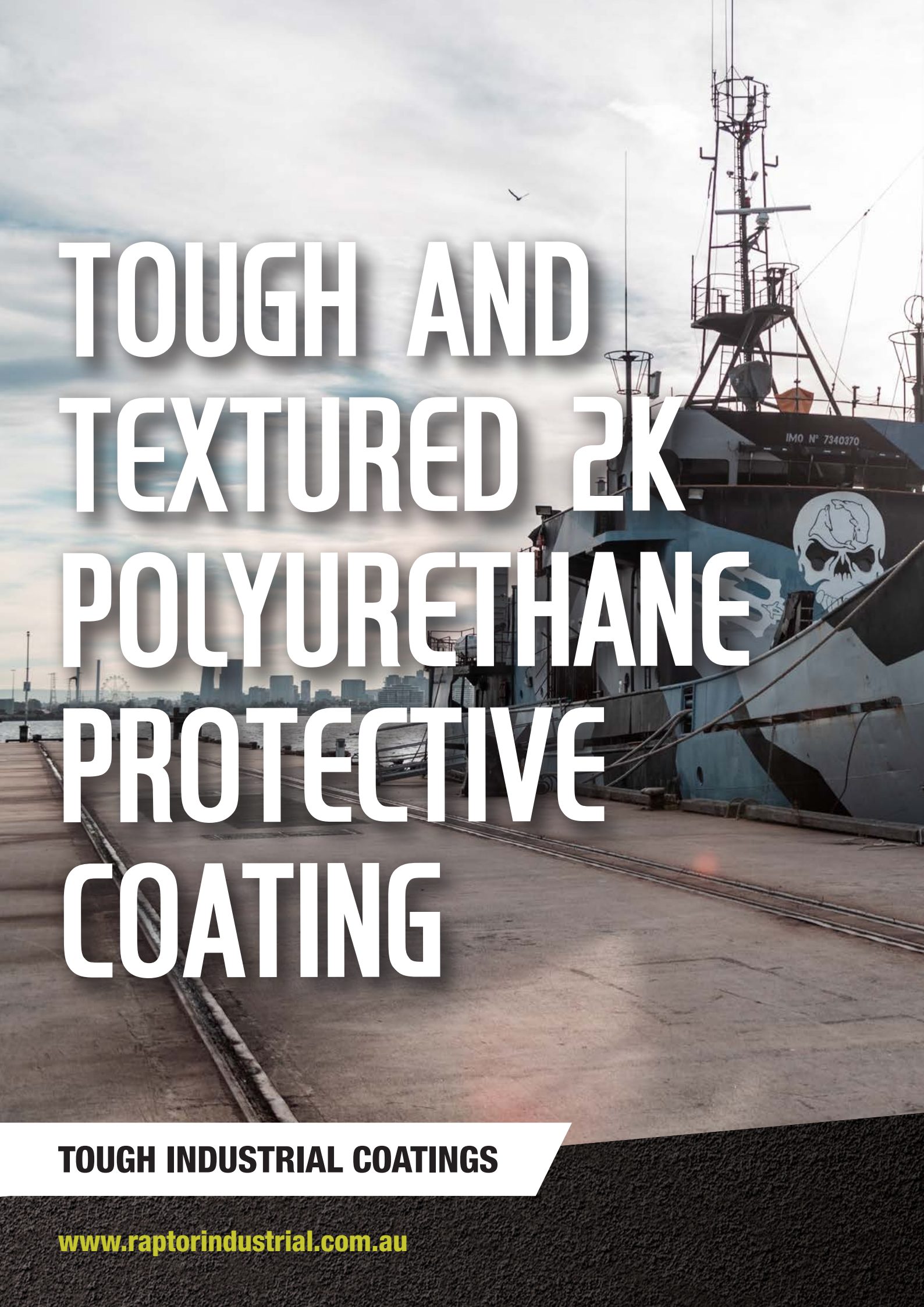
RAPTOR®

INDUSTRIAL PROTECTIVE COATINGS

INDUSTRIAL APPLICATION GUIDE

www.raptorindustrial.com.au



TOUGH AND TEXTURED 2K POLYURETHANE PROTECTIVE COATING

TOUGH INDUSTRIAL COATINGS

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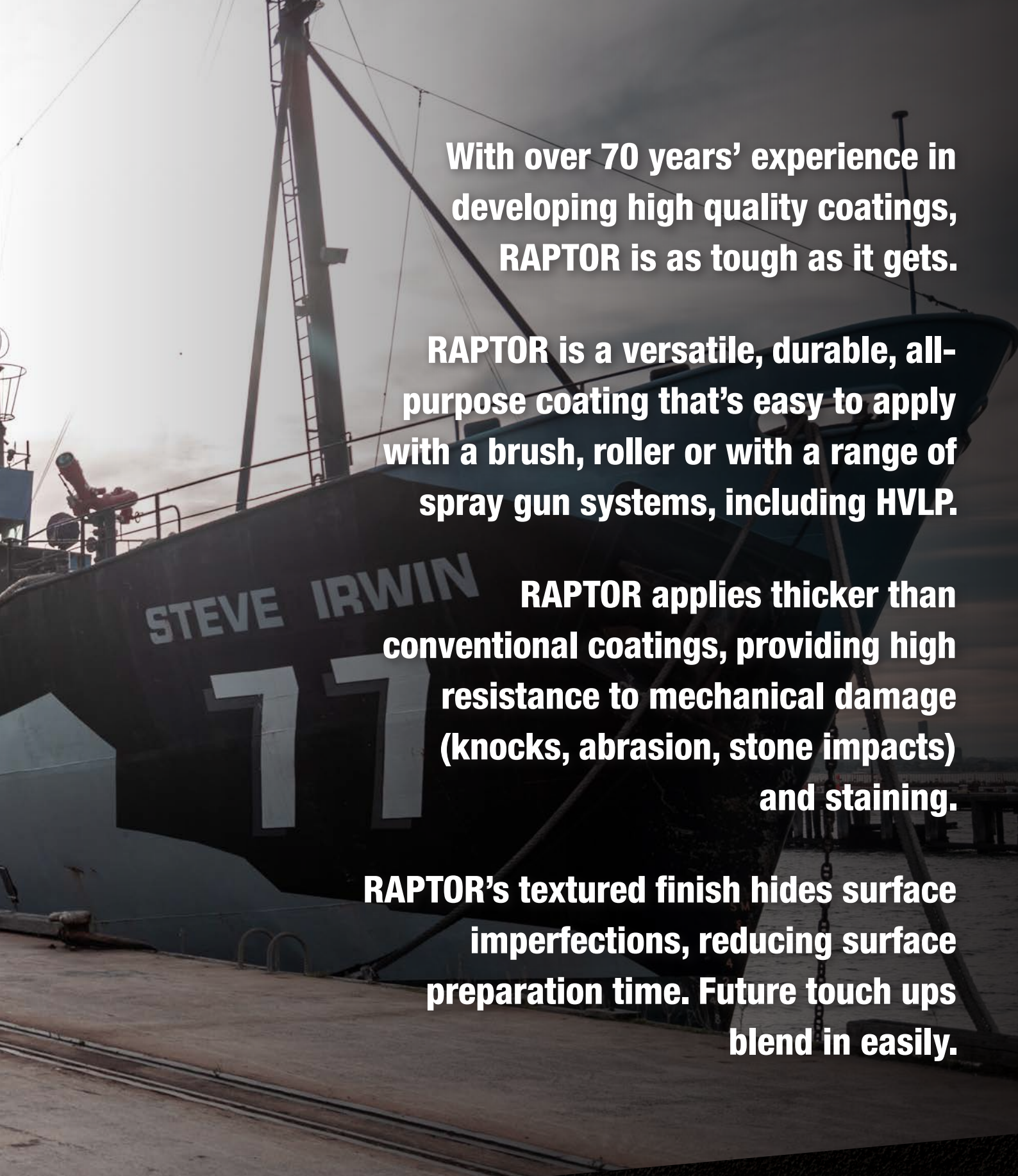


With over 70 years' experience in developing high quality coatings, RAPTOR is as tough as it gets.

RAPTOR is a versatile, durable, all-purpose coating that's easy to apply with a brush, roller or with a range of spray gun systems, including HVLP.

RAPTOR applies thicker than conventional coatings, providing high resistance to mechanical damage (knocks, abrasion, stone impacts) and staining.

RAPTOR's textured finish hides surface imperfections, reducing surface preparation time. Future touch ups blend in easily.

RAPTOR®

7 REASONS TO

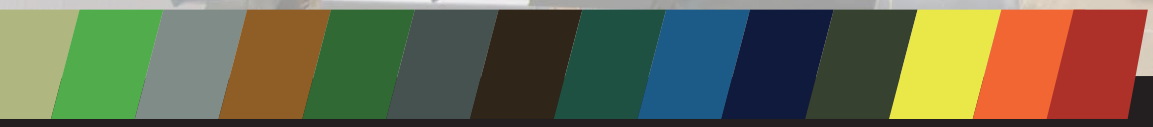
ROLL/ BRUSH/ SPRAY

1. EASY TO APPLY

Works with rollers, brush, or spray gun systems, including HVLP.

2. HIGH ADHESION

Excellent adhesion to steel, iron, non-ferrous metals, plastics, composites, timber and concrete.



3. TINTABLE TO ANY COLOUR

Available in black, white, and tintable. Pre-mixed custom tints available.

4. WATER RESISTANT

High level moisture resistance* protects against corrosion.

TOUGH INDUSTRIAL COATINGS

*Water resistant above the water line for marine applications.

RAPTOR

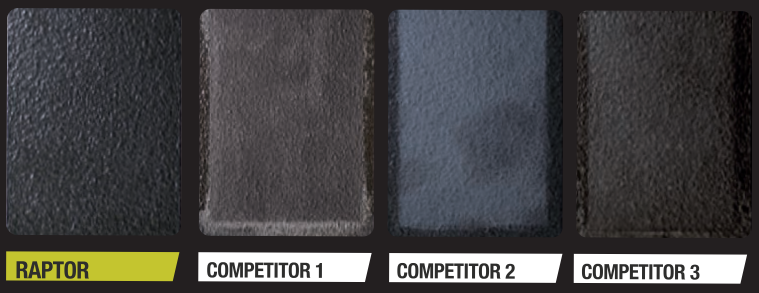
5. CHEMICAL & CORROSION RESISTANT

Protects against corrosion from moisture, fuels, oils, salts, chemicals, and animal urine.

6. U.V. RESISTANT

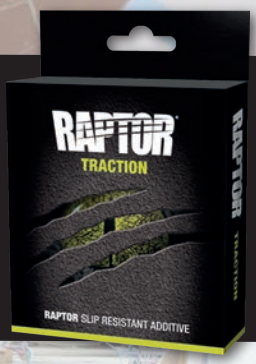
Won't fade or 'chalk' in the sun

AFTER 8 YEARS IN THE SUN...



7. SLIP RESISTANT ADDITIVE

Add RAPTOR Traction with RAPTOR to produce a slip resistant surface (as defined by BS 7976-2 and ASTM E303-93).

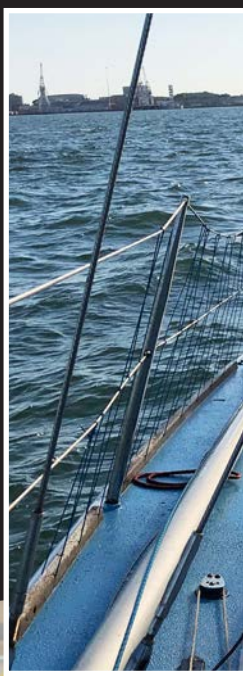


RAPTOR®

RAPTOR®

TOUGH AND TEXTURED

Looks Tough. Is Tough.



HIDES IMPERFECTIONS

RAPTOR's thick, textured finish hides a multitude of imperfections, reducing surface preparation time and making future touch ups easy to blend in for a long lasting, great looking finish.

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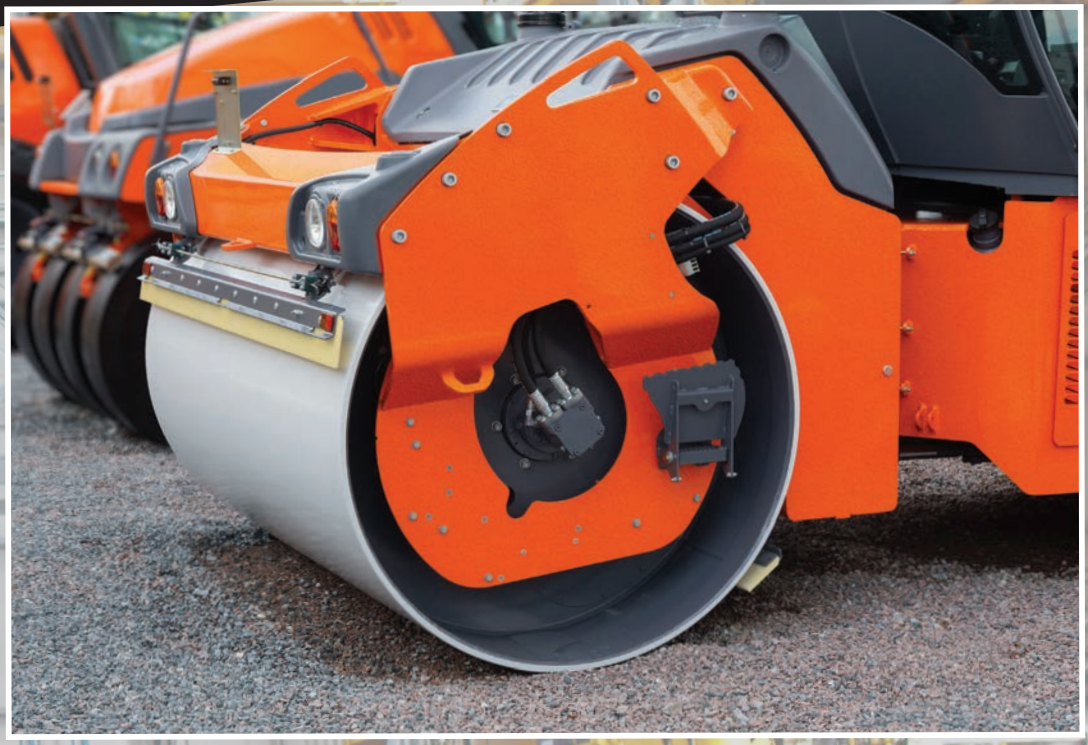


RAPTOR®

INDUSTRIAL R

RAPTOR INDUSTRIAL COATING

The 5L RAPTOR tins are ideal for large areas such as trailers, floors, heavy equipment, and full oversprays.

- Mix 3:1 to make more than 20L of RAPTOR and cover approximately 60m$^{2.}$
- This can be brush applied, rolled, or sprayed through pneumatic or conventional spray equipment.
- Also available in 200L drums - contact Customer Services for more information.

Part Number	Description	Colour	Units Per Case
RLB/1	711mL	Black	
RLB/5	5L Tin	Black	2
RLT/5	5L Tin	Tintable	2
RLB/200	200L Drum	Black	1
BLW/200	200L Drum	White	1

RAPTOR HARDENER

L5L hardener can be used with 1 x 5 Litre black or tinatable RAPTOR coating

- RAPTOR Protection 5 Litre Hardener should be used in conjunction with the RAPTOR 5 Litre can of protective coating.
- This quantity is ideal when working on large areas such as trailers, floors, heavy equipment, and full oversprays.

Part Number	Description	Colour	Units Per Case
RLH/5	5L Tin	Hardener	2

* **Test completed at >1000 hours according to ASTM protocols (B117) at an independent laboratory**

** **Metal should be prepared in accordance with the TDS**

RAPTOR ANTI-CORROSIVE EPOXY PRIMER

RAPTOR Anti-Corrosive Epoxy Primer is a 2K primer specifically designed to be used under RAPTOR coating.

RAPTOR Anti-Corrosive Epoxy Primer is a 2K high performance primer aerosol designed to be used under RAPTOR Protective Coating to further extend the protective and anti-corrosive properties of RAPTOR. The advanced resin technology improves adhesion to bare metal and most other prepared surfaces such as aluminium and galvanised. Contains a blend of anti-corrosive additives to inhibit rust and corrosion.

- Compatible with all standards water-borne and solvent-borne coatings.
- Easy to activate. Up to 4 days pot life in can once activated. No measurements and no gun to clean.
- The RAPTOR Anti-Corrosive Epoxy Primer Aerosol covers approximately 0.75-1.0m² at 70µ for 2 coats.
- Adjustable spray nozzle suitable for larger repairs as well as precise, controlled application.

Part Number	Description	Colour	Units Per Case
REP/1LK	1L Kit	Grey	8
REP/5LK	5L Kit	Grey	1

ANGE

RAPTOR ANTI-CORROSIVE EPOXY PRIMER AEROSOL

RAPTOR Anti-Corrosive Epoxy Primer is a 2K high performance primer aerosol designed to be used under RAPTOR Protective Coating to further extend the protective and anti-corrosive properties of RAPTOR. The advanced resin technology improves adhesion to bare metal and most other prepared surfaces such as aluminium and galvanised. Contains a blend of anti-corrosive additives to inhibit rust and corrosion.

- Compatible with all standards water-borne and solvent-borne coatings.
- Easy to activate. Up to 4 days pot life in can once activated. No measurements and no gun to clean.
- The RAPTOR Anti-Corrosive Epoxy Primer Aerosol covers approximately 0.75-1.0m² at 70µ for 2 coats.
- Adjustable spray nozzle suitable for larger repairs as well as precise, controlled application.

Part Number	Description	Colour	Units Per Case
REP/AL	400ml Aerosol	Beige	6

RAPTOR AEROSOLS

Adhesion Promoter

- Promotes paint adhesion to most surfaces, like plastics, aluminium, galvanised metal, zinc, painted surfaces, fibreglass, and solid masonry or concrete.
- Replaces the need to abrade surfaces in hard to sand areas, like tight seams and joins, folds, under motors, and other hard to reach places.

Acid Etch Primer

- Phosphoric acid etch formula promotes paint adhesion to difficult substrates, like galvanised steel & aluminium.
- Ideal for rub throughs in primer prior to application of colour and new bare metal panels.

Part Number	Description	Colour	Units Per Case
RPTAP/AL	450ml Aerosol	Clear	6
RPTEP/AL	450ml Aerosol	Grey	6

RAPTOR ACCESSORIES

U-pol offers a complete line of accessory products to prepare, apply, and upgrade your RAPTOR application.

Part Number	Description	Units Per Case
GUN/VN	Professional Vari-Nozzle Application Gun	6
GUN/1	Standard Application Gun	5
RLTR/SM	Slip Resistant Additive Traction 200g Box. Clear - doesn't show up in tinted coating!	12
ROLLERPACK	Roller and Tray Kit	6

RAPTOR is suitable for a wide range of industrial applications; trucks and trailers, recreational vehicles, underground equipment, machinery, walkways, rails, and containers. Ideal for heavy use surfaces like vehicle trays.

RAPTOR®

CERTIFICATIONS &

www.raptorindustrial.com.au

TEST RESULTS

RAPTOR HAS BEEN TESTED IN ACCORDANCE WITH THE FOLLOWING TEST METHODS

1. ANTI-SLIP

Accredited BS 7976-2 and ASTM E303-93
(when used with RAPTOR Traction)

2. FLAMMABILITY

FMVSS 302, ISO 3795, BS AU169A

3. WATERSOAK

ASTM D870-15 Pass

4. SALT SPRAY

ASTM B 117-16
RAPTOR Anti-Corrosive Epoxy Primer test completed at >1000 hours according to ASTM protocols (B117) at an independent laboratory

5. CHIP RESISTANCE

ASTM D3359-09E2

6. IMPACT RESISTANCE

ASTM D2794-93(2010)

7. TABER ABRASION RESISTANCE

ASTM D4060-14

CHEMICAL RESISTANCE

ASTM D1308
Diesel
NaOH
Petrol
Hydraulic Oil
Xylene
Alcohol
Bleach
Horse Urine
10% Hydrochloric Acid
10% Sulphuric Acid
85.5% Phosphoric Acid

COATING REGULATIONS

Coating regulations differ by country, industry, and application. Inclusion of a specific application within this catalogue is meant to demonstrate ability of this product to perform technically in that application, but does not mean that it has regulatory approval for this use in all different legislative regimes (for example having the relevant VOC for that specific use in every market). If you need specific advice regarding the local legislative frameworks for use of RAPTOR in any given application, please contact your U-POL representative.

PERFECT FOR...

- Mining
- Transport
- Marine
- Structural
- Agriculture
- Industrial
- Commercial

RAPTOR®

APPLICATION & PRO

RAPTOR is a textured coating suitable for use over the following properly prepared substrates:
OEM paint, primed metal, primed aluminium, primed galvanized, fibreglass, SMC, wood, concrete, and powder coat.

Process tools required: RAPTOR product, safety glasses, respirator, P80-P180 grit sandpaper, red scuff pads, RAPTOR application gun or professional vari-nozzle application gun (GUN/1 or GUN/VN) or roller brush.

1

CLEAN SUBSTRATE

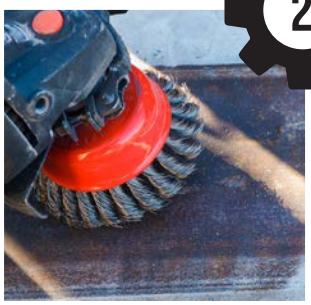
Remove all loose material. Clean and degrease surface.
We recommend using U-POL SYSTEM 20 degreasers (S2000/5).

2

PREPARE SUBSTRATE

Abrade surface with P80-P180 abrasive, use red scuff pad for difficult to abrade areas. Re-clean the surface. RAPTOR can be directly applied over painted surfaces that have been cleaned and abraded.

We recommend using U-POL SYSTEM 20 degreasers (S2000/5 or S2002/5).



3

PRIME SURFACE

Spot prime any areas where bare metal has been exposed. Bare metal, aluminium or galvanized surfaces must be primed with a suitable primer such as RAPTOR Acid Etch Primer (RPTEP/AL), or RAPTOR Anti-Corrosive Epoxy Primer for optimum performance. **Use RAPTOR Adhesion Promoter (RPTAP/AL) in hard to reach areas.**

4

MIX RAPTOR

RAPTOR has a 3:1 mix ratio. Pour 240ml of the RAPTOR hardener into the pre-filled bottle of 710ml of RAPTOR coating or combine them at a 3 parts RAPTOR to 1 part hardener ratio in a separate container. For tinting instructions, consult the technical data sheet.

5

SHAKE

Shake bottle or stir (if mixing in separate container) for 2 minutes to thoroughly mix the product.

OCEDURE GUIDE

6

SHOOT

Attach application gun to bottle. Adjust supplied air pressure to 2.75-4.1 bar depending on desired texture. At a distance of 45-150cm, apply to the prepared surface in a sweeping motion to obtain desired texture. **Pot life: approximately 60 minutes.**

We recommend using RAPTOR application guns (GUN/1 or GUN/VN).

7

ADDITIONAL COATS

2 or 3 light coats are better than 1 heavy coat. Allow RAPTOR to flash 60 minutes between coats. If more than 5 hours between coats, allow it to set overnight, lightly abrade and apply additional coat(s).

8

TOP COATING

RAPTOR can be overpainted with most modern paint systems. Allow RAPTOR to dry for 24 hours, scuff with fine scuff pad, clean, apply top coat or clearcoat if desired. We recommend using SYSTEM 20 clearcoats (such as S2081).

9

DRYING TIMES @ 20°C

Dry to touch: 1 hour. Light duty use: 2-3 days. Heavy duty use: 7 days.

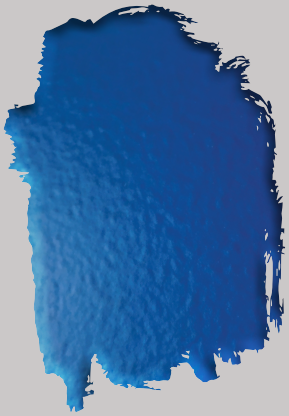
10

EQUIPMENT CLEAN UP

Clean gun, equipment and over spray with 2K thinners before RAPTOR is fully cured.

RAPTOR TEXTURE

FLAT FINISH



First coat:
Mix RAPTOR 3:1+15%,
HVLP 1.7
2 Bar (25 PSI)
Apply as a primer.
Leave to flash for 30 minutes.

Second coat:
3:1+15%,
HVLP 1.7.
2 Bar (25 PSI).

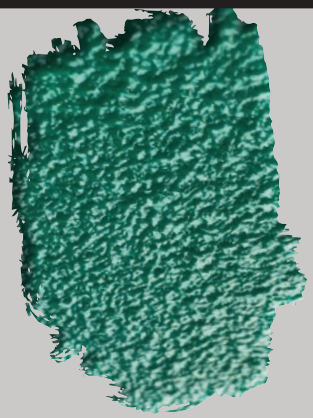
STANDARD TEXTURE FINISH

Standard texture through application Gun (GUN/1 & GUN/VN):

Mix RAPTOR.
4 Bar (58 PSI).
Distance from object: 50cm.

2 coats with an even sweeping motion.

HEAVY TEXTURE FINISH



Coarse texture through Application Gun (GUN/1 & GUN/VN):
Mix RAPTOR and allow to stand for 10 minutes.
3 Bar (44 PSI).
Distance from object: 50cm

2 coats:
First coat:
Even sweeping motion.
Second coat:
Dropping the coat over the first.

SLIP-RESISTANT FINISH

Coarse texture through Application Gun (GUN/1 & GUN/VN):
Mix RAPTOR and allow to stand for 10 minutes.
3 Bar (44 PSI).
Distance from object: 50cm.

2 coats:
First coat:
Even sweeping motion.
Second coat:
Add a RAPTOR Traction.
4 Bar (58 PSI).
Distance from object: 75cm.
Dropping the coat over the first.

APPLICATION

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RAPTOR®

FAQ

APPLICATION

Q: What size gun tip should I use to spray RAPTOR?

A: Depending on the texture desired, once reduced, RAPTOR can generally be applied with a nozzle set from about a 1.4 up to a 2.0. Once it is thinned to a maximum of 20% it is possible to spray it through a smaller nozzle set (1.2 - 1.3) however, the film build will be pretty thin and it may not have the same chip resistance that it does when applied with a larger nozzle set. In reality, it all depends on the look, finish and texture that you want to achieve.

Q: What PSI should I set my RAPTOR Application Gun to (GUN/1)?

A: Typically, 3-4 bar is recommended. Higher or lower pressure can also be used, but it's recommended you spray a test panel first to make sure the texture is what you are looking for.

Q: How long should I wait before removing automotive paint tape after applying RAPTOR?

A: Wait between 60-90 minutes after applying your final coat of RAPTOR before removing the tape.

Q: How many coats of RAPTOR should I apply?

A: The recommended RAPTOR application is 2-3 coats with a 60 minute flash time between coats. If further build is needed, it is recommended to carry this out in several applications. For instance, apply the first 2-3 coats, bake or allow 24 hours to dry and then apply another 2-3 coats, etc. The key is to allow as much solvent to evaporate from each layer before adding subsequent layers. If the process is carried out too fast, RAPTOR may remain soft and take longer to fully cure.

Q: How long should I wait to recoat after application?

A: RAPTOR can generally be recoated after 24 hours. Scuff it with a red scuff pad, clean with wax and grease remover, apply the next coat of RAPTOR.

Q: What if I need to touch up or repair my application?

A: Cured RAPTOR can easily be touched up. Just clean the surface, sand and featheredge a few inches into the surrounding area, re-clean, and mix and apply as usual. No need to prime again unless you sand down to bare metal. Remember, if it's been more than 5 hours since the last coat of RAPTOR has been applied, allow RAPTOR to cure for 24 hours, then lightly abrade and apply additional coat(s).

Q: How long do I need to wait before RAPTOR can get wet?

A: Do not allow RAPTOR to come in contact with water for at least 72 hours.

Q: How thick should RAPTOR be per coat?

A: The average thickness for RAPTOR is 200-250 µm per coat. Applying 2 medium coats of RAPTOR is recommended. Measurements are approximate and are dependent on the application method.

Q: What area will RAPTOR cover?

A: One RAPTOR 4 Bottle Kit will cover approximately 12 sq metres at recommended film build (3 sq metres / bottle).

Q: In what temperature range should RAPTOR be applied within?

A: It is not recommended for application below 5˚C. When RAPTOR is applied at the lower temperatures, the dry and cure time is significantly extended.

Q: Can RAPTOR be dry baked?

A: Yes, 30 minutes at 60˚C.

Q: Can RAPTOR be used on the undercarriage and engine compartment of my vehicle?

A: Yes, RAPTOR can be used for both.

MIX RATIO

Q: What is the mix ratio by volume and by weight?

A: Volume - 3 parts RAPTOR - 1 part hardener - 10% colour.
B: 100g RAPTOR - 30g hardener and - up to 10g tint.
Refer to online technical datasheet for additional quantities.

Q: Can RAPTOR be thinned?

A: Yes, RAPTOR can be reduced up to 20%. When reducing RAPTOR, use a urethane based reducer.

PREPARATION

Q: How do you prepare bare metal for a RAPTOR application?

A: Abrade surface with P80-P180 (P180 for aluminium) grit sandpaper and apply 1-2 coats of RAPTOR Acid Etch Primer (RPTEP/AL). Allow to dry for 15-20 minutes before applying RAPTOR. If RAPTOR Acid Etch Primer is not available, any 2K DTM or Epoxy Primer can be used to prime bare metal (follow top coat directions for primer).

Q: Can you apply RAPTOR to wheel rims?

A: Yes, RAPTOR can be applied to both steel and alloy wheels. The preparation is as follows: sand with P80-P180 grit, use RAPTOR Acid Etch Primer (RPTEP/AL) or Epoxy Primer over exposed bare metal, and apply.

Q: How do you prepare plastic for a RAPTOR application?

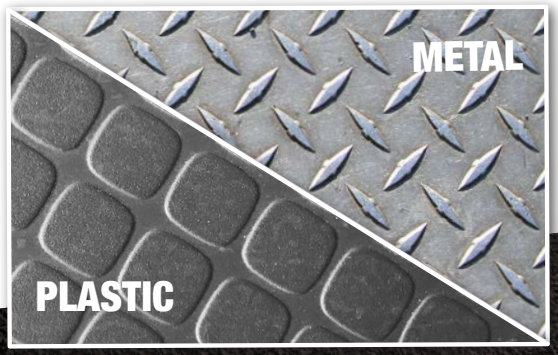
A: RAPTOR can be used on most plastic without much preparation. Abrade the plastic with P180-P240 grit sand paper or red scotch and then apply an adhesion promoter, like RAPTOR Adhesion Promoter (RPTAP/AL). Wait about 20 minutes before applying RAPTOR.

Q: How do you prepare wood and plywood for a RAPTOR application?

A: If the wood has been pre-treated or painted, clean the wood of any contaminants. If cleaned with water, allow to dry first. Lightly sand any painted areas. Once dry, apply RAPTOR.

Q: How do you prepare concrete for a RAPTOR application?

A: As long as the concrete is clean, dry, and free of oil, you can apply RAPTOR directly to concrete. If concrete is sealed, a rotary floor sander can be used to abrade surface. Any petroleum based surface contaminates should first be cleaned with a suitable cleaning solution to neutralise the contamination.



Q: How do you prepare fibreglass for a RAPTOR application?

A: Scuff the surface with P100-P120 grit sandpaper and degrease before applying RAPTOR. An adhesion promoter, like RAPTOR Adhesion Promoter (RPTAP/AL) can be used in hard to reach areas and for optimum adhesion.

Q: Can RAPTOR be applied on top of a basecoat?

A: Yes, it can be applied to both solvent and water borne basecoat. Follow basecoat manufacturer's drying times prior to over coating.

Q: How do you prepare OEM E-Coat for a RAPTOR application?

A: Clean the surface with wax and grease remover and scuff the surface with red / maroon scuff pad. Re-clean the surface before applying RAPTOR.

Q: How do you prepare powder coat for RAPTOR application?

A: Clean the surface with wax and grease remover and lightly sand with P180 grit sandpaper before applying RAPTOR.

Q: Can RAPTOR be applied over Sealant?

A:There are a large number of sealants on the market, of various different types and technologies. The only sealant recommended unreservedly for use with RAPTOR is U-POL Tigerseal, which has been thoroughly tested for compatibility in our laboratories.

Q: Can RAPTOR be used on a boat? Is it completely water resistant?

A: RAPTOR is a water resistant coating once fully cured and can be used for many marine applications. Let RAPTOR cure completely for approximately 72 hours before immersing in water.

RAPTOR will also hide a multitude of problems, like crazing, pitting and scratches.

Sand the crazed gel coat with P100-P120 grit sandpaper before applying RAPTOR. First, repair the damaged gel coat with FIBRAL (FIBL/2) or SMC bonding filler (SMCB/2 - black or SMCW/2 - white) to seal the surface.

Q: How do you prepare chrome for a RAPTOR application?

A: Good results can be obtained if one of the following is used, but note that chrome is not an "approved" substrate:
For radiator grills: Sand the surface as well as possible, apply two coats of RAPTOR Adhesion Promoter (RPTAP/AL), allow to dry then apply RAPTOR.

For more demanding substrates, such as bumpers: Sand the surface as well as possible, apply epoxy primer (following primers guidelines), then apply RAPTOR.

For helpful tips and tricks on how to apply RAPTOR and to find your nearest application centre visit: raptorindustrial.com.au

RAPTOR®

FAQ

TINTING

Q: How do you tint RAPTOR?

A: RAPTOR is compatible with any solvent based colour, including 2K acrylic solid colour and mixed acrylic basecoats, and can be added up to 10% by volume (ask your paint supplier to leave out the binders if possible for best pigment density). For help colour matching visit your local paint distributor. NOTE: Acrylic basecoat toners tend to have high colour strength so use sparingly (less than 10% tint by volume). RAPTOR cannot be used with water based, polyester or enamel paints.

Q: Does the opaque colour of tintable RAPTOR lighten up the tint colour? How can I get a brilliant colour?

A: For best colour match results, tintable RAPTOR requires a solvent colour. Various paint lines may have stronger or weaker toners so final colour may vary. Ask your paint supplier to leave any binder or balancer out of the formulation if possible so it is pure pigment.

Q: Can tint be added to the black kits, for example, to make grey?

A: Yes, tint can be added to the black or white kits as well.
If you're looking to match a colour code, it may be hard to do this way. Suggested that you conduct a test spray out to determine if the colour and look is acceptable prior to general application.

Q: Can you use metallic toners in RAPTOR?

A: Metallic toners can be used however, you may experience "metallic burying" and the RAPTOR may not have the exact look that you are attempting to match. Our suggestion is to conduct a test spray-out before committing to the whole project.

TECHNICAL PROPERTIES & CHEMICAL COMPOSITION

Q: What is the Shore Hardness of RAPTOR?

A: The typical Shore D Hardness Value for fully cured RAPTOR is 85.

Q: What is the maximum temperature RAPTOR can handle after applied?

A: 100˚C. At sustained temperatures above 100˚C, some softening could occur.

Q: Can RAPTOR be exposed to petrol after applied?

A: RAPTOR can withstand some exposure but should not be used for areas that will be submerged in petrol as prolonged exposure may cause some surface softening.

FINISH

Q: How do you create a dull or less-glossy look?

A: Most paint manufacturers provide proprietary matting agents that are used in other 2K products, and these are suitable for use in RAPTOR. Follow the manufacturer's recommendations. Please note this may reduce RAPTOR's flexibility. Matting agents may reduce RAPTOR's flexibility.

Q: What type of finish does RAPTOR have? Will it attract dirt?

A: RAPTOR dries as a hard satin gloss finish. It won't attract dirt and is easy to clean.

Q: Is RAPTOR skid resistant?

A: On its own, RAPTOR is not skid resistant, or non-slip. For a non-skid surface on walkways, mix RAPTOR Traction – Slip-Resistant Additive (RLTR/SM) into the final coat before applying.

Q: How do I get a smoother, less textured finish?

A: There are two ways to get a smoother finish. 1). Turn up the pressure on the gun. 2). Add thinner as per the technical datasheet instructions. For instance, you could use an HVLP gravity fed gun with a 1.6-2.0mm nozzle set up. Add 15% urethane reducer when mixing RAPTOR. Set your gun at 2 bar. At a distance of about 15cm, spray the first coat as an even wet coat. After flashing, reduce the pressure and material flow to achieve a fine mist for the second coat.

Q: Can you paint over RAPTOR?

A: Yes. Once RAPTOR is fully cured (after 24 hours) you can recoat with any 2-pac compatible coating, following the manufacturer's TDS.

OTHER

Q: How can one 4 Bottle Kit of RAPTOR cover more area than competitor truck bed liners?

A: A RAPTOR Kit has 4 bottles of sprayable product, where most competitors only provide around 2L of product in a kit. The RAPTOR Kit is designed so that one kit will cover an average truck bed.

Q: How long will RAPTOR last once applied to substrates?

A: The life of RAPTOR once applied can depend on application method, film build, quality of preparation and substrate. We have tested RAPTOR against other products in the market and have laboratory test data which proves better performance. When applied correctly, RAPTOR will last for years and is very easy to repair if necessary. It has excellent U.V. stability and will not fade. The RAPTOR Ford Ranger we completed in Australia was painted in 2015 and has traveled on-road all over the country. It still looks as good as the day it was painted, with no defects.

For helpful tips and tricks on how to apply RAPTOR and to find your nearest application centre visit: raptorindustrial.com.au

RAPTOR®

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EASY TO APPLY

TOUGH AND TEXTURED

RAPTOR®

INDUSTRIAL PROTECTIVE COATINGS

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