

What Paint?

Wherever you look, you will see painted surfaces – vehicles, ships and boats, aircraft, buildings, furniture, appliances, toys and more. You name it, paint has probably been applied to its surface. The question is: What type of paint was applied and why was that particular type of paint used?

We apply paint for a variety of reasons. Naturally, one is decorative – an attractive paint job can work wonders, making the item far more attractive than it would otherwise be. Another reason for applying paint to something is to protect it from the sun's harsh rays, water, corrosion, etc. The object will then last a great deal longer than it otherwise would have. In the world of packaging, certain colours and types of paint are used to enhance the product's appeal.

What is paint?

Paint essentially contains three ingredients: pigments and extenders, the vehicle or medium (often called the binder), and the solvent or thinner. In some cases, paints for application on masonry can have additives such as a fungicide, to protect walls in damper situations against fungus or a mildew inhibitor. These additives are useful additions to paints used in bathrooms, for instance, where hot and humid conditions are almost tailor-made for mildew. So, in short, paint is a pigmented liquid that protects and beautifies whatever surface it covers and may contain additives for specific applications.

- **Pigment** – The colour of paint comes from its pigment (or pigments) that can be white or coloured powders, either natural or synthetic. Common pigments include oxides for red, yellow and black, titanium dioxide for white, and other organic chemicals that produce blues, greens, reds and yellows. A quick look at a colour display shows the range of colours and hues that these pigments can produce. Apart from giving the paint its colour, however, pigments can also do the following:

1. They strengthen the binder
2. They can enhance corrosion resistance
3. They can enhance protection against mildew
4. They can enhance protection against weather conditions

- **Extender** – An extender is an inert powder that adds 'body' to the paint and. As the name implies, it extends the area covered per litre.

- **Binder** – The binder is rather like the 'glue' in the paint. It holds the pigment in place and provides the adhesion of the paint film to the surface, and much of the protection the paint provides to the surface. When exposed to the air when the paint is applied to a surface, the binder dries, becoming a solid by evaporating, oxidising or polymerisation (chemical reaction) – or a combination of all three and binds the pigments and extenders together. The binder may be an oil-water emulsion, acrylic or vinyl resin, linseed oil, vegetable oil or synthetic resin, such as an alkyd.

- Solvent – The solvent, which can be a white spirit, alcohol, acetate, ketone or water, is what keeps the product in a liquid form so that it can be applied.
- Other ingredients – Paints used in marine applications can have ingredients added in formulations designed to combat marine encrustations; there can also be special ingredients to help paint resist the sun's UV effects, and there are even paints that provide what is called a nano-ceramic coating – an extremely hard finish designed for use on cars, for example.

Types of paints and their uses

Now that you know a bit about what goes into various types of paint, the next thing to find out is what paint you need to use for a particular job. The paint expert in your local Mica's paint department will be able to advise you on specific applications, but the following will give you an idea.

- Enamels contain little pigment, provide a glossy sheen and are often used in kitchens and bathrooms which can get warm and humid. Enamels' glossy sheen provides waterproof protection and is easily wiped down.
- Fire-retardant paints have an oil or oil-resin base. When subjected to fire, chemicals in the paint's formulation cause it to blister, thus creating an insulating barrier between the fire and the surface below.
- Heat-resistant paint is designed for use in applications where high temperatures are the norm, such as combustion engines. Those with alkyd-resin bases are used for moderately hot surfaces while those with a silicon-resin base are used for higher temperatures. Very hot surfaces use a metallic pigment mixed with varnish. Under the intense heat, the varnish evaporates, leaving only the pigment bonded to the surface.
- Lacquers, as applied to vehicles, provide a high-gloss, hard-wearing and weather-resistant coating to metal.
- Like oil-based products, latex paints are suitable for indoor or outdoor application.
- Metal paints protect ships, boats, outdoor furniture and metals in other situations from rust and corrosion. There are paints available that can be applied directly to metal – even rusted metal – without the need for a primer. In these cases, loose rust and corrosion is brushed or sanded off and the paint is applied directly to the surface.
- Metallic paint contains aluminium or bronze powder; particles reflect light for a metallic finish.
- Oil-based paints provide a protective barrier and are often used on boats, timber surfaces on the home's exterior, such as window frame, fascia boards, barge boards and the like, where protection against the elements is a prime concern.
- Primers, usually with a varnish or synthetic resin base, are applied first to porous surfaces such as wood or plaster. They fill tiny holes and cracks so that the next layers of paint won't soak into the wall. In addition, purpose-formulated knot sealer can be applied to seal knots in wood before the primer and final coats are applied.
- Wall paints may be gloss (reflective), semi-gloss (less reflective) or flat (non-reflective). Not all paints that can be applied to masonry surfaces have waterproofing qualities, so seek advice at your local Mica if you want the wall you are planning on painting to be waterproofed at the same time.

The money's in the mix

As with most things in life, you get what you pay for, so buying the cheapest paint you can might sound like a good idea at the time, but might not be so wise in the long run.

Paints sold in Mica stores are top quality – and that is what you should go for. Lower quality paints usually have more solvent by volume than better quality products and the proportion of pigments and binder might also be lower. The results can be less protection, lower durability, fading and you having to go up the ladder to repaint sooner than you would like. The other issue is that the cheaper paint has now become the surface on which you might like to apply a quality product. The problem is that the cheaper first coat might have less binder in it and you might well have to remove it first before applying the new paint. And that, as we all know, can be a real chore!

How much paint?

Before starting any paint job, you need to know what area you will be covering; after all, you don't want to run out mid-job, nor do you want the hassle of having to return paint, or end up with a nearly full container of slightly used paint that is non-refundable and unneeded.

Measure off the total area and then subtract the total devoted to doors, windows and so on.

Now that you know what area you need to cover, you will be able to select the best product and the right amount for the job. Allow for around 5% extra paint in your calculations so you have a little left over for touch-ups. This will enable you to buy what you need for the job, but not have a huge amount of unused at the end.

Check the coverage in m^2/ℓ when deciding on a type of paint. Paint 'A' might seem expensive because 5ℓ costs, say, R500 while Paint 'B', for the same amount costs, say, R300. Both are good products but, while the R500 can will cover, say, 25m^2 (cost = $\text{R}20/\text{m}^2$), the R300 can will cover, say, 14m^2 (cost = $\text{R}21.42/\text{m}^2$).

It depends on what result you want to achieve and what sort of budget you have. So the R300 might indeed be the better option, but this exercise gives you an idea of how total price and coverage can determine your final costs.

In this instance, there isn't that much difference in the cost per m^2 , but if you have to paint a large area, say 500m^2 that extra $\text{R}1.42/\text{m}^2$ amounts to around R710 extra. Naturally, the figures used here are being used to prove a point.

Selecting the right paint for the job will help ensure that the result you get is the result you want.