DIAMOND DETAILING

Ceramic Coating Explained

What a ceramic coating actually is.

Your car's paint isn't one layer. Underneath is primer, then the colour coat, and over the top sits the clear coat, a transparent layer perhaps 40 to 50 microns thick that does all the suffering.

The clear coat is what oxidises in the sun. It's what bird droppings etch into. It's what holds the swirl marks from a supermarket car wash. It's designed to be the sacrificial layer, and on the Coffs Coast, with sun, salt air, sap and a generous local bird population, it does a lot of sacrificing.

A ceramic coating is a liquid applied by hand, panel by panel, that chemically bonds to that clear coat and cures into a hard, transparent, semi-permanent layer of its own. Once it cures it isn't sitting on the paint the way a wax does. It has become part of the surface.

> **The most useful way to think about it**
>
> A coating is a second clear coat. Thinner than the factory one, usually two to three microns, but far denser and far more chemically resistant. It takes the abuse so your real clear coat doesn't have to.

WHAT THAT MEANS IN PRACTICE

- It can't be washed off, waxed over or peeled away. It wears down gradually over years.
- It's completely transparent, changing gloss and slickness rather than colour.
- It locks in whatever condition the paint is in on the day it's applied.

THE ONE DISTINCTION TO HOLD ONTO

A coating protects your paint **chemically**. It is not physical armour.

It's brilliant against things that attack paint through chemistry: acid, UV, minerals and contamination. It does very little against things that attack paint through force, like a stone off a truck on the highway. Almost every unhappy coating customer is someone who was sold the first and expected the second.

What it does, and what it doesn't.

Both lists matter. The second one is the one that keeps people happy twelve months later.

WHAT A COATING DOES

- ✓ **Resists chemical etching.** Bird droppings, tree sap, bug splatter and industrial fallout are acidic. On bare clear coat in summer heat they can etch in hours. On a coating they tend to sit on the surface and wash away.
- ✓ **Blocks UV.** Slows the oxidation and fade that turns reds pink and blacks chalky.
- ✓ **Repels water.** Water beads tightly and sheets off, carrying loose dirt with it.
- ✓ **Makes washing far easier.** Dirt has less to grip. Less scrubbing means less wash-induced swirling, which is where most swirl marks actually come from.
- ✓ **Adds real gloss and depth.** Especially over paint that's been properly corrected first.
- ✓ **Resists water spotting** from mineral deposits, though it doesn't make the car immune to it.

WHAT A COATING DOES NOT DO

- – **Stop stone chips.** No chemical coating will. Impact protection is the job of paint protection film, which is a physical layer you can feel.
- – **Stop scratches, car park dings or trolley damage.** It resists light marring. It is not a force field.
- – **Remove existing swirls or scratches.** A coating is clear. Applied over damaged paint, it seals the damage in and you'll be looking at it for years.
- – **Mean you never wash the car again.** It means washing is quicker, gentler and less frequent, not optional.
- – **Last forever.** Semi-permanent means exactly that.
- – **Fix failing paint.** Clear coat that's peeling, flaking or delaminating needs paint, not protection.

> If a coating is being sold to you as scratch-proof, walk away. The honest version is "harder to mark, and far easier to keep clean", which is worth a lot, and is not the same claim.

The prep is the product.

Here's the thing nobody selling coatings likes to lead with: the coating itself is maybe a tenth of the job. Everything that happens to the paint *before* the bottle is opened is what determines whether you're happy in three years.

A coating is transparent and semi-permanent. That combination means it faithfully preserves whatever state the paint is in on the day. Coat swirled paint and you've preserved the swirls. Coat paint with wax or polishing oils still in it and the coating can't bond properly, so it will fail early and often patchily.

WHAT A PROPER JOB LOOKS LIKE

1. **Decontamination wash**

   A thorough wash, then a chemical iron and fallout remover that dissolves the embedded metal particles a wash can't shift.

2. **Clay treatment**

   Mechanically pulls bonded contamination out of the clear coat. You can feel the difference immediately: the paint goes from gritty to glass-smooth.

3. **Paint depth measurement**

   A gauge tells us how much clear coat we actually have to work with. Clear coat is finite, and every correction removes some. Anyone cutting into paint without measuring first is guessing with your car.

4. **Machine correction**

   Under proper lighting, cutting and refining until the defects are gone. This is where the hours go: a single stage on new paint, or multiple stages on a car that's lived outside for years.

5. **Panel wipe**

   An IPA wipe-down strips every trace of polishing oil so the coating meets bare, clean clear coat. Skip this and the coating has nothing to grip.

6. **Application and cure**

   Applied indoors, one panel at a time, in controlled temperature and humidity, then levelled before it flashes off. Then it sits and cures. It isn't finished when it's applied.

> If someone can ceramic coat your car in two hours, they're selling you the bottle, not the job.

This is also the answer to why quotes vary so wildly. Two shops can both say "ceramic coating" and be describing a half-day job and a three-day job. When you compare prices, you're not comparing coatings. You're comparing how much correction is included. Always ask.

Decoding the jargon.

Coating marketing leans hard on numbers and materials science. Most of it is real. It's just routinely misunderstood, occasionally on purpose.

"9H" and "10H" hardness

This is the pencil hardness scale (ASTM D3363). A coated panel is scratched with graded pencil leads of increasing hardness to find the point where it marks. It is a legitimate, standardised measure of resistance to light scratching, and it has nothing to do with the Mohs mineral scale used for gemstones. A 9H coating is not "harder than glass" and it will not stop a stone chip. What it does tell you is that the cured film is dense and resists the fine marring that dulls paint over time.

Water contact angle

Measured in degrees: how tightly a droplet beads rather than spreading. Above roughly 100° a surface is considered hydrophobic, and strong modern coatings measure somewhere around 110 to 120°. Higher numbers mean water leaves the car faster, carrying dirt with it, which is the practical benefit you actually notice on a wet morning.

SiO_2, silica, graphene, boron

Silica (SiO_2) is the traditional backbone. It cures into a hard, quartz-like matrix. Graphene coatings add carbon to that matrix, with the claimed benefits being less water spotting, better heat dissipation and a slicker feel. Newer boron and polysilazane chemistries chase similar goals from a different direction. All of it is real chemistry, but a well-formulated silica coating applied properly will comfortably outperform a fashionable one applied badly. The formulation and the applicator matter more than the buzzword on the box.

"Self-healing"

A paint protection film property, not a coating one. Films can reflow with heat to erase light scratches. Coatings can't. If you're told a coating self-heals, the claim has wandered.

Microns

Coating thickness. A typical coating adds two to three microns over a factory clear coat of forty to fifty. Thin, hard and dense, not a thick armoured shell.

The coating we use.

We're deliberately not going to spend pages on brand names. Most reputable coatings are good products, and the one on your car matters far less than the hands applying it. But since you'll want to know, here's ours and why.

We apply **Magnum**, an Australian-formulated coating, as an accredited applicator. Two things decided it for us: it is independently tested rather than just confidently marketed, and its warranty only exists when it's applied by a trained applicator, which means the manufacturer has skin in the game on the quality of the work, not just the sale of the bottle.

THE TESTING BEHIND IT

10H	Pencil hardness, independently verified by SGS under ASTM D3363, a scale that ordinarily tops out at 9H, so the testing was extended past the standard's ceiling.
1,000 hrs	Accelerated xenon-arc UV weathering to ISO 4892-2, with no visible yellowing, hazing or microfracturing across the tested specimens.
800+	Simulated wash cycles in mechanical stress testing with performance retained, the rough equivalent of many years of regular washing.
118 to 120°	Water contact angle, which is where that strong beading and sheeting behaviour comes from.
8 years	Real-world field panels left exposed to Australian sun, heat, rain and dust, still beading and sheeting.

About the warranty

Because we apply it as an accredited applicator, your coating carries a manufacturer-backed warranty. The cover it provides, and what is needed to keep it active, are set by the manufacturer and depend on which coating your car receives. We go through the terms with you properly at the time of booking, and you get them in writing, so there are no surprises later.

A fair word on warranties generally. They are worth having, but no coating warranty covers everything, and all of them ask something of the owner in return, usually regular washing and a periodic check. Read the terms on any coating you are quoted, from anyone, before you decide.

How long a coating really lasts.

A warranty period and a lifespan are two different things, and the honest answer to "how long will it last?" is that it depends on four things, only one of which is the coating itself.

1. **How well it was prepared**

   A coating bonded to properly cleaned, corrected, oil-free paint will outlive the same coating rushed onto a contaminated surface by years. This is the single biggest variable and it's decided before the coating ever touches the car.

2. **Where the car lives**

   A garaged car and a car parked under a jacaranda near the water are having completely different experiences. Salt air, unrelenting sun and sap are all part of life on the Coffs Coast, and they all draw down the coating's working life.

3. **How it gets washed**

   This is the one most within your control. Automatic brush washes are the fastest way to ruin a coating: spinning bristles carrying the grit from every car before yours. Hand washing with the right technique will add years.

4. **Whether it gets maintained**

   An annual decontamination and a topper sealant keep the surface performing. Skip it for three years and you'll be looking at a tired coating well before its time.

ONE THING WORTH KNOWING

The beading goes before the protection does. Water behaviour is the first thing to fade. It's the most visible property and the most sensitive to surface contamination. A coating that has stopped beading spectacularly hasn't necessarily stopped protecting your paint. What it has done is give you a clear, visible signal that it's time to book a check and a refresh. That's a useful feature, not a fault.

What we won't do is give you a flat number. Anyone who promises you an exact figure without knowing your paint, your parking or your washing habits is guessing, and usually guessing high.

Living with a coated car.

None of this is difficult. It's mostly about doing less, and doing it properly.

THE FIRST WEEK

- The coating is still curing after you drive away. It's dry to touch within hours but continues hardening for a couple of days.
- Keep it dry for the first 24 hours if you possibly can. Rain won't ruin it, but it won't help.
- Don't wash it for the first week. It doesn't need it, and it's the one time the surface is vulnerable.
- We'll tell you exactly where yours is at when you collect it.

HOW TO WASH IT

- Every two weeks is the sweet spot. Contamination that sits doesn't get easier to remove.
- pH-neutral car shampoo only. No dish soap, no harsh degreasers on coated paint.
- Two buckets with grit guards: one for soapy water, one to rinse the mitt. Separate bucket and mitt for the wheels.
- Wash in the shade, top down, dirtiest areas last.
- Dry with a plush microfibre towel or a blower. Don't let water evaporate on the paint. That's where water spots come from.

WHAT TO AVOID

- **Automatic brush washes.** Never. This is the one rule with no exceptions.
- **Waxing or polishing over the top.** It achieves nothing and it masks how the coating is actually behaving.
- **Letting droppings and sap sit.** The coating buys you time, hours instead of minutes, but not immunity. Remove them when you see them.
- **Bore or hard water left to dry.** Mineral deposits will spot any surface. Rinse and dry.
- **Aggressive traffic film removers** and strong alkaline snow foams used regularly.

Your annual check-in

Once a year we'll have the car back for a wash, a decontamination, an inspection under proper lighting and a topper sealant. It takes a couple of hours, it keeps the coating performing, and it's the point where we catch anything that needs attention while it's still small.

The questions we're asked every week.

Will a coating stop stone chips?

No, and be wary of anyone who says otherwise. Stone chips are impact damage and only a physical barrier stops them. That's paint protection film, a clear urethane layer applied to the areas that cop the stones. A coating and a film do different jobs and work well together.

Will it get rid of the swirl marks already in my paint?

No. A coating is clear, so it seals in whatever is underneath. Removing swirls is machine correction, and it happens before the coating goes on. That's why the condition of your paint drives the price far more than the coating does.

Do I still have to wash my car?

Yes, just less often, more easily, and with far less scrubbing. Most people find their wash goes from an afternoon to under an hour, and the car stays looking clean for longer between washes.

Can I take it through the automatic car wash?

Please don't. Brush washes drag the grit from every previous car across your paint and will mark a coating badly. Touchless washes are less damaging but use aggressive chemicals; occasional use won't destroy a coating, but a proper hand wash is always better.

Should I wax over the top of it?

No. It adds nothing to a coating's performance and it hides how the coating is really behaving. If you want to boost the water behaviour between services, use a coating-compatible topper and we'll point you to the right one.

How soon can I drive it after application?

Usually the same day, once it's cured enough to handle. We'll give you the specifics when you collect the car. Generally, keep it dry for 24 hours and don't wash it for a week.

Can you coat wheels, glass, trim and leather?

Yes, there are purpose-made formulations for each. Wheel coatings make brake dust rinse off instead of baking on. Glass coatings make rain bead and fly off the windscreen at speed, which is a genuine safety benefit in a Coffs downpour. Interior and leather coatings help with spills and UV.

My car is wrapped, or has paint protection film. Can it still be coated?

Yes. Coatings are safe over quality vinyl wraps and over paint protection film, and they make both noticeably easier to keep clean. Just tell us what's on the car when you book.

What about a convertible soft top?

No. Ceramic coatings are for solid surfaces. Fabric roofs need a dedicated fabric sealant instead, which is a different product and a different job.

My car's black. Is a coating worth it, or will it still swirl?

Dark cars benefit the most visually. The gloss and depth are obvious in a way they aren't on silver. A coating won't prevent swirls from bad washing, but it makes safe washing much easier, which is really where swirls come from. Pair it with a proper wash routine and a black car stays sharp.

Will the coating itself fade or yellow?

A quality coating shouldn't. The one we use went through 1,000 hours of accelerated UV weathering with no visible change. Cheap coatings can haze or yellow, which is one of the genuine differences between product tiers.

What if I have a panel resprayed later?

The new panel will need coating too. Fresh paint has no coating on it, and it also needs time to gas off before anything goes over it. Let us know if you've had body repairs so we can look after the repaired area properly.

If I sell the car, does the coating go with it?

The coating stays on the paint, so the new owner gets the benefit of it. Any manufacturer warranty is a separate matter and is generally tied to the original owner, so check the terms if that matters to you. Either way, a documented correction and coating history is a genuine asset at resale. Buyers notice paint that has obviously been looked after.

Can you coat a car that's already been coated?

Yes, but the old coating has to come off first. It's machine polished away, not layered over. An old coating underneath a new one is the classic cause of patchy, short-lived results.

How much does it cost?

Honestly, it depends almost entirely on two things: the size of the vehicle and the condition of the paint. A new car needing a light refinement is a completely different job from a five-year-old ute that's lived outside and needs multi-stage correction. That's exactly what the inspection is for. We look at the car, tell you what it needs, and quote the real job rather than a number off a price list.

Is it worth doing on a work ute or a 4WD?

Often more worthwhile than on a garage queen. Working vehicles cop more chemical abuse from sun, dust, mud, tar, bird life and wash bays, and the easier-cleaning benefit is felt every week. The finish won't be flawless if the paint's already hard-worn, but the protection is very real.

Do you do caravans and motorhomes too?

Cars, 4WDs, caravans, motorhomes and light commercial vehicles, yes. Large recreational vehicles sit in the sun for months at a time, so the UV protection really earns its keep. Give us a call with the dimensions and we'll talk you through it.

Do I have to bring the car to you?

Yes. We're shop-based only, and that's deliberate. Coatings need controlled lighting, temperature and humidity to be applied properly. Mobile detailing is great for a lot of things; coating application isn't one of them.

Is a coating right for your car?

We'd rather turn away a job than take one that was never going to make you happy. Here's roughly how we think about it.

IT USUALLY MAKES SENSE IF

- ✓ The car is new or near-new, and you want to keep it that way.
- ✓ You're planning to keep it three years or more.
- ✓ It's black, red, or another colour that shows every mark.
- ✓ It lives outside, or under trees, or near the water.
- ✓ You like your car clean and you're tired of how long that takes.
- ✓ You care about what it's worth when you sell it.
- ✓ You're already spending money on regular polishes and waxes.

IT'S PROBABLY NOT THE RIGHT CALL IF

- – You're selling within the next twelve months. A good detail and polish will serve you better for less.
- – The clear coat is already failing: peeling, flaking, heavily oxidised. That's a paint problem.
- – You genuinely don't mind swirls and you're happy with a quick wash at the servo.
- – The car is garaged, barely driven, and you already enjoy waxing it yourself.
- – You're expecting it to stop stone chips. If that's the goal, we should be talking about film.

> A coating won't make a neglected car new again. If the paint needs heavy correction, the correction is the real cost. The coating is what stops you paying for it twice.

The way we'd put it: a coating is an investment in keeping paint the way it is, not a repair for paint that's gone. The newer the car, the more there is worth locking in, which is exactly why timing matters, and why the next page is the one we'd read first.

The best time to coat a car is early.

Paint is at its absolute best the day it leaves the factory, and every week after that takes something off it. Where your car sits on that timeline decides how straightforward the job is, and what it costs you.

BEST CASE: BEFORE YOU TAKE DELIVERY

If you've ordered a new car and haven't collected it yet, talk to us **before** pickup day. We can liaise directly with your dealership and arrange for the car to come to us and be coated before it's handed over to you.

It means the very first thing on your paint is the coating, not months of yard sun, not dealer wash marks, not the drive home behind a gravel truck. It's the cleanest possible start, and it's usually the least expensive version of the job because there's almost nothing to correct. Worth knowing too: dealership "paint protection" packages are typically a sealant rather than a coating. Ask what's actually being applied and for how long it's warranted before you pay for it.

UNDER 6 MONTHS OLD

Book straight in.

No inspection needed. The paint is new enough that we can plan the job from the booking, give you a clear scope up front, and get you in the diary. Just let us know the make, model and roughly where it's been living.

OVER 6 MONTHS OLD

A quick look first.

We'll book you in for a ten-minute inspection. We put the car under proper lighting, check for swirls, etching and contamination, and take paint depth readings. Then we tell you honestly what level of correction it needs, and book you in with a scope and a price agreed before the day.

QUESTIONS WORTH ASKING ANY DETAILER, INCLUDING US

1. What paint correction is included, and how many stages?
2. Will you measure paint depth before you cut?
3. Which coating, and are you an accredited applicator for it?
4. Does the warranty come from the manufacturer or from the shop?
5. How long will you have my car? A proper coating job is measured in days, not hours.
6. Do you work indoors, in controlled conditions?
7. What does aftercare involve, and what voids the warranty?
8. Can I see your correction work photographed under lights, not in sunshine?

DIAMOND DETAILING

When you're ready, we're here.

CALL OR EMAIL

0412 093 566
info@diamonddetailingcoffs.com.au

WORKSHOP

14/3 Engineering Drive
North Boambee Valley NSW
2450

OPEN

Mon to Thu, 8am to 4:30pm
Fri, 8am to 2:30pm

Scan to see our work

Services, recent jobs and the booking form.

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This guide is general information about ceramic coating and is not a quote or a warranty document. Product testing figures are those published by the coating manufacturer. Warranty terms, coverage and exclusions are set by the manufacturer and provided in full at the time of booking.