RAPTOR 2K BLACK PROTECTIVE COATING

TECHNICAL DATA SHEET

DESCRIPTION

RAPTOR Black Protective Coating is a 2K polyurethane coating that provides surfaces with a protective barrier that can withstand the toughest situations. Its durability and versatility make it perfect for nearly any application in automotive, commercial, industrial applications, and beyond.

FEATURES

- Industry leading durability – provides a tough, mechanical damage and stain-resistant surface that protects against rust, corrosion, extreme temperatures
- Superior chemical resistance to fuels, hydraulic oils, salt water and more
- Unparalleled U.V. resistance– prevents against color fading and chalking
- Water resistant – keeps moisture out to prevent rust
- Optional slip resistant additive – use of RAPTOR Traction produces a slip resistant surface as defined by ASTM E303-93 and BS 7976-2
- Superior sound deadening – reduces noise and vibration
- Versatile application options – apply by brush, roller, or spray equipment

SUITABLE SUBSTRATES

- Original Paint
- Aluminum*
- Bare Metal*
- Galvanized*
- Polyester Fillers
- Flexible Plastics*
- Fiberglass
- GRP
- SMC
- E-Coat*
- Concrete*
- Wood*

* Some substrates require additional surface preparation before applying RAPTOR. See “Sand Surface.” RAPTOR may be applied directly to stable wood and concrete after cleaning. If applying to concrete, sealing is not required. If you seal with a proprietary concrete sealer, you must sand according to the sealer manufacturer’s instructions and clean the surface again before applying RAPTOR.

TECHNICAL PROPERTIES

RTS VOC:	1.66 lbs/gal (199 g/l)
Pot Life:	60 minutes @ 68˚F (20˚C)
Theoretical Coverage:	21.5 sq. feet (2 sq. meters) per activated quart in 2 coats
Film Thickness (2 coats):	475µ (18.7 MILs)
Flash Point:	-0.4˚F (-18˚C)
Solids by Weight:	57%
Specific Gravity:	9.18 lb/gal (1120g/l)
Chemical Resistance:	Diesel, hydraulic oil, NaOH, bleach, alcohol, urine: No effect See ASTM D1308 for additional chemical resistance
Dielectric Breakdown:	4.8 kV/mm (122 V/Mil) ASTM D 149
Temperature Resistance:	-0.4˚F to 212˚F (-18˚C to 100˚C)

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PREPARATION

CLEAN SUBSTRATE
Remove all loose material and any rust from the surface to be coated.
Clean and degrease the surface.

SAND SURFACE
Abrade surface with required grit sandpaper:

Painted Surfaces:	180 – 320 grit
Flexible Plastics *(TPO, PP, EPDM)*:^	180 – 320 grit
Bare Steel:	80 – 180 grit
Aluminum, Galvanized:	120 – 180 grit
Fiberglass, SMC, Carbon Fiber:	120 – 180 grit
OEM E-Coat:	Coarse abrasive pad

^For tight corners or flexible plastics, a red scuff pad is also recommended.

RE-CLEAN
Blow off with compressed air and re-clean with wax and grease remover.

PRIME
Apply only RAPTOR Acid Etch Primer/U-POL ACID#8 or RAPTOR Epoxy Primer to exposed bare metal, aluminum, galvanized and large areas; apply only RAPTOR Adhesion Promoter/U-POL GRIP#4 to flexible plastics (TPO, PP, EPDM).

Note: Polyethylene (PE/HDPE) cannot be coated.

MIX 3:1**
Bottle: (fill level 24 fl. oz.): Pour 237ml /8 fl. oz. hardener directly into bottle.
Mixing Bank: Mix ratio is 3:1 in graduated mixing cup.

If mixing by weight:

Grams	RAPTOR	Hardener
1000g	777g	223g
500g	388g	112g

Note: **60-minute pot life.** Use of an accelerator like UP0735 Rocket is optional.

**RAPTOR may be reduced up to 15% based on texture desired and application equipment used. Please see RAPTOR Application section for more details.

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APPLICATION

RAPTOR is a durable, versatile protective coating that may be applied by brush, roller, or spray equipment.

60 minutes flash between coats @ 68˚F (20 ˚C)

SPRAY

Option #1: RAPTOR UP0726 and UP4800 Guns

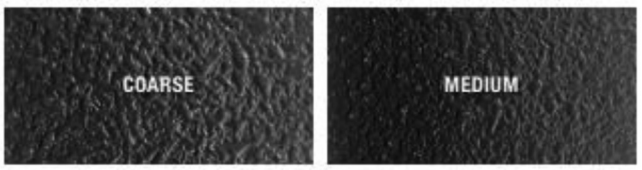
1. Activate RAPTOR bottle with hardener at a 3:1 mix ratio.
2. Shake for 2 minutes.
3. Attach application gun to RAPTOR bottle and adjust inlet air pressure.
4. Spray test panel to ensure desired texture is achieved.
5. Apply 2 coats with an even sweeping motion allowing 60 minutes to flash between coats. If applying additional coats, allow to flash off for 60 minutes between coats.

OPTIONAL: If converting to a disposable lid and liner system, replace the gun's pick-up tubes with the following adaptors:

RAPTOR Gun Options	3M™ PPS™ Cup System	DeVilbiss D Kup System
• UP0726 Application Gun	• S12 adaptor #26015	• DPC-502
• UP4880 RAPTOR Pro Gun	• S8 #26015	

UP0726 RAPTOR APPLICATION GUN		
Texture	**Inlet Pressure**	**Distance from Object**
Coarse	45 – 50 PSI (3.1 – 3.4 Bar)	18" (45 cm)
Medium	60-65 PSI (4.1 – 4.5 Bar)	24" – 30" (61 – 71 cm)

UP4880 RAPTOR PROFESSIONAL VARI-NOZZLE GUN			
Texture	**Inlet Pressure**	**Nozzle Adjustment**	**Distance from Object**
Coarse	45 – 50 PSI (3.1 – 3.4 Bar)	From closed position: Open 3 - 5 turns	24" – 30" (61 – 71 cm)
Medium	55 – 65 PSI (3.8 – 4.5 Bar)	From closed position: Open 1 1/2 - 2 turns	24" – 30" (61 – 71 cm)



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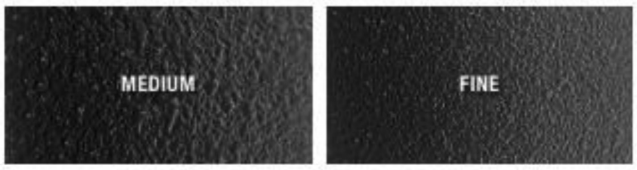
SPRAY

Option #2: 1.6-2.5 mm HVLP Gravity-Fed Gun

1. Activate RAPTOR with hardener at a 3:1 mix ratio in a graduated mixing cup.
2. RAPTOR may be reduced up to 15%* into the mixing cup.
3. Stir for 2 minutes.
4. Pour contents into spray gun cup and follow guidelines (increase fluid flow for coarser texture; reduce fluid flow for finer texture).
5. Spray test panel to ensure desired texture is achieved.
6. Apply 2 coats with an even sweeping motion allowing 60 minutes to flash between coats. If applying additional coats, allow to flash off for 60 minutes between coats.

HVLP GUN				
Texture	**Tip Size****	**Inlet Pressure**	**Fan Pattern**	**Distance from Object**
Medium	2.0 – 2.5 mm	See gun manufacturer's recommendations	Adjust between flat or round	8" – 12" (10 – 30 cm)
Fine	1.6 – 1.8 mm	See gun manufacturer's recommendations	Adjust between flat or round	8" – 10" (10 – 25 cm)

**Addition of urethane reducer may affect VOC. Please check local regulations for suitable reducers.*
***For even finer textures, tip sets smaller than 1.6mm may be used; however, additional reduction of Raptor between 15% and 25% may be necessary.*



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SPRAY
Option #3: 26832 3M™ Performance Spray Gun H/O

Texture and setting examples require:

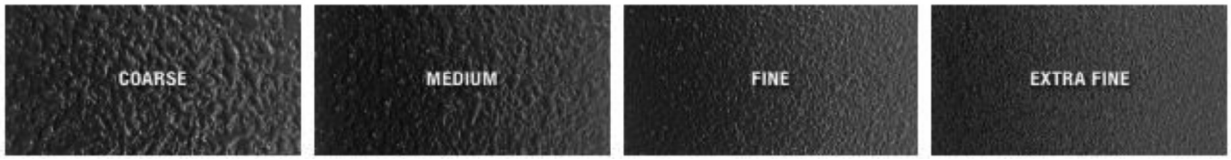
- H/O Conversion Pack (26837)
- 26121 Midi H/O cup for 3oz, 6.8oz, and 13.5oz PPS™ liners
- 26124 Large H/O cup for 22oz and 28oz PPS™ liners

Please see the 3M™ Performance Spray Gun Owner's manual for more information.

1. Activate RAPTOR with hardener at a 3:1 mix ratio in a graduated mixing cup.
2. Stir for 2 minutes.
3. Pour contents into spray gun cup and use tip size 2.0 mm.
4. From a closed position, open fan adjustment and H/O pressure knob adjustment 1 full turn.
5. Spray test panel to ensure desired texture is achieved.
6. Apply 2 coats with an even sweeping motion allowing 60 minutes to flash between coats. If applying additional coats, allow to flash off for 60 minutes between coats.

60 minutes flash between coats @ 68˚F (20 ˚C)

26832 3M™ PERFORMANCE SPRAY GUN			
Texture	**Inlet Pressure**	**Fluid Adjustment**	**Distance from Object**
Coarse	4 – 6 PSI (.27 - .41 Bar)	From closed position: Open 2 - 2 1/2 turns	8" – 12" (10 – 30 cm)
Medium	10 PSI (.69 Bar)	From closed position: Open 1 1/2 turns	8" – 12" (10 – 30 cm)
Fine	10 PSI (.69 Bar)	From closed position: Open 1 turn	8" – 10" (10 – 25 cm)
Extra Fine	15 PSI (1 Bar)	From closed position: Open 1 turn	8" – 10" (10 – 25 cm)



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ROLLING

1. Pour mixed RAPTOR into suitable paint tray.
2. Cut in all corners and hard to reach areas with a brush.
3. Apply using an open textured roller.
4. Load roller with the product and apply slowly using medium pressure.
5. Apply two coats and allow to flash off for 60 minutes between coats.

Note: Rolling RAPTOR creates a lower build than spraying. Additional coats may be necessary.

DRY TIMES

Touch dry @ 68˚F (20˚C): Less than 1 hour
Through dry @ 68˚F (20˚C): 5-7 days

- Reducing flash off time, excessive build and/or reduced temperatures will alter drying time. **Do not allow RAPTOR to come in contact with water for at least 72 hours.**
- Higher temperatures will result in shorter flash time, and colder temperatures will require a longer flash time. Higher fill builds will extend the final cure time.

BAKING 30 minutes @ 140˚F (60˚C)
Baking will speed up the initial cure, but it is still recommended waiting 7 days for regular use.

I.R. CURING Not recommended

OVERPAINTING

RAPTOR can be overpainted with most modern paint systems. When overpainting, prep the surface as follows:

1. Let sprayed RAPTOR dry for 24 hours.
2. Abrade with a fine abrasive pad.
3. Clean and degrease.

ADDING RAPTOR TRACTION ANTI-SLIP: See RAPTOR Traction SOP.

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STORAGE AND VOC INFORMATION

SHELF LIFE
2 years from date of manufacture in sealed original containers. RAPTOR should be stored in cool, dry conditions in the original containers

Clean spray gun between mixes. All equipment should be thoroughly washed with acetone immediately after use.

VOC

As Received Regulatory:	1.83 lbs./gal (220 g/l)
As Received Actual:	1.17 lbs./gal (140 g/l)
As Applied Regulatory:	1.66 lbs./gal (199 g/l)
As Applied Actual:	0.97 lbs./gal (116 g/l)

ORDERING INFORMATION

PART NUMBER	DESCRIPTION	CASE QUANTITY
UP5130	RAPTOR Black Quart (711ml)	12
UP4838	RAPTOR Black Gallon (2.85L)	2
UP5131	RAPTOR Tintable Quart (711ml)	12
UP4839	RAPTOR Tintable Gallon (2.85L)	2
UP5125	RAPTOR Hardener Half Pint (237ml)	12
UP5126	RAPTOR Hardener Quart (946ml)	4
UP4800	RAPTOR Traction Control (200g)	12
UP0726	RAPTOR Application Gun	5
UP4880	RAPTOR Professional Vari-Nozzle Gun	6
UP4870	RAPTOR Drum Black	1
UP4871	RAPTOR Drum Tintable	1
UP4872	RAPTOR Drum White (2.6 VOC)	1
UP4824	RAPTOR Hardener (5 liter)	2
UP4826	RAPTOR Hardener (5 liter) for 2.6 VOC White	2
UP5023	RAPTOR Acid Etch Primer Aerosol (15.2 oz)	6
UP5024	RAPTOR Adhesion Promoter Aerosol (15.2 oz)	6
UP4842	RAPTOR 2K Epoxy Aerosol Beige (14.1 oz)	6
UP4830	RAPTOR 2K Epoxy Kit (5 liter)	1
UP4831	RAPTOR 2K Epoxy Kit (1 liter)	8
UP4883	RAPTOR 2K Black Aerosol (13.2 oz)	6
UP4884	RAPTOR 2K Basalt Gray Aerosol (13.2 oz)	6
UP4885	RAPTOR 2K White Aerosol (13.2 oz)	6
UP4886	RAPTOR 2K Flame Red Aerosol (13.2 oz)	6
UP4887	RAPTOR 2K Olive Green Aerosol (13.2 oz)	6
UP4888	RAPTOR 2K Sepia Brown Aerosol (13.2 oz)	6
UP4889	RAPTOR 2K Blue Aerosol (13.2 oz)	6