

duro paint™

APPLICATORS' MANUAL



STIPPLE



MATTE



LOW SHEEN

SEPTEMBER 2009



SUBSIDIARY OF AUSTRALIAN OXIDES PTY LTD
FINE COLOURS & PRODUCTS FOR CONSTRUCTION

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1. **duro paint™ DESCRIPTION:**

- ✱ **duro paints™** are special, out-of-the-ordinary, two pack but one step preparation paints supplied as ready-to-mix-into-water powders.
- ✱ **duro paint™** products are clean air, polymer-modified, water-based, inorganic, mineral surface coatings that are exceptionally durable, UV resistant, consistent in colour, and suitable for exterior/interior applications.
- ✱ The **duro paint™** range are all long-life, waterproof, clean air coatings, with a focus on Environmentally Sustainable Development (ESD).
- ✱ Extremely low in VOCs (Volatile Organic Compounds), and they have no unpleasant odours.
- ✱ Unlike some normal paints, they do not contain evaporative toxic chemical solvents, or emit harmful 'greenhouse' gases.
- ✱ Available in a range of 'standard' colours. Custom colours to match a specific project can be supplied.

2. **duro paint™ STIPPLE:**

- ✱ Previously known as 'the Paint', **duro paint™ STIPPLE** is a colourfast, matte finish coating that has a subtle stippled texture with very low slip/skid hazard.
- ✱ Suitable for use on both vertical and horizontal surfaces, **duro paint™ STIPPLE** provides a protective and decorative coating that is highly resistant to wear and impact, for walls, columns, floors, and roofs, stairs, below ground pools and surrounds, and both concrete/asphalt ramps and pavements.
- ✱ **duro paint™ STIPPLE** is ideal for structures and items that will be permanently submerged in water, chlorinated water or sea water.
- ✱ **duro paint™ STIPPLE** helps to improve both thermal and acoustic insulation properties whilst acting as an effective fire retardant.

3. **duro paint™ MATTE:**

- ✱ Developed specifically for applications requiring a smooth matte finish, **duro paint™ MATTE** provides exceptional adhesion, and is both long-lasting, protective, and decorative.
- ✱ It combines outstanding durability, long-term performance, 'ceramic' hardness with a highly resilient, flexible film, and an attractive, low slip, low skid, wear resistant finish.
- ✱ It is UV resistant, weather-resistant, watertight, fire retardant – preventing flame spread of flammable materials, and resists attack by highly damaging salt, and sulphate solution ingress.
- ✱ It is ideally suited to areas or items that will be permanently submerged in fresh or salt water including pools, ponds, water features, piers, mooring and marinas.

4. **duro paint™ LOW SHEEN:**

- ✱ Specifically developed for 'medium build', ultra-smooth, low sheen, two coat applications over smooth prepared surfaces or as a very smooth, low sheen finishing coat over other freshly applied set **duro paint™** surfaces.
- ✱ **duro paint™ LOW SHEEN** acts as an effective fire retardant for a variety of substrates including wood and plastic materials.

5. **duro paint™ APPLICATIONS:**

duro paint™ is best applied in high humidity conditions to avoid it drying out. It is suitable for preferably a two (2) coat application, generally without a primer to:

- ✱ Concrete
- ✱ Mortar
- ✱ Asphalt and bitumen emulsions
- ✱ Fibre cement panels, planks, and other products
- ✱ Masonry
- ✱ Wood – preferably after a quality wood primer has been applied
- ✱ Iron, steel – after an all-metal, or anti-corrosive primer has been applied, and other suitably prepared metal surfaces
- ✱ Previously painted surfaces that have abraded/sanded, and cleaned with sugar soap

6. **duro paint™ COLOUR RANGE:**

- ✱ Sand
- ✱ Sandstone
- ✱ Mocha
- ✱ Sage
- ✱ Eucalyptus
- ✱ Dusty Brown
- ✱ Tuscan Red
- ✱ Chocolate
- ✱ Tan
- ✱ Brown Earth
- ✱ Dark Chocolate
- ✱ Charcoal

Refer to our **duro paint™** colour brochure.

7. OTHER COLOURS BY REQUEST:

- ✿ Orders for special colours outside the standard range will be made available on request, and are more expensive. The price will vary according to the special custom manufacture required, and the cost of pigments used.
- ✿ These colouring pigments colours may include Cobalt Blue, Wedgewood, Gum Leaf, Green Earth, Green Slate, Olive Drab Base, Cherry Red, and colours that specifically match any of the 52 colours in Ability's 'abilox[®]' mineral oxide colouring pigment range. Refer to 'abilox[®]' Colour Specifier colour chart.

8. RECOMMENDED COVERAGE RATES:

- ✿ The **duro paint™** range when each is mixed as recommended is designed to cover a minimum of 30M² with two coats from a standard pail packing as supplied.
- ✿ **duro paint™ STIPPLE** is provided as a 20kg pack in a 20 litre pail.
- ✿ **duro paint™ MATTE** is provided as a 12kg pack in a 15 litre pail.
- ✿ **duro paint™ LOW SHEEN** is provided in a 10kg pack in a 15 litre pail.
- ✿ **duro paint™ STIPPLE** covers 3 – 3.5 M² per kg per coat, the coating dry film thickness (dft) thickness should be 250µm. For two (2) coats of the product this is five times the thickness of normal two (2) coat paint.
- ✿ **duro paint™ MATTE** covers 5 – 5.5m² per kg per coat, the coating dry film thickness (dft), should be 200µm. For two (2) coats of the product this is equivalent to four (4) times the thickness of two coats of normal paint applied with two (2) coats.
- ✿ **duro paint™ LOW SHEEN** covers 6 – 6.5m² per kg per coat, the coating dry film thickness (dft) should be 150µm. For two (2) coats of the product this is three times the thickness of normal paint applied with two (2) coats.
- ✿ Coverage rates will vary depending on the smoothness or roughness of the surface, its temperature and absorbency. It is recommended that the area should be moistened uniformly with cool, clean sprayed water before painting.

9. STORAGE/STABILITY OF duro paint™ POWDER:

- ✿ The shelf life of **duro paint™** powder is a minimum of twelve (12) months in the airtight container as supplied, stored in a cool, dry area.

10. SURFACE PREPARATION:

- ✿ The proper preparation of the surface to be painted 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 any of the **duro paint™** range.
- ✿ An extra high pressure water blasting machine (3,000psi minimum pressure) is normally recommended for surface preparation of most exterior materials – particularly concrete and asphalt.
- ✿ On completion of the water blasting preparation, allow the surface to dry only partially to a uniform dampness before applying **duro paint™**.
- ✿ Alternatively, if allowed by local authorities, an acid etch may be used on cement based materials.
- ✿ Dress in the correct safety clothing – eye goggles, rubber boots, and protective overalls, and carefully prepare the etching liquid by adding acid to water (not the reverse), in a plastic watering container, a mixture of:
 - * One (1) part ‘Spirits of Salts’ liquid (33% hydrochloric Acid); and
 - * Three (3) parts water
 and carefully broom into the surface.
 - ✿ After 15 minutes, neutralise the acid etching by applying a dilute household Cloudy Ammonia (1 part Cloudy Ammonia to three (3) parts water).
 - ✿ Using clean tap water, thoroughly rinse the surface to remove all residue.
 - ✿ When using acid, take careful note of the safety precautions printed on the label.
- ✿ Existing asphalt (bituminous concrete, ‘hot mix’ or ‘black top’) pavements need to be completely clean and free of all contamination before applying TWO (2) coats of **duro paint™**.
- ✿ Allow 3 to 4 hours for newly laid asphalt to cool down before applying **duro paint™**.
- ✿ Previously painted surfaces will need to be in sound condition, suitably abraded with sand, glass, or wet-n-dry paper, washed down with sugar soap and well rinsed with clean water before applying **duro paint™**.
- ✿ Un-coated wood is preferably primed with a good quality wood primer, and allowed to dry before being coated with TWO coats of **duro paint™**.
- ✿ Bare iron and steel will need to be void of any rust or corrosion and primed with an appropriate primer (all metal primer or anti-corrosive primer) before painting with any paint in the **duro paint™** range.
- ✿ Silicone or polyurethane sealants classified as ‘paintable’ can be coated. Check the manufacturers’ instructions before painting.
- ✿ Chewing gum contamination is best removed by freezing it with sprayed liquid CO₂ gas and immediately scraping it off with a suitable scraping tool.

II. SAFETY RECOMMENDATIONS:

- ✿ Avoid contact with the skin and eyes by wearing suitable protective gloves, clothing and eye protection.
- ✿ **duro paint™** a powder product which may on its own, and when mixed with water cause skin irritation and may contain crystalline silica. When handling or mixing, avoid making dust, and wear suitable respiratory safety equipment.
- ✿ When sanding, abrading or sawing materials coated with hardened **duro paint™** keep it wetted with water to minimise dust and wear suitable respiratory protective equipment.
- ✿ 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.

12. MIXING INSTRUCTIONS:

Where possible, two (2) operators are used to prepare **duro paint™** liquid, with one (1) operator adding the **duro paint™** powder, a little at a time into the specified amount of drinkable water, whilst the other is operating the mixer.

- ✿ It is preferable to mix or apply **duro paint™** in air temperatures between 14°C and 29°C.
- ✿ Add the **duro paint™** powder to the specified amount of clean water at a temperature around 23°C. It is a good idea to use ice water or hot water as necessary to bring the mix water to as close to 23°C as possible.
- ✿ For **duro paint™ STIPPLE** add 20kg of powder to 8 litres of clean water (400ml of water per kg).
- ✿ For **duro paint™ MATTE** add 12kg of powder to 6 litres of clean water (500ml of water per kg).
- ✿ For **duro paint™ LOW SHEEN** add 10kg of powder to 8.5 litres of clean water (850ml of water per kg).
- ✿ Stir the powder into the water a little at a time with a heavy duty power mixer to which an 'egg beater' type stirrer has been attached.
- ✿ Mix thoroughly for at least the times indicated below, (printed onto the label) to achieve a lump free, smooth consistency without air bubbles.
- ✿ After mixing, DO NOT add more water. Allow to stand and activate.
- ✿ While activating, prevent the liquid from drying by covering the mixed material.

13. ACTIVATION & RE-MIXING TIME:

- ✿ With a **duro paint™ STIPPLE** mix at for four (4) minutes and activate the mixture for approximately **10 MINUTES**.
- ✿ With a **duro paint™ MATTE** or **duro paint™ LOW SHEEN** mix for four (4) minutes then wait approximately **30 MINUTES** to activate the mixture.
- ✿ Re-stir vigorously, (preferably at a higher impeller speed) for three (3) minutes and apply the mixed liquid coating without delay.
- ✿ Stir the **duro paint™** mixture occasionally to retain its fluidity and prevent it becoming too viscous.

14. ACTIVE POT LIFE – TIME OF USABLE CONSISTENCY:

- ✿ **duro paints™** will start to thicken and harden in the container in three (3) hours at 23°C
- ✿ This period is shorter at higher temperatures and longer at lower temperatures
- ✿ On very hot (or cold) days, ensure **duro paint™** powder is stored at a typical interior room temperature before mixing
- ✿ After final mixing, use all of the mixed liquid product within three hours – occasionally re-stirring the mix
- ✿ Discard all mixed material after the three hours. Do not add more water or re-temper

15. PAINTING APPLICATIONS:

- ✿ Avoid **duro paint™** from drying out at all times until it has completely hardened.
- ✿ Absorbent and partially absorbent surfaces must be uniformly dampened with water before application of **duro paint™**
- ✿ Ensure that there is no pooled water on horizontal surfaces. Remove with a broom or squeegee.
- ✿ To ensure uniformity of texture, (and perceived colour), always use the same implement, and method of application throughout: such as either brushing, brooming, rolling, compressed-air assisted spray gun or other type of spraying equipment. Do not for example, apply with a brush at the edges, and 'fill in' with a roller.
- ✿ Apply two coats of **duro paint™** to ensure maximum durability. Apply the second coat as soon as possible after the first.
- ✿ It may be helpful to dampen the surface of the first coat before applying the second.

16. SPRAY APPLICATIONS:

- ✿ **duro paint™** pre-prepared from the standard packs for each type, can have up to a maximum of half a litre of extra water added to lower the viscosity and assist in spraying applications.
- ✿ After adding water re-mix well before spraying. Spray on to surfaces that are sound, clean and uniformly dampened.
- ✿ For maximum durability, with higher sprayed coverage rates, increase the number of passes to maintain the recommended thickness.

17. PLASTERING & CONCRETE TROWEL APPLICATIONS:

- ✿ For application with a float or trowel, **duro paint™ STIPPLE** can be used by mixing the powder with approximately 25% less water, and it must be intensively well mixed.
- ✿ To achieve a consistent trowellable mix, mechanical mixing is recommended.
- ✿ The first coat 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 apply **duro paint™ STIPPLE** any thicker than 1mm – 2mm followed by water spray mist curing.

18. WATER SPRAY CURING:

- ✿ To remove soluble surfactant from the coated surface, water spray curing should be carried out intermittently, gently at first and as soon as the second coat of applied material has set.
- ✿ Commence about one (1) to two (2) hours after the second coat is 'touch' dry, by means of copiously spraying the surface: with six (6) separate 10 minute hoses with clean tap water over a one to two day period.

19. PROCEDURE OF WATER RETENTIVE CURING BY WATER SPRAYING:

- ✿ Intermittent water spray curing prevents the evaporation of the mix water in the coating to complete the hardening two pack reaction, and eliminates the possibility of any streaking, whitening, blooming, patchiness or other whitish discolouration occurring.
- ✿ It helps to harden the coating rapidly and removes residual surfactant that causes discolouration.
- ✿ There must be sufficient water to flush the painted surface after each ten (10) minute period of wetting down.
- ✿ Sweep or squeegee any excess water off horizontal **duro paint™** surfaces before it dries.
- ✿ Allow the coated surface to dry before the next 10 minute hosing.
- ✿ Water spraying will enhance the adhesion and mechanical strength properties, provide absolute water tightness and colour uniformity throughout.

20. WASH UP:

- ✿ Clean application equipment and any unwanted splashes or spillages immediately with water. Once hardened the product is extremely difficult to remove.
- ✿ Water solubility of the liquid reduces rapidly once the product begins to harden. Once hardened, the **duro paint™** is extremely difficult to remove.
- ✿ As **duro paint™** hardens effectively underwater do not leave equipment to soak in water.

21. HARDENING PROPERTIES:

- ✿ The rate of hardening after setting or touch drying will depend on relative humidity, air and liquid paint temperatures as well as the general weather conditions.
- ✿ Typically, a touch dry state is achieved within 45 minutes at an air temperature of 23°C and 50% relative humidity (RH). A hard state occurs within 3 to 5 hours, at this temperature and humidity, and ideally if the coatings mix water is prevented from evaporating.
- ✿ For the fastest rate of ideal hardening, avoid dry, windy and high evaporative conditions, and commence intermittent water spray curing, initially gently as soon as the last coat has 'touch' dried.

22. NON-TRAFFIC PERIOD:

- ✿ At an air temperature of 23°C and 50% humidity, keep all traffic off the newly coated surface for four (4) to six (6) hours after hardening.
- ✿ Extra heavy traffic such as fork lifts should remain off the coated surface for 12 hours and at lower air temperatures, even longer.

23. USING A CLEAR OVER COATING:

- ✿ It is NOT necessary to use a clear over coat to seal **duro paint™** to make it watertight.
- ✿ Clear coatings such as Ability's *AQUAdura* will change the matte appearance of **duro paint™** to a gloss or semi gloss depending on the number of coats applied. It may give colours the 'wet' look – particularly to dark colours.
- ✿ The application of two (2) coats of *AQUAdura* over **duro paint™** will help to prevent dirt accumulation and maintain a pristine look.

24. ACHIEVING A UNIFORM FINISH:

- ✿ The applicator controls uniformity of colour and texture.
- ✿ Perceived colour variations may occur because of a textural difference of the applied coatings in an area, rather than an actual colour difference.
- ✿ Textural differences usually occur where more than one implement is used to apply or finish the work.
- ✿ It is important for the applicator to apply **duro paint™** uniformly to result in a uniform texture.
- ✿ Ability Building Chemicals Co guarantees the absolute uniformity and consistency of its **duro paint™** colour batches.
- ✿ Ability Building Chemicals Co guarantees no more than a variation of 5% ($\pm 2.5\%$) from its colour standard for the product.

25. STANDARD CODE:

- ✿ Reference should be made to the Australian and New Zealand Standard “Guide to the Painting of Buildings” – AS/NZS 2311:2009.

26. TRIALLING **duro paint™**:

- ✿ Free samples of all Ability Building Chemicals Co products are available upon request.
- ✿ It is recommended that the purchaser/end customer determine the complete suitability of **duro paint™** before purchase.
- ✿ It may also be of assistance to applicators to read the Ability publication ‘Recommendations For The Mixing & Application of the **duro paint™**’ range.

Ability in inventing and providing the many benefits of **duro paint™** expects that it will bring complete satisfaction to all involved in projects involving its use.

Help and further information is available by calling us from 7.00 am to 5.00 pm on PH: (03) 9457 6488 or go to our website: www.abilityproducts.com.au.