Delfleet Essential®
When Value Is Essential

DFE-20

Single Stage Polyurethane Enamel

ESSS

ESSS Single Stage Polyurethane Enamel is an easy-to-use product designed to offer good gloss and a wide array of solid and metallic colors. It is available as a 2.8 VOC topcoat and can be used over all properly prepared OEM finishes, cured air-dried finishes, as well as any DELFLEET ESSENTIAL® primer.

Additional Products

• Essential Color	ESSS
• Hardener	ESH200
• Fast Activator (50° - 60°F)	ESX500
• Standard Activator (60° - 68°F)	ESX510
• Slow Activator (68° -76°F)	ESX520
• Very Slow Activator (76° - 88°F)	ESX530
• Extra Slow Activator (> 88°F)	ESX540

Factory Pack Colors*

ESSS3800SF	GM50 Olympic White
ESSS9000	Black
ESSS903653	White
ESSS911678	Flat Black
ESSS979392	Jet Black

*See technical bulletin DFETB-001 for factory pack color technical/regulatory information

Compatible Surfaces

ESSS may be applied over:

- Properly cleaned and sanded OEM enamels and cured finishes
- ESU400 - Wash Primer*
- ESU410 - Polyurethane Primer
- ESU420/ESU421 - 3.5 Epoxy Primer White/Gray
- ESU430 – Epoxy Primer
- ESU440 – 3.5 Primer Surfacer
- ESU460/ESU461/ESU462 – 4.6 Epoxy Primer Gray/White/Black
- ESU470 – 2.1 Epoxy Primer
- ESU480/ESU481/ESU482 2.1 VOC Epoxy Primer Gray/White/Black

When sanding prior to the application of ESSS topcoat, use 220 – 320 grit wet or dry.

*Wash and Etch primers must be sealed before applying topcoat for optimum performance.

Selection Of Substrate Cleaner - ONECHOICE® Commercial CFX Cleaners

Code	Product	Purpose
CFX435LV	Low VOC Cleaner	Compliant cleaner suitable for removing dirt, grease or other contaminants before or during the painting process.
CFX436	Wax & Grease Remover	Suitable for removing dirt, grease or other contaminants before or during the painting process.
CFX437	Heavy Duty Wax & Grease Remover	Used to remove heavy milling oils and grease from bare substrates prior to the painting process.

Application Guide

Preparation:

- Wash the area to be painted with soap and water, and then clean with CFX435LV, CFX436 or CFX437 cleaner.

- Sand with 180 – 240 grit on old finishes and body filler before priming, then re-clean with CFX436 or CFX437 cleaner.

- Prime all substrates immediately after cleaning. Final sand with 240-320 grit before topcoating.

Mixing Ratio:

6 : ESSS
1 : ESH200
1 : ESX500/510/520/530/540

If additional thinning is needed, up to 10% of ESR300 or ESR310 may be added.

Pot Life:

Pot life of this product is variable depending on temperature and on activator choice.

2 hours @70ºF (21ºC)/50% RH

Spray Viscosity:

#2 EZ ZAHN: 20 – 30 seconds

NOTE: *High heat and humidity will shorten pot life of this material. Data obtained using ESX510.*

Additives:

N/A

Spray Gun Setup:

	HVLP	COMPLIANT
Fluid Tip	1.3 - 1.7 mm or equivalent	1.3 - 1.7 mm or equivalent
Air Pressure	8-10 PSI at the air cap	50-60 PSI at the spray gun

Pressure Pot Setup: Starting setup, adjust from here for best results

	HVLP	COMPLIANT
Fluid Tip	1.0 - 1.4 mm	1.0 - 1.4 mm
Fluid Delivery	8-12 fluid ounces per minute	8-12 fluid ounces per minute

Number of Coats:

2 coats with 10 minutes flash between coats

Film Build:	Wet Film (per coat)	Dry Film (total)
Minimum	2.0 mils	2.0 mils
Maximum	4.0 mils	4.0 mils

Flash Time:

Between coats: 5 – 10 minutes @70°F (21°C) before force drying

Dry Times:

To Touch: 30 - 60 minutes @70ºF (21ºC)

To Handle: 60 - 90 minutes @70ºF (21ºC)

To Tape: 2 - 4 hours @70ºF (21ºC)

Force Dry: 30 minutes @140ºF (60ºC)

Activator used in ESSS	Min time before Recoat/Topcoat	Max time before Recoat/Topcoat
ESX500/ESX510	30 minutes	3 hours
ESX520	30 minutes	16 hours
ESX530	3 hours	72 hours
CAN NOT BE CLEARCOATED when ESX540 is used		

After 72 hours, sand ESSS DG color with 400 grit (wet or dry) before applying another coat of color or clear.

Note: Force drying times are for quoted surface temperature. Additional time should be allowed in the force-drying schedule to allow surface to reach recommended temperature.

Theoretical Coverage:

712 - 850 sq. ft. (Color formula dependent)

Theoretical coverage in sq. ft. / US gal. Ready-to-spray (RTS), giving 1mil. (25µm) dry film thickness (Assuming 100% Transfer Efficiency)

Physical Characteristics:	6:1:1 ESSS : ESH200 : ESX5X0	6:1:1+10% ESSS : ESH200 : ESX5X0 : ESR3XX
Total Solids By Weight (RTS)	50.1% - 67.4%	44.9% - 61.6%
Total Solids By Volume (RTS)	44.4% - 53.0%	40.4% - 48.7%

Application Guide (continued)

RTS Combinations:	ESSS color	ESSS : ESH200 : ESX5X0	ESSS : ESH200 : ESX5X0 : ESR3XX
Volume Ratio	Package (as is)	6 : 1 : 1	6 : 1 : 1 + 10%
Applicable Use Category	Single-Stage Coating	Single-Stage Coating	Single-Stage Coating
VOC Actual	248 - 317 (g/L)	223 - 304 (g/L)	203 - 276 (g/L)
VOC Actual	2.07 - 2.65 (lbs/gal)	1.86 - 2.54 (lbs/gal)	1.7 - 2.31 (lbs/gal)
VOC Regulatory (less water less exempt)	317 - 337 (g/L)	10 - 335 (g/L)	310 - 335 (g/L)
VOC Regulatory (less water less exempt)	2.65 - 2.81 (lbs/gal)	2.59 - 2.80 (lbs/gal)	2.59 - 2.80 (lbs/gal)
Density	968 - 1268 (g/L)	1006 - 1237 (g/L)	1012 - 1222 (g/L)
Density	8.08 - 10.58 (lbs/gal)	8.39 - 10.32 (lbs/gal)	8.44 - 10.20 (lbs/gal)
Volatiles wt.	27.5 - 46.7%	32.6 - 49.9%	38.4 - 55.1%
Water wt.	0.0%	0.0 - 0.4%	0.0 - 0.3%
Exempt wt.	6.0 - 22.2%	11.8 - 27.6%	17.8 - 35.2%
Water vol.	0.0%	0.0 - 0.4%	0.0 - 0.4%
Exempt vol.	9.8 - 26.2%	14.6 - 29.3%	21.2 - 35.7%

Health and Safety:

Safety Data Sheets (SDS) for the PPG products mentioned in this publication are available through www.ppgcommercialcoatings.com (Safety, SDS Search) or your PPG Distributor.

For additional information regarding this product, see the SDS and LABEL information.

EMERGENCY MEDICAL OR SPILL CONTROL INFORMATION (412) 434-4515; IN CANADA (514) 645-1320 AND IN MEXICO 01-800-00-21-400.

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