly recommended for indoor applications. Hydrochloric acid, unless neutralized, volatises from the brickwork and the acidic fumes corrode metal fittings and deposit on and under timber surfaces.

A product NEUTRA RTU is available which is sold as 'READY TO USE' which does need dilution with water.

WATER ALONE DOES NOT NEUTRALISE ACIDS. WATER WASHING! DILUTES THE ACID DURING THE RINSING PROCESS AS WELL AS REMOVES THE ACID ON THE BRICKWORK SURFACE. ACID ABSORBED BY THE BRICKWORK REMAINS IN THE BRICK SUBSTRATE.

If these instructions are followed, normal mortar smudges should be able to be removed. Occasionally, various types of stains and blemishes on the bricks may appear after the normal cleaning is finished and the brickwork has fully dried out. These types of stains are discussed further in this booklet. They require specialised acids to clean the stained brickwork.

STUBBORN MORTAR SCUM

If there is any remaining mortar scum or white stains on the bricks, use MAGiCLENE, MAXiCLENE or DYNACLENE (depending on the case) to remove the blemishes. Specialised acid products are required as further treatments because hydrochloric acid water dilutions will have no effect on removing mortar scum that is not already removed. These specialised acids are usually used as a blend with hydrochloric acid or occasionally used as supplied.

The facades of clay brick and concrete finishes respectively, are basically the same historically and the same in their individual composition but the methods of manufacture are very much refined. Raw materials for these finish products are processed with a scientific approach to produce the most economical facade product but with many different colours and surface finishes. This can be done because of scientific knowledge of materials is very much enhanced. As is so with machinery to manufacture the facade products. Some points of change are:

Cement is a much finer particle and of chemical phase composition to produce much higher strength and chemical change respectively in the present time from 1960 after which cement began to be ground finer.

Clay bricks are produced in kilns of very high efficiencies with very much less time to produce the clay brick. The use of natural gas, or liquid hydrocarbon (oil) fuels has far more heat value than high quality wood of yesteryear used in kilns. Although the manufacturing processes of today supply very attractive range of clay bricks, the bricks have a high micro pore structure.

The cement and/or lime mortars with very fine particle size binders adhere and penetrate more easily into these fine micro pores of the clay bricks or concrete masonry products.

In the case of concrete masonry products, the situation is the same as these fine binders create a micro pore system in the concrete masonry products as it does with concrete.

Special expensive laboratory instrumentation is required to determine the pore size and quantity of pores in a clay or concrete masonry product.

Hydrochloric or its dilutions do not, in a number of instances, remove adsorbed mortar scums from clay brickwork. Specialised acids, either singularly or in combination with hydrochloric acid are necessary to remove all the mortar scum stains. This is similar for mortar scum stains on concrete masonry.

Removal of these unsightly stains of mortar scum or Vanadium or Manganese stains, e.g. see the following section (only associated with clay bricks), requires specialised products so the masonry facade is not damaged from over excess of continual applications of strong hydrochloric acid solutions and caustic hypochlorite (bleach) solutions.

SPECIALISED ACIDS – WHY THE NEED

THE NEW APPROACH FOR CRISPY CLEAN MASONRY

The issue of the necessity for using specialized acids such as MAXiCLENE, DYNACLENE and other specialty acids for various purposes, needs to be addressed. If normal hydrochloric acid dilutions do not remove stubborn adsorbed scum stains, this does not mean that they should be left. Continued use of a straight 28-30% m/m hydrochloric acid may eventually, but usually will not, remove the stubborn scum stain. The acidic content required per unit area of the scum stain to be removed is quite substantial. In most cases, after many strong hydrochloric acid dilutions or used as supplied, the mortar scum is not removed, and acid attack occurs on the bricks and mortar. The chemical nature of the stain is altered as well making it more difficult to remove.

The advantage of specialised acids such as MAXiCLENE, MAGiCLENE, DYNACLENE, GEOCLENE and VANACLENE is that they remove the stubborn stains with a small amount of acid per unit area of stain. This is still the case when either MAXiCLENE or DYNACLENE or a composite of each is used with hydrochloric acid and diluted with water.

The result is that the scum stain is removed with minimum acidic content and contact to the bricks, and the removal process is very quick and displays an optimum economy of labour and materials. The cleaned brickwork looks fresh and crispy clean.

Where the mortar scum is not being removed with the normal hydrochloric acid cleaning procedure, the addition of DYNACLENE, MAXiCLENE, MAGiCLENE or GEOCLENE is worthy to add to the hydrochloric acid cleaning solution.

FORMULATED SPECIALISED ACIDS DESCRIPTION AND THE NEED

Guide addition: 500ml to 1 litre of DYNACLENE or in some cases GEOCLENE, is added to the hydrochloric acid cleaning mixture. If this suggestion does not work in the following section for stain removal will be needed.

With using specialised acids they are usually mixed with hydrochloric acid and the mixture diluted with water. Guide mixes are described in the following section. These acid mixtures diluted or straight are applied to dry masonry, either clay or concrete in their use. The walls are not prewetted before using these types of acids. The application of these specialised acid mixtures is carried out on dry walls.

DYNACLENE

This acidic liquid product is very active and is virtually odourless. DYNACLENE is excellent for removing calcium white stains and mortar scum from brickwork. DYNACLENE is excellent for cleaning stainless steel, especially urinals, leaving a smooth surface with shine.

DYNACLENE, when 500ml of it is added to 20 litres of normal hydrochloric acid solution for initial cleaning of bricks, it adds an extra boost to the hydrochloric acid solution making the cleaning process much easier as well as giving a much cleaner, brighter appearance to the brickwork.

DYNACLENE has proven to be very suitable to clean some granites – especially light coloured granites.

DYNACLENE is exceptionally effective for removing white (calcium) bore stains from brickwork. For heavy calcium staining use as supplied or a mix of:

2-3 litres of DYNACLENE: 3-4 litres of 30% m/m hydrochloric acid, balance water to 20 litres.

GEOCLENE

This acidic product is very effective for removing red (iron) bore stains from brickwork and many other surfaces.

GEOCLENE is a very much safer product to use for iron stain removal than hazardous hydrofluoric acid. Public Health License is not required for GEOCLENE as is the case for hydrofluoric containing products.

GEOCLENE is more active than oxalic acid which is also used for bore rust removal but is only effective for some red iron coloured stains. Whereas, GEOCLENE is totally effective for all red coloured stains and old blue-black bore stains.

GEOCLENE is used to remove coloured mortar scum from brickwork laid with colour mortar. It is also suitable to remove mortar scum from coloured concrete blocks or blockwork. The concrete blockwork will have the fine cement surface removed on acid cleaning but the under-surface coloured finish will present a clean even coloured finish.

With plain grey concrete blockwork after acid cleaning will remove the fine grey cement surface layer showing the aggregated colour of the concrete mix which is usually very attractive.

Cleaning mixture:

2-4 litres of GEOCLENE: 2-4 litres of 32% m/m hydrochloric acid with balance water to 20 litres.

MAGiCLENE

MAGiCLENE has been developed as a safe to use alternative acid for products which contain hydrofluoric acid, e.g. MAXiCLENE.

MAGiCLENE is used to remove white calcium silicate stains on brickwork which have had two or three normal

acidic applications to remove the initial mortar scum. In all cases this technique has failed leaving a highly

difficult white scum stain. In the past, only hydrofluoric acid containing products could remove these stains.

Now MAGiCLENE can do it with safety.

MAGiCLENE is used to remove white calcium silicate stains on brickwork which have had two or three normal acidic applications to remove the initial mortar scum. In all cases this technique has failed leaving a highly difficult white scum stain. In the past, only hydrofluoric acid containing products could remove these stains. **Now MAGiCLENE can do it with safety**.

MAGiCLENE is diluted with water from 4 to 8 times – usually 6 times, well mixed with the water to create a homogenous solution. Apply this diluted MAGiCLENE to the stained wall with scrubbing, followed with high pressure 2700-3500 psi water blasting. Neutralize after rinsing, with NEUTRA RTU or NEUTRA C diluted 9 times with water. Rinse after neutralizing.

MIRACLENE

This acid is a newly developed acid which is safe to use for unusual cleans or stubborn stain removal. Development work for applications of MIRACLENE is being researched.

MAXiCLENE

MAXiCLENE contains 9% m/m of **hydrofluoric acid** which is **hazardous** and **dangerous** to use. It is used in low percentages when included as an ingredient in the normal acid brick cleaning solution.

Standard mixes to clean off these white scum stains is: hydrochloric acid 32% m/m 2-4 litres: MAXiCLENE 2-4 litres: water to 20 litres. From the range of ingredient additions, one of these solutions should show suitability to remove the very stubborn stains.

MARVELCLENE

The genius with MARVELCLENE, which is based on phosphoric acid is: the reactivity is considerably increased making the product remove rust more effectively from metal as well as treating acid burnt clay bricks. Most important, is MARVELCLENE removes Manganese Manganese stains by forming an insoluble salt with the Manganese making it insoluble.
Neutralizing with NEUTRA C greatly assists the permanence of the reaction thus illuminating the Manganese stain. Diluted 1:9 with water or NEUTRA RTU.

VANACLENE

This product is designed to remove yellow Vanadium stains from clay brickwork. It is used in a cleaning mix solution being 2 litres of VANACLENE, 2 litres of 32% m/m hydrochloric acid and the balance water to 20 litres. Variations of quantities of VANACLENE and hydrochloric acid can be used depending on the degree of stain concentration.

VANACLENE removes green Vanadium stains in a slow process which may take 3-5 days where there were spot green stains in amongst the yellow staining. This action takes place with the cleaning operation with no special procedure for the green spot staining.

Cleaning light coloured bricks with VANACLENE in the acidic mix, produces a clean bright coloured brick as if it had come straight from the kiln.

VANAMOVE

VANAMOVE is a composite of organic acidic compounds which have a strong reducing action. VANAMOVE removes brown and blue Vanadium as well as green Vanadium stains. For the green stains, removal occurs fully over a few days.

VANAMOVE also removes most iron bore stains and not related deep rust coloured or blue-black iron stains which occur on a clay brick before any cleaning or after a normal first hydrochloric acid clean.

GLEAMCLENE

This acid is mainly based on phosphoric acid with chelating acids. It is used for repairing clay bricks which have been burnt in the cleaning process but with a very strong Hydrochloric acid solution.

Where windows have calcium deposits from bore water leaving the deposits after evaporation of the bore water. GLEAMCLENE dilutions of 10% by volume are excellent for cleaning windows in this situation.

In some cases where high calcium bore waters are used for household use, the utensils become covered with calcium deposits. GLEAMCLENE solutions clean the cutlery to a new condition. Dilutions with distilled water from 6-8 times by volume are used.

STEELCLENE

This product is a composite of food acids and is designed to remove iron stains and iron filing swarf from sensitive substrates. These being painted surfaces or stainless steels. STEELCLENE cleans without damaging the surface although a small trial is necessary.

STEELCLENE is environmentally safe and is used to remove rust from steel surface.
1 STEELCLENE: 3 water solution for the rusted steel piece to be soaked in will remove rust.

SUMMARY OF STAINS

The colours of the stains from Vanadium, Manganese and Iron have similarities of colours depending on the various chemical states of the chemical compounds in clay brickwork.

These states changes, e.g. yellow to green, brown to black.

Experience is the best guide to judge from the colour of the stain in the bricks to what is the optimum cleaning chemical in most suitable to remove the stain.

Specialized products cost more but remove the unsightly stain.

OILED MASONRY

Occasionally mortar scum stained brickwork has not been cleaned very well and the stains remain. The cheap way to overcome the unsightly staining, is to apply a coat of linseed oil or white oil mixed with either kerosene, mineral turpentine or in some cases dieseline. The initial finish after coating the brickwork makes the brickwork look new and bright with no stains. After three to six months these oil coatings oxidise and/or slowly disappear due to weathering. The mortar scum stains show up again as they were not removed in the first place. White oil lasts about twice as long as linseed oil.

Oiled brickwork is recommended to be washed down with a 1:1 MARCMOVE: Water solution using one or two applications to remove the oil residue on the bricks. Thoroughly pressure wash the brickwork with copious quantities of water after the MARCMOVE treatment. DYNAMIC diluted 1:9 with water is recommended to follow used as a spray as supplied on to the masonry. Pressure water clean.

Follow by cleaning off the calcium mortar scum with MAXiCLENE or MAGiCLENE diluted with water 4-6 times, or with the addition of hydrochloric acid when using MAXiCLENE. When finished, neutralise with NEUTRA as previously described in other sectors for neutralization use.

ACIDIC GASEOUS ATTACK

An occasional common housing complaint is that six months or so after occupation, the brassware becomes dull and the light fittings rust or corrode, e.g. fridges, door handles. On jarrah-finished woodwork, a white translucent powder deposits on the surface especially under railings or overhangs.

This is caused when liquid acids, and especially hydrochloric acid, vaporize out of the internal face bricks as a gas and attack metal objects and dull the finishes of furniture over time.

This acid vaporization occurs externally from face brickwork as well. It is not so noticeable externally because the air movement outside decreases or removes the quantity of the acidic vapours, thus decreasing the degree of attack on metal fixtures.

The acid does not disperse quickly from the clay bricks. It takes some time – perhaps up to two years. The use of very strong hydrochloric acid solutions only exacerbates the problem.

This problem is cured by saturation spraying of a solution of NEUTRA C diluted 1:9 with water or use NEUTRA RTU onto the face brickwork and leaving it to penetrate the bricks to neutralise the remaining acid in the bricks. Washing down the brickwork is recommended in this case after 24 hours contact. Where internal brickwork has had NEUTRA treatment, washing down may be unable to be done, the brickwork surface will dry out in time, but it is safe for humans to touch.

It is wise to use NEUTRA after any initial brick cleaning treatment as it costs very little and neutralization is necessary as acid residues are dangerous and can over time deteriorate the brickwork.

NEUTRALISING ACIDS

WATER DOES NOT NEUTRALISE ACIDS USED FOR BRICK CLEANING. WATER ONLY DILUTES THE ACID OR CARRIES THE ACID FURTHER INTO THE BRICK BY CAPILLARY ACTION. AS THE BRICK DRIES OUT, THE WATER IS FIRST TO VAPORIZE, FOLLOWED BY THE ACID, WHICH BECOMES CONCENTRATED DUE TO THE LOSS OF WATER.

After acid cleaning clay brickwork, it is recommended that the cleaning area be neutralised with NEUTRA. NEUTRA does not leave any stains after use or odours after or during its use.

NEUTRA C is supplied as a concentrate and is diluted with water before being used. The usual dilution is 1 volume part of NEUTRA to 9 volume parts of water. **NEUTRA RTU** is a solution which is ready to use and used as supplied with no dilution. The dilution made through NEUTRA C and/or NEUTRA RTU is sprayed over the wall as a wet saturated coat. It can be left as is or, preferably, it should be lightly washed down after 30 minutes of contact. Neutralisation of residual acid in the brickwork eliminates the potential problems mentioned previously in this brochure.

STAINS AND DEFECTS

EFFLORESCENCE

The term efflorescence is a term given to a powdery deposit which forms on the surfaces of porous building materials. These being clay bricks, mortar, concrete masonry and concrete no matter the type of general-purpose cements and aggregates respectively. Usually the powder is white but can be yellow, green or brown.

This defect is associated with potassium, calcium, cations respectively and sulphates, chlorides, phosphates, nitrates, carbonates anions respectively. These chemical compounds are called salts as a generic description. They are inorganic compounds. ONLY INORGANIC SALTS FORM EFFLORESCENE.

When the salts are new, they are usually in a powdery form, which can usually be physically removed by brushing and/or washing with water. A little cleaning with hydrochloric acid diluted 10 times with water should complete the removal of efflorescence a few days old.

If left, the efflorescent salts generally in time change to magnesium or calcium salt (usually a carbonate), which are either insoluble or partially soluble in cold, diluted hydrochloric acid solutions. Thus, they do not remove easily or quickly using hydrochloric acid solutions.

DYNACLENE or GEOCLENE used as supplied or 1:1 or 1:2 dilution with water is suitable for removing these stains or deposits. Either acidic solution being used should be worked on the stain or deposit until it has removed, followed by water rinsing.

BORE WATER (IRON) & CALCIUM (LIME) STAINS

The iron stains are mainly in the ferric (rust) form. The white calcium stains are mainly pure calcite crystalline calcium carbonate. The calcium stains examples are calcium carbonate from a concrete capping on clay brickwork, mortar or bore water. The calcium carbonate is dissolved in water with a high carbon dioxide content. This forms calcium bicarbonate, which is quite soluble in water, but has a short life. The soluble bicarbonate flows down the face brickwork and, on evaporation, reforms as calcium carbonate.

DYNACLENE is the most suitable acid to use to remove hard calcium deposits. Use it straight or dilute 1:1 with 30% hydrochloric acid. DYNACLENE is safe to use. MAGiCLENE diluted from 1:4 to 1:6 with water has more strength and usually removes the very hard calcium stains.

GEOCLENE is the most suitable for removing iron bore stains and is safe.

MAXiCLENE will remove iron and calcium stains. It is **dangerous** and **hazardous,** and **A PUBLIC HEALTH DEPARTMENT LICENSE IS NECESSARY TO PROCURE IT**.

MANGANESE STAINING

The Manganese stains are coloured from a deep rusted black shade to black.

Removal is done by scrubbing MARVELCLENE as supplied or is diluted 10% V/v with water. After removal rinse treated area with enough water to remove residues. Leave area to dry and treat the area with NEUTRA C diluted with water 1:9 or use NEUTRA RTU which needs no dilution. When the wet look has subsided, give the treated are a light water rinse.

Table. 1. Colours shown are heuristic examples which can occur on clay brickwork masonry.

Oxidation State	Ion	Colour
+2	Mn^{2+}	Pale Pink/Clearless
+3	Mn^{3+}	Dark Brown Solid
+4	MnO_2	Black Solid
+6	MnO_4^{2-}	Green
+7	$Mn0_4^-$	Purple

VANADIUM STAINING

Vanadium staining is caused by migration of the complex water-soluble vanadium compounds from the body of the clay brick to the surface (water or moisture being the carrier) through the normal moisture movement cycle which occurs in a clay brick wall. Most vanadium compounds are partially or very soluble in water.

An empirical approach to the vagaries of vanadium compounds is put forward as a starting point to the problem of vanadium staining. There is a considerable amount of fluorine and chlorine emitted from the firing of clay bricks. With the firing heat and the mobile fluorine/chlorides, vanadium fluorides and chloro fluorides of different types form. Most types of vanadium fluoride compounds are water soluble and move to the surface of the brick as it dries out.

Vanadium staining is usually initially yellow to yellow green and turns dark green to brown through oxidation. Sometimes the dark green stains form without any initial yellow stain. They are therefore in this state in the body of the brick. Occasionally blue vanadium occurs.

The yellow stains have sometimes a fluffy property about them. It can be rubbed off in some instances, especially when new. The green to dark green stain is more permanent. This stain sometimes slowly disappears in a few years if in direct attack from a yearly weather cycle.

Vanadium chemistry is highly complex because vanadium has many physical states. There is apparently no known method to control the water solubility of vanadium ion, so it does not appear as a stain when making a clay brick.

The yellow stains can be removed using VANACLENE, on clay bricks. Dilute alkalis and bleach only remove green vanadium stains. These chemicals leave a whitish bloom where used.

VANAMOVE will remove the green vanadium stains.

Other vanadium stains which occur are brown vanadium and occasionally blue vanadium stains. Each of these stains will be removed with VANAMOVE.

Table. 2. Colours shown are heuristic examples which can occur on clay brickwork masonry.

Oxidation State	Ion	Colour
+2	V^{2+}	Violet
+3	V^{3+}	Green
+4	VO^{2+}	Blue
+5	VO_3^- or VO_2^+	Yellow

TIMBER & TANNIN STAINS

Tannin stains occur through the leaching or exudation of sap or tannin from timber which is fixed onto or embedded into a brick course. The sap or exudation has either run down onto the brickwork or is washed down onto the brickwork by water usually from rain.

GEOCLENE, or VANAMOVE are suitable to remove tannin off clay bricks. Sometimes hypochlorite solutions remove these stains, but they return in many instances. Bleach has to be used if these stains are on a cement render or concrete blockwork as acidic products attack cementitious substrates.

These stains should be removed as early as possible because the tannin oxidises to other compounds, which make the stain very difficult to remove.

On light coloured clay bricks it is virtually impossible to remove the tannin stain completely. A shadow is left in many instances. If the tannin stain has oxidised through time, there is very little a chemical treatment can do to remove it.

Removal and replacement of the bricks may become necessary. The new replacement bricks can be placed with a colour matched mortar using the MXL mortar replacement injection system.

CLEANERS & REMOVERS

MARCMOVE is a multi-solvent cleaner stripper. MARCMOVE is designed to be used by diluting it with water. Depending on the use and severity of the substance to be removed,

dilution from 1:1 to 1:3 with water are used. MARCMOVE is excellent to remove oils, tyre marks, grease, some paints, adhesives, paving sealers, clean vinyl sheeting and painters' equipment.

WIZSTRIP is a gel paint stripper which is odourless, non-acidic and relatively safe to use. WIZSTRIP will strip normal paints quickly, multi-layer paint mixes between 4-24 hours and urethanes/epoxies 24 hours. For long term contact, the WIZSTRIP effectiveness is greatly enhanced by covering it with waxed single side paper or aluminium foil.

Removal is best with a pressure water blaster. For small areas, e.g. timber: scraping with water rinsing by using a wet rag or brush.

GRAFFI PAINT REMOVER is designed to remove spray can paint from masonry and other substrates spray can paint has been applied to. It is a solvent alkali solution with a bland odour. GRAFFI PAINT REMOVER is brush applied to the graffiti and pressure blasted off at 500-1000 psi (34-70 bar) straight after application.

GRAFFI PAINT REMOVER is most suitable to strip standard paint from masonry or most other substrates.

It is prudent to do trial tests for graffiti paint removal beforehand to determine its properties of removal.

GRAFFI PEN REMOVER is a solvent product with a sweet odour. GRAFFI PEN REMOVER is designed to remove marker pen graffiti from mineral, timber and metal surfaces.

The product is applied by brush or pad to the pen graffiti and immediately removed by wiping a rag over it or pressure blasting the area.

It is wise to pre-test the removal process to be aware of how the pen graffiti removes from a particular substrate.

DYNAMIC is a unique detergent system which is not aligned to conventional detergent cleaner formulations. DYNAMIC is slightly alkaline with inherent biocidal properties without the addition of biocides.

DYNAMIC is used to clean paving, showers, remove verdigris and soap scum, grease, oils, tyre marks, windows, toilets, timber decks and many more related areas. It is excellent to clean floor coverings where dead bodies have laid for a few days.

General use is to apply DYNAMIC by spray or brush to the substrate to be cleaned as a thin application. Brush or broom it about then wash away or pressure wash the substrate. With paving, apply as a 1:9 dilution with water over the area then pressure blast off. For windows, after washing off, follow with a squeegee to remove excess water.

ZETA ECO is a detergent containing Limonene which when diluted with water forms a nano emulsion giving high cleaning penetrative removal of deposits or stains.

ZETA ECO is used neat to remove body deposits in showers which have anti-slip. Finish by low pressure water running using an anti-scratch pad in both cases to assist removal.

For oil marks use the product diluted 10 times with water or straight. Use an anti-scratch pad or broom to scrub over the work. Rinse with water and scrub during rinsing.

REMOVAL TREATMENT EXAMPLES

WAX CRAYON

WAX CRAYON

Wax crayons are a nuisance stain. A lot of personal effort is required with the removal chemicals to shift these types of stains. Chemicals, such as MARCMOVE, DYNAMIC, WIZSTRIP or ZETA ECO, all water flush off.

Use of hot water rinsing assists the final removal of the crayon. DYNAMIC is recommended to be tried first, as it is the most convenient to use and is usually successful first up.

MOSS & MOULD

MOSS & MOULD

After the lump size mould deposits have been removed, use DYNAMIC straight applied to the mouldy substrate. Broom the DYNAMIC around over the substrate and remove the mould to a clean surface with pressure water blasting.

DYNAMIC has a natural biocidal action which will assist to inhibit new mould growth for a reasonable length of time

NEUTRA RTU is sometimes more suitable to clean to remove moss and mould from porous stone substrates, e.g. limestone, spongolite. Usually this occurs where moss and mould have had long term contact with soft spongy natural stones. The finish left is usually a light fawn colour on the cleaned stone. To clean the stone further, hydrofluoric/oxalic acid products are required. Calmarc Chemicals make these hazardous acid solutions on demand.

Paving substrates are best sealed, after the DYNAMIC treatment, with CALICONE clear sealer. This treatment keeps the water from entering the substrates and decreases mould growth.

DAMP-PEL RTU is a silicone water repellent for pavers and masonry which can be considered for water repellency only.

The source of the moisture moving through the brick or concrete should be cut off or restricted. For example, a retaining wall or garden bed planter box should have a waterproof membrane on the garden side of the wall. Parging is not sufficient over the long term for waterproofing. ACRABIT bitumen paint is flexible and lasts because it is acrylic reinforced. Use of PLICRETE is simple to apply and will have very long-term effectiveness. A full seamless membrane system of FIBRETAK, FIBREGLASS MATT or MEMFLEX MEMBRANE gives total waterproofing. These are Calmarc products.

SMOKE & SOOT

SMOKE & SOOT STAINS

These types of stains occur from open fires and the soot and tar deposits emitted from the fire deposit on the clay bricks. A house or building fire creates substantial smoke and soot staining on the remaining structure.

Use DYNAMIC, ZETA ECO straight to remove soot stains. Wash off with water. MARCMOVE blended with one part of water should be considered with some stains which require a hydrocarbon solvent system to remove them. Wash off with water.

PAINT & GRAFFITI

PAINT & GRAFFITI REMOVAL

Use GRAFFI PAINT REMOVER for paint can graffiti and GRAFFI PEN REMOVER for pen graffiti. For light graffiti MARCMOVE is suitable. Strip standard paint with WIZSTRIP or GRAFFI PAINT REMOVER is sometimes preferred/more suitable for stripping standard paint.

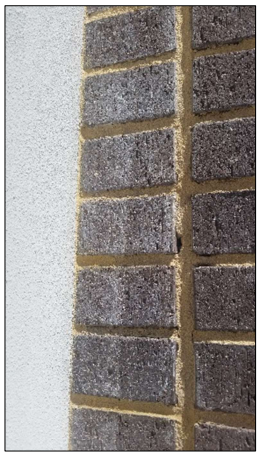
When stripping paint from brick walls of 1950's and before houses, in Perth, Western Australia remove the many applied coatings done over the years with WIZSTRIP or GRAFFI PAINT REMOVER. The remaining base coat, which is usually a dull cream colour, does not remove with paint strippers. This coating removes using GEOCLENE. Pressure water blast off as for acid cleaning of clay bricks. Apply the NEUTRA treatment to the cleaned brickwork to neutralize any residual acids.
All these products are virtually odourless.

TEXTURE COAT FINISHES

TEXTURE COAT FINISHES

Texture coat is a trowel applied very viscous coating which is finished in various coloured surface effects worked up using the trowel during application.

This texture coat finish on application if dropped or over troweled on plain brickwork and then poorly removed, leaves a surface scum. This scum penetrates into any imperfection of the brickfaces. If left to dry as a thin paint scum on the bricks it is very difficult to remove.



To remove it, use GRAFFI PAINT REMOVER in combination with high pressure 2700-3000 PSI water blasting.

BLACK MUCK STAINS

BLACK MUCK REMOVAL

This safe product, BLACK MUCK REMOVER, removes black soiling on unpainted limestone, render, concrete, brickwork respectively. Do not use on metals, painted or unpainted.

The staining is caused with continual depositing of vehicle exhaust particles and various forms of industrial dust particulates and from the dust from soils – all carried by rain or the wind.

Use the product as supplied by spraying it on the soiled substrate while scrubbing with a cleaning brush. After brushing for a few minutes to loosen the black soiling, hose off while scrubbing or preferably use a high-water pressure spray 2500-3000 PSI to remove the loosened wet soiling.

It is wise to apply DAMP-PEL RTU or CALICONE to the finished, cleaned, dry horizontal surface. This treatment aids subsequent removal of soiling apart from giving the substrate protection.

ANTI-GRAFFITI COATINGS

There are many anti-graffiti coatings available. They are either non-sacrificial e.g epoxies, polyurethanes or acrylic polyurethanes (these are the best non-sacrificial type) or sacrificial, which are normally forms of acrylics, PVA or EVA. Crosslinked acrylic water-based anti-graffiti coatings are, in most cases, semi-sacrificial.

Non-sacrificial coatings are expensive and solvent based, but graffiti usually rubs off with a special solvent up to a certain point, depending on the degree of attack the coating has endured. After a few graffiti attacks, these coatings develop a bloom and/or diminish in their effectiveness. These coatings are very difficult to remove and overcoating is generally a difficult process after they lose effectiveness.

Sacrificial water-based coatings are far less expensive than the non-sacrificial coatings and are easy to apply and not visible as a dry film. These coatings remove with the graffiti and are replaced where there was graffiti with invisibility.

CALICONE is recommended for this purpose as a sacrificial graffiti coating. XPO-FINISH is a clear up market version of CALICONE, is a sacrificial coating and can be matted and coloured.

A sacrificial coating is one where the whole graffiti affected area of coating is stripped off and re-coated with new coating, which blends into the surrounding old coating. Sacrificial coatings breathe, whereas non-sacrificial coatings do not breathe. Mineral substrates need to breathe.

A semi-sacrificial coating is able to have graffiti removed by fine scouring compounds or sample solvents up to a few times. Eventually it will have to be removed and replaced if the surface is continually attacked with graffiti, or there is one overwhelming attack of graffiti.

SEALERS

CALICONE is a water based acrylic sealer which is resistant to puddled water, mineral and most vegetable oils. The film does not go white under water and has anti-slip properties. CALICONE is a one coat application done by brush or spray. A roller can be used but care is required to not have roller overlap.

Coverage for concrete and clay brick paving is 5-7m^2/litre. For less porous substrates, e.g. ceramic tiles 15-18 m^2/litre. Clean up in the wet state is with water.

XPO-FINISH is a water based one pack hard durable pure acrylic for sealing exposed aggregate concrete finishes. This product has a very clear shiny film, is very hard and levels when applied to form an even film. XPO-FINISH is suitable for exposed aggregate concrete paving, decorative exposed aggregate concrete wall cladding. Where very high durability is required on rough exposed aggregate concrete surfaces XPO-FINISH is recommended.

XPO-FINISH is suppled in a gloss finish. Clean up is with water when in the wet state.

PAVESEAL is a solvent resin solution, which forms a film when the solvent dissipates from the wet film application. PAVESEAL is used when a wet look effect is required to a substrate such as exposed aggregate concrete or various paving types. PAVESEAL is unique as it can be supplied in aliphatic safe solvents or aromatic solvents. Aliphatic solvent systems cost more than aromatic solvent systems.

Application is a two-coat process at 7-8 m^2/litre per coat. The first coat has to be fully dry before application of the second coat. Clean up is with mineral turps.

NANOPLEX is a nano particle acrylic emulsion with the property of very high penetration. The acrylic particle size is 1000 times smaller than a standard acrylic particle in a normal architectural paint.

NANOPLEX is used as a primer sealer for sealing dressed timber, concrete or renders and enhancing old paint to extend the life to the paint.

Diluted with water 1:1 by volume is a sealer for set hardwall plaster before painting. Two coats of the dilution are necessary.

WATER REPELLENTS

AQUAPHOBIC is a micro silicon which makes a nano emulsion when mix with water.
This emulsion is highly penetrative when set on the substrate. It makes the substrate highly water repellent.

Use on fine porous surfaces, such as smooth surface clay bricks, tile grouts, dressed and plain timber, painted surfaces and concrete. Also, used as a dump preventative using pressure injection into the substrate, e.g. brickwork.

Sick advice on silicones for the use from Calmarc Chemicals.

DAMP-PEL C and DAMP-PEL RTU products are silicone emulsions which are used on more course porous substrate. Such as exposed aggregate concrete, wire cut or rough face bricks, concrete split blocks and concrete blocks. Other use is rising damp preventative for Western Australian limestone and Eastern States limestone, and old or new brickwork. Above are examples of its use.

Sick advice on silicones for the use from Calmarc Chemicals.

CONCRETE, LIMESTONE and SANDSTONE, CONCRETE BLOCKWORK, LIMESTONE AND RECONSTITUTED LIMESTONE

These products can have bore stains, red or white, or growths of calcium carbonate deposits growing out of the mortar joint and creeping up the block face and/or coming out of the block face itself. This effect can occur in relatively new blockwork or very old, for example, 10 years plus blockwork. These calcium carbonate growths are sometimes hard and glossy or soft and powdery. The soft and powdery variety is a new formation.

Remove these calcium deposits using DYNACLENE. White or light cream coloured blockwork usually do not show where acid cleaning has taken place. Other colours, especially dark colours are best cleaned with GEOCLENE. If the colour is affected it can be regenerated with a clear sealer, CALICONE. If this is unsuccessful, a coloured staining sealer can be applied. Sometimes the colour in the brickwork is removed to some degree.

Carry out the work quickly so as not to attack the surface of the blockwork if possible. Concrete blockwork is made of cement and various aggregates and acids attack and dissolve cement. There may be a little damage to the surface of the blockwork from the acid treatment. This is usually insignificant relative to the unsightly calcium growths.

Treatment for calcium bore stains is taken with a similar approach as described for removing calcium growths with DYNACLENE or GEOCLENE.

ALWAYS DO A TRIAL AREA FIRST TO OBSERVE THE FINAL RESULT.

IRON BORE STAINS

Treat with GEOCLENE to remove iron stains.

It is wise to seal the concrete with CALICONE after the removal treatment.

Standard acid treatment of stained coloured concrete blockwork is not usually carried out as the colours are dissolved from the blockwork. GEOCLENE has shown to be reasonably effective without much change on coloured blockwork. This is for removing coloured mortar smudging on to the block face and removing red (iron) bore stains.

In all cases there will be some damage to the surfaces of the substrates. If the damage is too drastic, discontinue the cleaning process.

ALWAYS DO A TRIAL AREA FIRST TO OBSERVE THE FINAL RESULT.

FERTILIZER STAINS ON CONCRETE PAVERS

Various fertilizers stain pavers with either a whitish or brown stain. These stains are best removed using GEOCLENE. Clean off residue with water and brushing or pressure blasting.

ALWAYS DO A TRIAL AREA FIRST TO OBSERVE THE FINAL RESULT.

WHITE CEMENT FACE CONCRETE STAINING

In some instances, the surface of the white cement concrete is stained with tannin stains from formwork and iron stains from exposed reinforcing attacked by rain. Both these types of stain either run or creep over the surface of the concrete, leaving a brown, blotchy pattern on the white concrete.

These stains usually remove with GEOCLENE, and in some cases with STEELCLENE. STEELCLENE is an organic acid, which is used mainly to remove rust off metal before painting. STEELCLENE has antioxidant properties, which inhibit steel from rusting for a long time after treatment.

STEELCLENE is not as harsh on cement surfaces or painted work as is GEOCLENE.

After complete drying of the white concrete surface, CALICONE sealer is recommended for application to the cleaned white concrete surface.

ALWAYS DO A TRIAL AREA FIRST TO OBSERVE THE FINAL RESULT.

PRODUCT LITERATURE AND SDS's

The products mentioned in this publication are manufactured and/or supplied by CALMARC CHEMICALS. There are brochures and SDS's available with more precise information on each product and its use. CALMARC CHEMICALS will assist with enquiries as to the most suitable of their products for a particular use.

FOR ANY APPLICATION, DO A TRIAL FIRST

CALMARC

CALMARC MANUFACTURE A COMPREHENSIVE RANGE OF PRODUCTS COVERING A VARIETY OF PPLICATIONS FOR NEW, REPAIR AND MAINTENANCE WORKS ASSOCIATED WITH THE BUILDING AND CONSTRUCTION INDUSTRIES. BELOW IS A SELECTION OF OUR PRODUCTS.
VISIT www.calmarc.com FOR MORE INFORMATION ON OUR COMPLETE RANGE.

LUBECRETE

- Synthetically produced cement dispersant.
- Lowers water/cement ratio.
- Enable lowering of cement while maintaining strength.
- Improves finish of cast concrete.

SCREEDBOND

- Imparts many qualities to cement containing mixes.
- Improves adhesion.
- Increases bond strength.
- Increases toughness, flexibility and heat resistance.
- Excellent salt and water resistance.
- Improves chemical resistance.
- Can be used as a waterproof tile adhesive.

DAMP-PEL RTU

- Clear, water dilutable water repellent.
- Allows surfaces to breathe, allowing water out but not letting any in.
- Excellent for limestone and reconstituted limestone.
- Excellent damp course injection material.

AQUAPHOBIC

- Micro emulsion silicone for ultimate water repellency.
- Allow surface to breathe.
- Seals micro cracks in ceramic glazes.
- Brilliant for sealing shower grout.
- Long lasting, UV stable.
- Excellent for sealing most substrates.

MXL

- High bond strength synthetic latex.
- Replaces water in mortar mixes for repointing/tuckpointing of brickwork.
- Combines, water retention and bonding agent for protection against adverse environmental conditions.

FLOWBOND

- Additive for self levelling screeds.
- The self levelling function of the screed is not affected but enhanced.
- FLOWBOND self levelling screeds are effective on damp concrete surfaces.
- FLOWBOND imparts damp resistance to the set self levelling screed.

HYPOBOND

- Pure acrylic emulsion adhesive for rebonding delaminated substrates.
- Can be injected by hand or compressor.
- Forms excellent bond with high degree of flexibility.
- Rebonds tiles, renders, flooring.

XPO-FINISH

- An alloy of a hard acrylic and silicone as an emulsion.
- Water based.
- Water and oil resistant.
- Easy stain clean off.
- Drive on sealer: coloured or clear.

NANOPLEX

- A nano micro acrylic particle emulsion.
- Sealing timber.
- A primer for coatings.
- Sealer for hardwall plaster.
- Highly penetrative.

SUPERSENSOR

- Super bonding acrylic adhesive for vinyl sheet, vinyl tiles and carpet tiles.
- Wide range of surface applications.
- High spread rate, up to 10m^2/litre.

ROOFGUARD

- Pure Acrylic roof coating.
- Water, UV and algae resistance.
- Available in all colours.

CALICONE

- Water based acrylic alloyed with silicone.
- Use on paving, concrete, limestone block.
- For anti-graffiti apply three coats.

MEMFLEX

- High build one pack waterbased coating.
- Water potable.
- High traffic capabilities.
- Impact resistant.
- Sound minimisation qualities.

CORROPEL

- Anti-corrosion coating.
- **NO SOLVENTS!!!** Waterbased acrylic system.
- Exceptional adhesion and environmental resistance.

FLEXIDECK

- Superior one pack high build waterbased anti-slip coating.
- Non sand anti-slip, giving softer feel while retaining excellent anti-slip qualities.
- Large colour range and excellent UV resistance.

PLICRETE

- Single pack cement acrylic waterproofing coating.
- Handles multi-directional water movement.
- Ideal for water containing structures (ponds, pots, swimming pools).

FIBRETAK/FIBREGLASS WATERPROOF MEMBRANE

- Excellent adhesion to almost any surface.
- No need for backing (back-a-rod) on corners.
- Tiling, screeding or coating post membrane are no problem.

PLIOXY

- A very hard acrylic water-based coating.
- Use as a coloured finish on driveways or carports.
- Finish coating on outdoor areas.

ELASTATAK

- For bonding cement finishes to painted surfaces.
- For bonding paint to internal cracked walls.

TUFSEAL

- General purpose pure acrylic sealer.
- Excellent roof sealer.

REPELL

- Mould resistant.
- Water resistant.
- Improves workability of wet grout mix.