X55 HI-SEAL PAINT

APPLICATORS BOOKLET

This is an important document. We strongly recommend that it be read carefully in its entirety before application of X55 HI-SEAL commences.

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X55 HI-SEAL APPLICATORS BOOKLET

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NOTE: ALSO APPLICABLE WHEN USING ACID (eg SPIRITS OF SALTS) FOR ETCHING A CONCRETE SURFACE TO REMOVE SURFACE WEAKNESS (LAITANCE):

Freshly mixed X55 HI-SEAL liquid or the powder as supplied may cause skin irritation. Prolonged exposure may result in alkaline burning and/or dermatitis.

Avoid contact with the skin and eyes by wearing suitable gloves, clothing and eye protection.

In the event of contact, wash skin immediately with clean water to help minimise possible irritation. If any material - powder or liquid gets into the eyes, wash immediately and repeatedly for *at least* 15 minutes with an eye wash liquid or simply clean running tap water.

If irritation persists, seek medical advice.

1.2 Respiratory Irritation

This powder product may contain a quantity of crystalline silica and therefore suitable respiratory safety equipment should be used when handling or mixing. When sanding, abrading or sawing materials coated with hardened X55 HI-SEAL, keep the material wetted with water to avoid the creation of potentially hazardous dust. *Always* wear suitable protective clothing, eye goggles and use suitable respiratory protection equipment.

2 INTRODUCTION

2.1 What is X55 HI-SEAL

X55 HI-SEAL is ***different to normal*** paint being supplied as a powder and requiring different preparation procedures and being a matte, essentially smooth, high build, hard but flexible mineral geo-paint. It is a 100% all acrylic polymer resin reinforced cementitious bound (cement containing) exceptionally long-life, fire retardant, water-resistant exterior surface coating. The product is available in white and a range of non-fading colours. X55 HI-SEAL has many features and benefits, is virtually universal in its potential uses and considered by many regular happy users over several years since its introduction to the market to be one of the best performing and longest lasting of virtually all other types of coatings.

X55 HI-SEAL is a cost-effective water wash-up, complete decorative and protective environmentally friendly wall, roof, floor, ramp, step and pavement paint finish of exceptionally high performance which is almost always applied to firm, sound, clean, relatively *smooth* and uniformly dampened surfaces. Some rough surfaces such as those having voids ('bug' holes) in off-form concrete may need to be filled with a suitable mortar or 'filler' prior to applying two (2) coats of X55 HI-SEAL.

Being supplied as a formulated powder containing high performance mineral binders and colouring pigments it requires easy but *thorough power* mixing into the specified, relatively *low* quantity of clean drinkable water just prior to application to make a high performance liquid paint.

2.2 Uses of X55 HI-SEAL

Note that X55 HI-SEAL being different to normal paint requires different procedures in its use – carefully read pages 6, 7 and 9.

It is almost universally suitable for the colourfully decorative, weather (and most other paint corroding and eroding forces) protective, high thickness original coating and rejuvenating of most building materials including those used for:

- exterior walls, roofs, pavements, floors, total structures etc where high abrasive wear or skidding traffic is expected or where exceptionally high resistance to weathering, wind driven rain, hydrostatic pressure, temperature extremes, salty atmospheres, salt water, chlorinated water, wide variations in air temperatures and corrosive chemicals is required eg swimming pools and other under water structures, factories, dairies, piggeries, operational mining sites etc
- asphalt and in situ concrete bridge decks, pavements (and their repair - particularly when in situ concrete is rain damaged during placement) and/or onto shotcrete stabilised embankments, slopes and tunnel walls, government, institutional and residential home swimming pool interiors and surrounds as well as virtually all other structures - especially those near the seaside
- suitably smooth, fully compacted, free of holes concrete masonry block work, brick work and natural stone masonry walls etc
- concrete columns, beams, factory precast concrete units/panels, tilt-up concrete walls, flagstones, pavers, roofing tiles, fibre cement sheets and planks, masonry columns, applied cement mortar wall plaster or 'render', concrete driveways (with or without the use of geometric design stencils), steps and ramps

Also for new work and all re-design, re-surfacing or refurbishment of:

- commercial, institutional and public buildings
- architectural heritage structure preservation - such as historically important or National Trust classified buildings, monuments, fountains, statues, obelisks
- car parks, school playgrounds
- heritage fauna/flora trails
- shared function pathways
- road line and traffic delineation marking, pedestrian crossings, traffic islands, street footpaths and sidewalks, chicanes, bus lanes, bicycle lanes etc
- New Jersey safety barriers and noise wall panels for roads, highways and freeways
- alpine buildings and marine tidal splash zone structures - especially lighthouses and wharves
- other structures/areas and materials where the use of an high solids, high build, salt spray, strong salt solution, impact and high/low temperature weather extremes resistance, and a safe-to-use, safe for the environment, *solvent-free* coating application exhibiting high performance and an anti-corrosive finish coating for ferrous metals properties are important.
- X55 HI-SEAL fits 'snugly' into sustainable development programs and policies because the product contains no toxic substances, is truly 'friendly' to the environment, is both thermally and acoustically insulative and retards fire and prevents flame spread when coated in two (2) coats or layers onto flammable materials.

2.3 Limitations

PLEASE TEST FIRST. TRIALS ARE ESSENTIAL. FREE SAMPLES MADE AVAILABLE UPON REQUEST.

X55 HI-SEAL is *NOT* recommended for use in the following situations:

- Due to potential application difficulties, which are likely to increase and compound outside the temperature range of 14^0C and 29^0C, it is recommended that application is carried out only within this range. Therefore for best results do *not* apply X55 HI-SEAL when the temperature of the ambient air or that of the surface to be coated is below 14^0C or above 29^0C. In high temperature conditions apply early or late in the day to avoid expected high temperatures of exposure to direct sunlight. In cold weather apply in the middle of the day when temperatures are expected to be relatively higher. Refer to the pamphlet 'Recommendations For Application of X55 HI-SEAL or the manufacturer for specific instructions related to temperature and weather conditions.
- If water spray curing is not done as is highly recommended (see page 9), avoid rain water falling onto the coated surface for at least 72 hours, particularly pooled water on horizontal surfaces *after* the final application coat of X55 HI-SEAL has dried as this may cause a temporary white often 'streaky' surface ‘bloom’ or ‘frosty’ whitening of residual surfactant which may prove difficult to remove quickly
- The strength, hardness and water resistance of X55 HI-SEAL increases with the removal of surfactant by means of adopting a procedure to effect combined washing and water spray curing, time and exterior weathering. Should the product not be fully activated after *thorough* mixing into the recommended proportion of drinkable water as recommended and/or the coating is not subjected to water spray curing and/or natural rain water washing and exterior weathering for six (6) months or more in areas having regular rainfall over an annual basis, eg used internally, it’s *early* resistance to running water and particularly to wet scrubbing is relatively low.
- DO NOT use this product where a uniform colour and texture is required UNLESS the applicator achieves complete uniformity in applying it to result in the following effects (See also section on Guarantee for Product *Colour* Uniformity on page 10).

  Effects to be achieved ONLY by complete uniformity of application -

  - a reasonably uniform, consistent applied thickness of each film coat or layer of X55 HI-SEAL.
  - a uniform degree of texture or smoothness of the finish obtained by consistently using only one application tool - for example - a suitable brush *only* instead of more than one tool or implement, for example do NOT apply X55 HI-SEAL to a particular area with say a roller and 'cut in' at the edges of that area with a brush application.
  - having a UNIFORM degree of SMOOTHNESS of the substrate surface to start with, for example, some concrete blocks and blockwork may not be uniform in smoothness/texture and may therefore require them to preferably be suitably filled or skim coated with a suitable mortar or ‘filler’ *before* applying X55 HI-SEAL to achieve uniformity of coating results.

Suitable large *test* areas of the prepared liquid product applied onto the ACTUAL surface (substrate) to be coated in the specified number of coats or layers and/or an architectural sample of suitably large size which is required to represent the final job should be fully evaluated and approved by the specifier or owner prior to actual use.

* **Although water penetration resistance is high and therefore relative staining and discolouration resistance from water borne staining compounds and pollutants may also be considered high, an applied X55 HI-SEAL coating may still be stained from various sources and compounds, therefore do NOT use this product in areas that may result in staining and resultant discolouration. Example: near trees that may cause lignum or sap/resin staining – particularly eucalypt trees.**

2.4 Colours

White, Off-White, Cream, 'Concrete' Grey, Moonlight Grey, Deep Grey, Charcoal, Yellow Ochre, Light Sandy Beige, Riverblend Beige, Light Red iron oxide, Terra Cotta, Cherry Red, Deep English Marigold, Aged Copper, Aubergine, Cinnamon Buff, Tan, Baron Brown, Dark Brown and at *higher prices,* genuine Cobalt Blue, Wedgewood, other permanent UV resistant (cobalt) blues, mauves and violets, Gum Leaf, Green Earth, Green Slate, Olive Drab and other green colouring pigments - all from the factory incorporation of Ability's range of UV resistant inorganic natural ‘earthy/ochre’ muted tone abilox® mineral oxide colouring powder pigments during production of the product.

Other colours may be made available for particular projects including strong bright colours obtained with Ability’s ‘duro®’ high chroma intense pigment colourants subject to the particular light fastness required from the various degrees of light fastness and the higher prices usually

3 COVERAGE RATE & STORAGE

3.1 Recommended Coverage Rate for Most Coating Jobs

The coverage rate and therefore the coating thickness of prepared liquid X55 HI-SEAL may be varied. However, the powder contents of the standard pack [20kg] *thoroughly* mixed with the recommended relatively low quantity of water, (10 litres water) to make 19 litres of liquid X55 HI-SEAL is used to typically coat and cover approximately 90 square metres of suitably prepared uniformly dampened, relatively smooth surface (first coat) depending on the intended coating thickness, density, porosity and texture of the concrete, asphalt or other *properly prepared* sound, firm and clean, flat surface to be coated. At 5m_/litre coverage per coat the coating thickness should be 200μm dry film thickness (dft). It the water content used originally for mixing with the powder product as supplied and is not reduced by evaporation and successfully retained by means of water spray curing, the dry film thickness will suffer no reduction and remain the same - 200μm. This is four times that of normal paint per typically applied coat.

It pays for application contractors to measure the areas to be coated in the number of coats required at the intended coating thickness and calculate the quantities of X55 HI-SEAL required carefully twice before quoting for a job. This should ensure that over and particularly under supply of the product at and within the time required to complete the work is avoided.

Note: If the surface to be coated is hot and not cooled with a uniform, cooling dampening application of clean, sprayed water, as is almost always recommended, coverage rates all things being equal will be lower – to result in higher film thicknesses which may be more difficult to keep even and uniform - to give a consistent, uniform result. Read page 2, 5 and 7 or seek manufacturer's advice.

3.2 Storage/Stability (of Powder)

Twelve (12) months in a full (no air space), airtight container.

4 SURFACE PREPARATION

THE PROPER *PREPARATION* OF THE SURFACE TO BE COATED IS *VERY* IMPORTANT.

ALL SURFACES are to be made SOUND, FIRM, SURFACE-STRONG, LAITANCE-FREE, DIRT-FREE, ACID-FREE, CHEWING GUM FREE, SMOOTH and DAMPENED prior to applying X55 HI-SEAL. An extra high pressure water blasting machine (3000psi *minimum* pressure) is recommended for normal surface preparation of most exterior materials - particularly concrete and asphalt. Following water blasting allow the surface to only *partially* dry to a *uniform* dampness before applying X55 HI-SEAL.

ALTERNATIVELY, if permitted by the applicable local government or Authority, a clean, non-contaminated *concrete* surface may be suitably prepared to make it surface-strong by it being effectively acid etched. For etching, carefully broom into the surface using a suitable stiff broom, a mixture of one (1) part 'SPIRITS OF SALTS' liquid (33% Hydrochloric Acid) added *carefully* to three (3) parts water. After 15 minutes, the broom applied acid is to be neutralised by applying dilute household CLOUDY AMMONIA - also at 1:3 volume dilution with water. Then with clean tap water *thoroughly* rinse the surface to remove all residue. When using acid, note the safety precautions on page 1 and printed on the label attached to the acid product container.

ALL existing asphalt (bituminous concrete, 'hot-mix' or 'black-top') pavements are to be made completely clean and free of all contamination. Application of X55 HI-SEAL to *newly laid* asphalt can often be effected after allowing only about 3 - 4 hours for it to cool without cleaning or surface preparation.

All timber/wooden surfaces are to be either already coated with a paint system in sound, firmly adhering condition which has been washed with sugar soap and *well* rinsed with clean water or in the case of un-coated wood, primed with a suitable good quality wood primer and allowed to dry well before being coated with two (2) coats of X55 HI-SEAL.

All bare metals are to be prime coated with a good quality metal primer suitable for the particular metal. The complete removal of any rust and corrosion from iron and steel by a suitable process such as acid pickling or shot blasting prior to priming is *highly* recommended.

All previously painted surfaces should be checked by the standard blade cutting/scoring and masking tape, pull off method for acceptable adhesion prior to thorough cleaning by means of sugar soap solution and thoroughly rinsing with drinkable water prior to applying two (2) coats of X55 HI-SEAL.

*** NOTE:** Chewing gum contamination may be removed by freezing it with sprayed liquid CO_2 gas and immediately scraping it off with a suitable scraping tool.

Chewing gum and other difficult to remove substances may also usually be removed with the correct use of very high pressure water blasting/cleaning equipment capable of 4000-6000psi (pounds per square inch) pressure. Water blasting units of these and higher pressures which also have the facility to use warm to hot water and preferably also – with the facility to include detergents and/or suitable chemical solvents such as xylene, toluol and acetone may also be used with facility.

5 MIXING INSTRUCTIONS AND POT LIFE

5.1 Mixing Instructions

DO *NOT* MIX AND APPLY X55 HI-SEAL IN TEMPERATURES BELOW 14^{0}C OR ABOVE 29^{0}C.

X55 HI-SEAL is a two pack but an easy to mix and apply, one step preparation coating product.

Add X55 HI-SEAL *powder slowly to the specified amount of clean, drinkable water - which is the reactant - preferably at a temperature of around 21^{0}C whilst mixing. It is a good idea to use ice water or hot water as necessary in cases of temperature extremes to bring the mix water to as close to approximately 21^{0}C as possible.*

Add 100 parts by weight of *powder* to only 50 parts by weight of *water*

OR Add 20kg of X55 HI-SEAL *powder to ten (10) litres of clean, drinkable water (500ml water/kg)*

OR Add two (2) parts by volume of "X55 HI-SEAL *to one (1) part by volume of water*

whilst stirring (a *little* of the powder at a time) with a *'heavy duty'* power mixer to which an 'egg-beater' type stirrer has been attached.

Mix *thoroughly* for at least eight (8) minutes *without* entraining air bubbles to a smooth, lump-free consistency. After mixing do NOT be tempted to add more water! *Wait* approximately (at 23^0) 20-30 minutes (activation period)*****. Then re-stir vigorously - preferably at a higher impeller speed - for 3-4 minutes and apply the mixed liquid coating without delay. Stir the prepared liquid occasionally during use to maintain fluidity - especially for the standard 20 kg pack or more quantities which after mixing, may, if left to stand, *appear* to set if left undisturbed. The prepared liquid paint is thixotropic which means that its consistency remains firm and 'stodgy' (viscous) while at rest but when moved by mixing, brushing, rolling etc flows easily. This feature helps to prevent 'run-down' of the liquid on vertical surfaces.

5.2 Pot Life (useable consistency time)

The time before the prepared X55 HI-SEAL liquid starts to thicken and harden in the container is approximately 5 hours at a liquid paint temperature of 21^{0}C. This period is shorter at higher temperatures, longer at lower temperatures. On very hot (or cold) days make sure that X55 HI-SEAL powder has been stored at a typical *interior room temperature* before mixing it well with clean, warm, hot (or cold - even iced) water that results in an ideal liquid *paint temperature* of approximately 21^{0}C - 23^{0}C.

After final stirring, use all of the mixed liquid product within four (4) to five (5) hours (at 23^{0}C). Occasionally re-stir during use. DISCARD ALL MIXED MATERIAL AFTER THIS APPROXIMATE TIME AS, DEPENDING ON THE TEMPERATURE AND THE AMOUNT MIXED, IT MAY BE STARTING TO SET. *DO NOT ADD MORE WATER*! DO NOT RE-TEMPER!

***** *This approximate activation period should be* ***proportionally*** *less when the temperature of the mixed liquid product is higher and longer when it is at a lower temperature.*

6 APPLICATION PROCEDURES

6.1 Painting Applications

Apply X55 HI-SEAL to absorbent and partially absorbent surfaces such as concrete which have been uniformly dampened with water (*not* saturated - and ensure that on horizontal surfaces such as pavements there is no pooled water. Re-dampen the surface if necessary as the work proceeds. The dampening procedure makes the product so much easier to apply and prevents the water used for mixing the product to a paintable liquid being absorbed into the surface to be coated.

Apply by the specified or *any* preferred suitable method and for uniformity of finish, *without* changing from one implement or method to another. For example: apply with a suitable good quality brush (on concrete a heavy duty *fence brush* eg 'Fence-Kota' may be preferred the type of brush), or a suitable soft hair broom, or a long nap roller, or a compressed air-assisted pistol spray 'gun' with hopper, or a peristaltic or other suitable spray unit or, after checking that it works properly, a suitable airless spray unit - using a 125 μm diameter or larger, super-hard spray tip. Whatever method/implement is used, **take care to achieve a uniform coating result with only one (1) method**.

6.2 Spray Applications

For spray application, using suitable, specialised equipment, carefully thin 19 litres of properly prepared liquid X55 HI-SEAL coating from a standard 20kg pack quantity with up to a ***maximum* of half a litre of water (*no* more)** and *re-mix well* before application of X55 HI-SEAL to prepared, sound, firm, cleaned and uniformly dampened areas at preferably, for maximum durability, slightly lower than the application rates recommended previously to give with a minimum of two coats an adequate film build (coating thickness) for maximum durability.

6.3 Plastering and Concreting Applications

When applied with a float or trowel, X55 HI-SEAL powder must be *intensively well mixed* with *much* less water **(about one third or one half or 33% to 50% less than has been indicated previously in this bulletin for brush, soft broom, roller and general application).** Patience whilst waiting for the completion of *thorough* preferably mechanical mixing is therefore required.

The first plastering, rendering application of the recommended two (2) coats or layers is usually a 'scratch' coat. To avoid plastic ("mud") cracking - particularly in hot, dry and/or windy weather - care must be taken to *thoroughly dampen* the surface to be coated with cool, clean water and NOT to apply the product to a thickness greater than about 1mm to 2mm.

Water spray curing should be carried out *gently* as soon as the last coat or layer of the applied material has set, ie immediately it has 'touch' dried and *continued* with regular copious applications of clean sprayed water over a period of 2-3 days. At this lower water content the float applied product will set faster than when used as a paint, ie in about 30 minutes at 23^0C.

6.4 Wash-up Of Application Equipment & Clean-up of Spillage & Unwanted Splashes

Clean application equipment and any unwanted splashes or spillage of the coating from areas surrounding the painting project with water *immediately*. Water solubility of the liquid coating reduces rapidly once the product begins to set and then harden. Once hardened the product is *extremely difficult* to remove! Protect window glass, metal siding, curtain walls etc on multi-material walls consisting of several different materials that are not required to be painted – especially when water spray curing the areas coated with X55 HI-SEAL paint.

To avoid the later process of cleaning the materials in duo or multi-material walls not required to be painted, the water spray curing procedure must be carried out efficiently and completely. Read page 9.

6.5 Hardening Properties

The rate of hardening after setting or 'touch' drying of the coating will depend on the prevailing weather conditions – particularly the prevailing relative ***humidity***, air and liquid paint ***temperature***. Typically, a touch-dry state is achieved within 60 minutes at 23^0C, and at the same temperature, a hard-dry state - usually suitable for light traffic (two (2) coats)- is reached in 6-8 hours. A period of water spray curing for 2-3 days commencing immediately the 'touch dry' state occurs - initially gently - is required for maximum hardness (hard 'cure'). Refer to page 9.

For the fastest rate of *ideal* hardening of the applied coating, *avoid* dry, windy and highly evaporative weather conditions. High humidity conditions *are* beneficial. During the application protect surfaces to be coated and those already coated from moisture evaporation by strong hot sunshine or drying winds by hiring or constructing a suitable temporary shade cloth structure, tent or sun/wind barrier. Commence water spray curing *immediately* the application of the final coat or layer touch dries. Gently at first, then as hourly time proceeds and hardening continues, more heavily.

At air temperatures below 23^oC these times will be EXTENDED and compounding as the

6.6 Non-Traffic Period

Where X55 HI-SEAL has been applied onto trafficked surfaces, please put up suitable barriers to keep all traffic off the newly coated surface for depending on the air temperature four (4) to six (6) hours or more. The actual traffic-free time will also depend on the weather, temperature of the water used to mix the powder product and that used in the recommended procedure of water spray curing. Extra heavy traffic such as fork lifts, very heavy vehicles etc, should *not* traffic the surface at full speed for about 12 hours whilst being water spray cured after setting or 'touch' drying at an air temperature of 23^0C and proportionally longer periods at lower temperatures. Example: about one (1) full day at an air temperature of 18^0C).

7 THE PROVISION OF WATER SPRAY CURING

7.1 Procedure of Curing by Water Spraying

The simple procedure of intermittent water spray curing – after the final coat has been applied - usually eliminates the possibility of any 'streaking', 'whitening', 'blooming', 'distressed' look, patchiness or other whitish discolouration occurring on the surface of applied 'X55 HI-SEAL' - especially if caused by early irregular wetting from rain. Apart from helping to harden the coating rapidly this procedure beneficially removes residual surfactant from the coating to eliminate this discolouration from occurring.

A white detergent – also called ‘surface active agent’ or simply ‘surfactant’ is contained within the set ('touch dried') 'X55 HI-SEAL' coating. To ensure freedom from a temporary 'streaking, 'whitening', 'blooming' caused by rainfall falling irregularly on its surface early in its long life, this surfactant should be removed from 'the Paint' by adopting the procedure of intermittent water spray curing.

Intermittent water spray curing should commence immediately after the final coat 'touch' dries (sets) by means of copiously spraying the surface with six (6) separate 10 minute hosings with clean tap water over a 2-3 day period.

There must be enough water to flush (run off) the painted surface at the end of each 10 minute period of wetting down. Sweep or squeegee any excess water off horizontal ‘the Paint’ coated surfaces before it dries. Allow the coated surface to dry before the next 10 minute hosing.

The mechanical strength properties, absolute water tightness and colour uniformity of the coating are optimised by adopting this procedure.

Therefore unless the abovementioned ‘distressed’ surface effects are required, the adoption of the procedure of water spray curing – particularly intermittent water spray curing using a hose or a suitable water sprayer, is highly recommended to be commenced - initially gently - immediately after the final coat of this special coating product 'touch' dries.

Avoid pooled water on pavements.

When intermittently water spray curing pavements and other horizontal work (compared to walls), do NOT leave water in pools on ‘the Paint’ coated surface – see above.

7.2 Clear Over-coating or 'sealing' - CAUTION

Although, from a durability, colour permanency and water proofing point of view, it is absolutely ***NOT*** necessary, the applied product may be over-coated with at least two coats of a suitable transparent clear coating (such as Ability’s ‘AQUA-DURA’ semi-gloss *water-based* 100% acrylic clear concrete coating).

‘AQUA-DURA’ will change the matte appearance of applied 'X55 HI-SEAL' to that of a semi-glossy to glossy appearance depending on the number of coats applied - and therefore to make colours appear more intense - especially dark colours and to provide a 'wet look'. However, clear over-coating of 'X55 HI-SEAL’ should preferably only be carried out *after* a 2 day period of efficient intermittent water spray curing as outlined above followed preferably by a 6 to 12 month period of external weathering where over this total period, both clean tap and natural rainwater have been allowed to wash the surface of any retained soluble material. We suggest a weathering period of at least six months together with the removal of any surface dust and/or contaminants and drying before clear coating.

8 THE IMPORTANCE OF ACHIEVING A FINISH HAVING A UNIFORM TEXTURE & GUARANTEE FOR COLOUR UNIFORMITY OF THE PRODUCT AS SUPPLIED

Although essentially protective X55 HI-SEAL may be regarded as decorative. However, it may not for various reasons related to the application procedures/methods, result in a finish of absolute uniformity of colour and texture. A complaint of lack of perceived colour uniformity may occur because of a textural difference of the applied coating in one area compared to another, rather than an actual colour difference. This textural difference could be the result of using more than one implement to apply and/or finish the work. For example, a roller may have been used to apply the coating to most of the area and a brush used to 'cut in' at the edges. This change from one application implement to another will usually result in a different texture and although often only slight, may under a given angle of light, give the impression of a different colour. Unless different textures are required such as would result from a rough 'bagging' application.

IT IS THEREFORE IMPORTANT TO APPLY THE PRODUCT UNIFORMLY – TO RESULT IN A UNIFORM TEXTURE - USING ONLY ONE TYPE OF IMPLEMENT.

Notwithstanding this possibility, Ability Building Chemicals Co as the manufacturer guarantees that the colour in one unit pack of X55 HI-SEAL as designated on the pack is unequivocally uniform and consistent.

Ability Building Chemicals also guarantees that the colour in one batch (typically 10 x 20 kg packs) as designated clearly by batch numbers on the pack, is also absolutely uniform and consistent.

In addition, Ability Building Chemicals guarantees that a designated specific colour of X55 HI-SEAL supplied will vary no more than a total of 5% (± 2_%) or 1/20 from its Colour Standard of that colour designation from batch to batch of this quality coating product.

Therefore any non-required variation in uniformity and consistency of application and as a result the perceived colour and/or texture of the applied coating at a particular coating project is an issue applicable to the specifiers and/or the applicators and clearly not the manufacturer.

For a painting job to have *complete uniformity* of colour *and* texture X55 HI-SEAL coating must have been applied uniformly by a single method using a single implement to a uniformly smooth surface. Do NOT for example apply the coating with a roller and then 'cut in' at the edges with a brush.

Before using or specifying the use of X55 HI-SEAL, reference should be made to the Australian and New Zealand Standard "Guide to the Painting of Buildings", AS/NZS 2311:2000.

In spite of the scores of issues applicable to the successful protection and decoration of various surfaces by painting (as outlined in the above Standard), X55 HI-SEAL if used intelligently according to our recommendations and the requirements of the specifiers or owners can provide a coating project which gives complete satisfaction.

A residual white 'detergent' or surfactant (surface active agent) is contained within a set ('touch dried') X55 HI-SEAL coating. To ensure freedom from a temporary leached, 'whitening', 'blooming', 'streaked' effect occurring on the coating's surface caused by inconsistent rainfall or accidentally applied water leaching this surfactant out early in its long life, the surfactant may be easily and completely removed from the applied coating by adopting the procedure of constant water spray curing. This procedure should commence as soon as the second or finish coat has 'touch' dried and continue for two (2) days.

REMEMBER that with most paints - particularly high build, texture paints such as X55 HI-SEAL, an apparent variation in colour of the finish coat may result due to textural differences. If complete uniformity of colour is required at a particular location X55 HI-SEAL must be:

- applied to a base material (substrate) that is completely uniform in smoothness (or in the case of bricks or blocks - of preferably a machine made, smooth, uniform texture).
- Applied in a two (2) coat coating system, without changing the application method, in an absolutely uniform and consistent way.

9 DISCLAIMER

TEST FIRST *BEFORE* ACTUAL USE. TRIALS ARE ESSENTIAL!

These suggestions, recommendations herewith and other relevant product data for X55 HI-SEAL are based on information we believe to be reliable. They are offered in good faith, but as conditions and methods of use of our products are beyond our control, are without guarantee. We recommend that the prospective user, specifier, owner or purchaser determine the complete suitability of this and all our products and suggestions/recommendations for their use and purpose before adopting them on a commercial scale. Free samples of all Ability products are always available upon request for this purpose.

PLEASE READ THESE IMPORTANT NOTICES:

All information is given in and the ability (the manufacturer) product(s) are supplied with, good faith but without warranty for the final composite product or material in which it/they is/are used or an applied ability coating as their use is beyond the manufacturer's control. The manufacturer is not responsible for any loss or damage arising from failure to follow their recommendations for use.

It is the user's/purchasers' responsibility to ensure that complete suitability of any of these products, for any use, be completely confirmed by thorough prior testing and evaluation. The information submitted in this and other specific product publications is based on current knowledge and experience. In view of the many factors which may affect processing. Application and the results obtained this data and others do not relieve processors and users from the responsibility of carrying out their own tests and experiments, neither do they imply any legally binding assurance of certain properties or suitability for a specific purpose. It is also the responsibility of those to whom we supply our products, to ensure that any proprietary rights and existing laws and legislation are observed.

ALSO, it is suggested that prior to using X55 HI-SEAL, applicators carefully *re-read* the Ability publication 'RECOMMENDATIONS FOR THE MIXING & APPLICATION OF X55 HI-SEAL'.

CARING FOR 'X55 HI-SEAL

When required, clean areas coated with 'X55 HI-SEAL' with a mild detergent solution (eg two (2) caps of Cussons 'Morning Fresh' dishwashing detergent in a nine (9) litre bucket of luke warm water) and lightly scrub the surface with a suitable soft brush or broom.

Follow this with a thorough rinsing, using copious amounts of fresh water to remove all residual detergent.

10 APPENDICES

10.1 Typical Properties

Typical properties of prepared X55 HI-SEAL when *thoroughly* power mixed with the recommended low quantity of clean, drinkable water specified to a paintable *liquid and* then allowed to activate for about 10 to 15 minutes at 23°C and 50% RH (relative humidity), re-mixed, applied, allowed to 'touch' dry - typically in about 45 minutes, and then to fully harden by means of a thorough water spray curing regime as outlined in this publication followed by natural exterior weathering for six (6) months in Melbourne, Australia, are listed below. The recommended proportions are 50% clean drinkable water to 100% X55 HI-SEAL powder (2 parts powder added to 1 part water by volume or 0.50:1 by weight). The Properties and Application Data are as follows:

PROPERTY	TYPICAL VALUES
Appearance of liquid:	White or coloured, easy to apply, brushable, *rollable* or '*broomable'* and sprayable (with suitable spraying equipment) high build thixotropic liquid paint.
Specific gravity:	1.4
Solids by weight:	100% if cured (curing means water retention - achieved by preventing the evaporation of the mix water in the applied coating *immediately* after application and touch drying by means of hosing for 5-10 minutes with clean tap water every hour for two days).
pH (approx):	11.3
UV resistance: Water resistance of hardened film:	Outstandingly excellent.
Resistance to chalking:	Outstandingly excellent.
Resistance to abrasion and impact:	Outstandingly excellent. (Abrasion Resistance Index: 1.7 on a 6 to 1 scale(where 6 is poor and 1 is virtually absolutely abrasion resistant).
Skid resistance to Test Method Q704-1982:	61, outstandingly excellent where 40 is usually acceptable and 50 is usually regarded as excellent
Flammability:	The powder as supplied is non-flammable. X55 HI-SEAL prepared from this is water based, non-flammable and non-explosive.
Fire retardancy of hardened film	See below
Surface temperatures of hardened paint film in service:	-20°C to 150°C (can be higher)
Shelf life of powder - as supplied:	12 months in original unopened container.
Salt resistance of hardened film (Taywood Engineering Limited chloride ion ingress test):	Very good.
Chemical resistance: 1-5 scale:	Excellent, 5-4.5.

In some performance tests carried out by AMDEL Industrial Services, Adelaide, South Australia in June - October 2001 on a similar product having a similar formula 'the Paint' to the following Standards:

Substrate	Test	Test Method
Concrete Tile	Chemical Resistance	ASTM C267-1982 "Standard Test Method for Chemical Resistance of Mortars, Grouts and Monolithic Surfacings"
'Hardiflex'*	Heat Resistance	ASTM D2485-1991 "Standard Test Methods for Evaluating Coatings for High Temperature Service"
'Hardiflex'*	Flammability & Fire Retardancy	ASTM D1360-1995 :"Standard Test Method for Fire Retardancy of Paints"

it was found with two (2) applied coats each of 250μm thickness per coat of Ability's 'the Paint' product:

- 'the Paint' has sustained high temperature resistance to 180^0C
- 'the Paint' is fire retardant, has NIL flammability and NIL flame spread potential
- 'the Paint' has good resistance to 10% solutions of common industrial acids (hydrochloric and sulphuric acids) and industrial alkali (sodium hydroxide) in exposures of less than seven (7) days
- 'the Paint' has good resistance to typical automotive engine oils in exposures of less than 28 days
- 'the Paint' has high resistance to automotive brake fluid in exposures less than 28 days
- 'the Paint' has high resistance to unleaded petrol (gasoline) in exposures of less than 28 days

* 'Hardiflex' is a trade mark of James Hardie Limited

PLEASE NOTE:

1. With some pigments used to colour 'the Paint' and X55 HI-SEAL there may be a colour change at elevated temperatures eg: yellow and black iron oxide pigments change at 180^0 to the alpha red iron oxide form. Permanency of colour if important in these environments may be provided with the use of *alternative* pigments if required. Further information is available upon request.
2. Good regular housekeeping such as daily cleaning procedures used to keep the surface upon which X55 HI-SEAL is coated, clean and free of paint degrading liquids and contaminants will naturally assist its very long term performance.
3. **OTHER PERFORMANCE TEST DATA**

   Results from other performance testing of X55 HI-SEAL conducted by the University of Queensland laboratories and BHP's Steel Ltd's Colorbond® laboratories are also available upon request.

APPLICATION DATA	
The air temperature during application (*important*) is best at:	21^oC (68^oF). Do NOT use if a *minimum* air temperature of 14^0C or 29^0C *maximum* is exceeded.
Pot life (the time that the prepared liquid product remains at a paintable consistency):	Approx 5 hours at 21^0C (68^oF) for a 19 litre quantity. Proportionally longer at lower temperatures and lower volumes. Shorter at higher temperatures and greater volumes.
Setting time (touch dry) at 23^0C and 50% rh:	Approx 45-60 minutes.
Hardening (curing) times after setting at 25^oC and 50% RH:	At 23^oC the coating following setting in approximately 45-60 minutes after application is typically hard enough with water spray curing in 9 hours or less for successfully withstanding foot and vehicular traffic. Medium to *full* hardening time: (73% of full hardening approximately): 48 hours at 23^0C and 50% rh (relative humidity) with regular water spray curing. Absolute hardening and flexibility by means of natural rain water washing and external weathering in areas having regular annual rainfall: 6-12 months approximately.