

## X1-5500 Clear

### Technical Data Sheet (TDS)

Conforms to: (MIL-PRF-85285 TYPE 1 and TYPE 2 CLASS H)

#### Product Description

Endura X1-5500 Clear is a three component, highly cross-linked, high performance, polyurethane clear coating designed to give extra protection to solid, metallic, and pearl colors.

#### Product features:

- Exceptionally high gloss
- Other gloss levels available: Medium, Low and No gloss
- Excellent protection against acids and alkalis
- Exceptional ultraviolet light protection
- Exceptional abrasion resistance
- Available with PTFE/Teflon™ for additional protection
- Skydrol® protection

#### Recommended Uses

X1-5500 Clear was created to meet the unique needs of aircraft. It is suitable for protecting most finished surfaces including solid colors, metallic and pearl colors.

#### Mix Ratio

2 part by volume of X1-5500	Component A	[XCA05500]
1 part by volume of X1-1000	Component B	[XUB01000]
1 part by volume of Converter	Component C	[XUCXXXXX]

Available Converters - Standard	Product Code
X1-2230 FAST CONVERTER	XUC02230
X1-2220 MED CONVERTER	XUC02220
X1-2210 SLOW CONVERTER	XUC02210

Available Converters - Low VOC	Product Code
X1-1230 LOW VOC FAST CONVERTER	XUC01230
X1-1220 LOW VOC MED CONVERTER	XUC01220
X1-1210 LOW VOC SLOW CONVERTER	XUC01210

#### Temperature range recommendations for converter use:

Temperature Range	40°F - 59°F (5°C - 15°C)	59°F - 77°F (15°C - 25°C)	77°F - 104°F (25° - C40°C)
Converter	Fast	Medium	Slow
Reducer (optional)	Fast	Medium	Slow
Aerocat I or II	Optional	Optional	Optional

Optimal finish is obtained when product and object are 70-77°F (20-25°C) and RH of 50%.

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### Product Characteristics

<b>Gloss: ASTM D2457</b>	High: 90+ GU at 60°
<b>Other gloss levels available</b>	
<b>Volume Solids Mixed:(Unreduced)</b>	38% ± 1%
<b>Pot Life:</b> (77°F (25°C) and 50% RH)	8-10 Hours
<b>Note: This will vary depending on converter used and addition of Aerocat I or II</b>	
<b>VOC Mixed (Unreduced): EPA Method 24: Typical</b>	340 g/l 2.8lb /gal
<b>VOC content will vary with each converter used. Contact your Endura Aviation Representative for exact VOC of color/converter combinations</b>	
<b>Shelf Life:</b>	
<b>Component A</b>	3 years
<b>Component B</b>	2 years
<b>Component C</b>	5 years
<b>Reducers</b>	10 years
<b>For unopened product (77°F (25°C))</b>	

### Surface Preparation

X1-5500 Clear can be applied on X1-7500 Topcoat colors without sanding during their topcoat window.

Ensure that surfaces to be clear coated are free of flaws, surface contaminants and other surface imperfections.

If the X1-7500 topcoat surface has been allowed to cure longer than 24 hours, sanding will be required to achieve inter-coat adhesion. Sand the topcoat lightly with 600 grit sandpaper or Scotch-Brite™ Gray scuff pad.

**Note:**

- **Do not sand Metallic or Pearl colors.**
- **Do not mix X1-5500 with metallic or pearl color for final coat.**
- **Do not mix clear into final color coat on solid colors.** This may cause matching and repeatability issues. Ensure opacity is achieved in previous coat.

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#### Application

X1-5500 Clear can be applied using most spray painting systems.  
Apply X1-5500 Clear as soon as the topcoat surface has cured enough to wipe with a tack cloth.  
Apply 2-3 wet coats at 2.0- 3.0 mils (wet). Allow 15 – 20 minute flash off between coats.

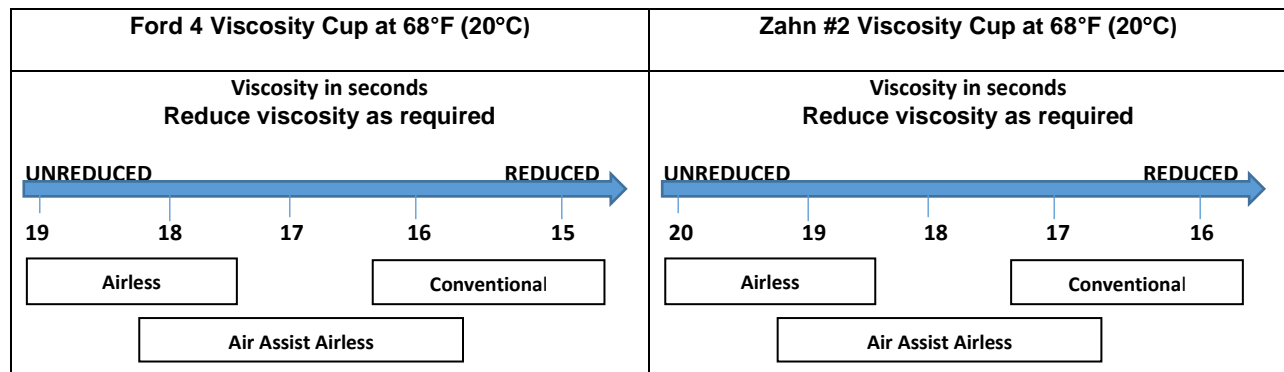
Be aware when more than three coats of paint are applied in a given 12-hour shift (including primer, topcoats and clear coat). If more than 3 coats have been applied, 10-12 hours is recommended to pass to allow for proper solvent evaporation.

After 24 hours, X1-5500 Clear must be sanded to achieve inter-coat adhesion if recoating.

#### Spray Gun Setup

Feed Type	Fluid Tip	Application Pressures (Heel of gun)	Fluid Delivery
Siphon Feed	1.6-1.8 mm	40-50 psi	
Gravity Feed	1.3 - 1.4 mm	30-40 psi	
Pressure Feed	1.0-1.4 mm	55-65 psi	12-14 oz/min
Air Assist Airless	9-13 thou	1000-1800 psi	
Airless	9-13 thou	1000-3000 psi	

#### Spraying Viscosity



**Note:** The above target viscosities are suggested as a starting point and can be adjusted depending on desired finish. Spraying viscosity and thinning will depend on ambient conditions, spray equipment used.

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If required, recommended spraying viscosity is achieved by reducing with one of the desired Endura Aviation topcoat thinners/ reducers.

Standard		Low VOC	
X1-3030 FAST REDUCER	[XUR03030]	X1-2030 LOW VOC FAST REDUCER	[XUR02030]
X1-3020 MED REDUCER	[XUR03020]	X1-2020 LOW VOC MED REDUCER	[XUR02030]
X1-3010 SLOW REDUCER	[XUR03010]	X1-2010 LOW VOC SLOW REDUCER	[XUR02030]

### Film Build

Endura X1-5500 Clear has a recommended film build thickness of:

Wet: WFT Unreduced	2.5 – 5.5 mils	63 – 140 microns
Dry: DFT	1.0 – 2.0 mils	25 – 50 microns

Theoretical coverage at 1.0 mil (25 microns) Average DFT: 610 ft<sup>2</sup> per gallon at 100% transfer efficiency.

### Dry Times

	X1-1230 C Low VOC Fast Converter XUC01230 77°F (25°C) and 50% RH	X1-2230 C Fast Converter XUC02230 77°F (25°C) and 50% RH
Gel Time/Pot Life	8 Hours	8 Hours
Cure to Touch	2.5 Hours [30 mins.]	3 Hours [30 mins.]
Cure to Handle	6.5 Hours [1 hour]	7.5 Hours [1 hour]
Full Cure	7-14 Days	7-14 Days

	X1-1220 C Low VOC Medium Converter XUC01220 77°F (25°C) and 50% RH	X1-2220 C Medium Converter XUC02220 77°F (25°C) and 50% RH
Gel Time/Pot Life	12 hours	12 hours
Cure to Touch	6 hours [1 hour]	5 Hours [1 hour]
Cure to Handle	10.5 hours [2 hours]	9.5 Hours [2 hours]
Full Cure	7-14 Days	7-14 Days

	X1-1210 C Low VOC Slow Converter XUC01210 77°F (25°C) and 50% RH	X1-2210 C Slow Converter XUC02210 77°F (25°C) and 50% RH
Gel Time/Pot Life	17 Hours	17 Hours
Cure to Touch	8.5 hours [1.5 hours]	7.5 hours [1.5 hours]
Cure to Handle	13 hours [3 hours]	15 hours [3 hours]
Full Cure	7-14 Days	7-14 Days

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**Important note:** The use of AeroCat II will accelerate drying times. [Time] indicates approximate minimum time achievable when the maximum recommended amount of AeroCat II is added.  
See the AeroCat II TDS for more information.

**Note:** Dry Times are subject to ambient conditions (temperature and humidity), good airflow and film build of the topcoat.

### Clean Up

Clean all equipment immediately after use with Endura High Strength Gun Wash or Endura X1 Reducers. Follow manufacturer's safety recommendations when using any solvent.

### Ordering Information (sizing)

X1-5500 Topcoat is available in the following spray able sizes: 2 quarts, 1gallon, 4 gallons Kits

2 mixed quarts (1.89l)		
Comp A X1-5500	XCA05500-020	1 quart (946 ml)
Comp B X1-1000	XUB01000-010	1 pint (473ml)
Comp C Part number varies with converter	XUCXXXXX-010	1 pint (473ml)

1 mixed gallon (3.78l)		
Comp A X1-5500	XCA05500-020	2 quarts (1.89l)
Comp B X1-1000	XUB01000-020	1 quart (946 ml)
Comp C Part number varies with converter	XUCXXXXX-020	1 quart (946 ml)

4 mixed gallons (15.12l)		
Comp A X1-5500	XCA05500-030	2 gallons (7.56l)
Comp B X1-1000	XUB01000-030	1 gallon (3.78l)
Comp C Part number varies with converter	XUCXXXXX-030	1 gallon (3.78l)

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#### Environmental Conditions

For optimum coating performance product, substrate and ambient temperature should be between 68°F-77°F (20°C-25°C). To prevent condensation during application the surface temperature must be 5°F (3°C) or more above the dew point at all times.

For use outside this range please contact your Endura Aviation Representative.

#### Specifications

Characteristic	Test Method	Result
Hardness	ASTM D3363	4H
Solvent Resistance	ASTM D4752	100 MEK rubs, NO failure
Impact resistance	ASTM D2794	100 in. lbs; NO failure
Taber Abrasion	ASTM D4060	25 mg loss
Flexibility	ASTM D522	1/8" mandrel bend: NO failure
Service Temperature	-40°F to 360°F	-40°C to 182°C

#### Safety Precautions

Please refer to all Safety Data Sheets (SDS) before using this product. SDS sheets can be found on our website at [www.EnduraAviation.com](http://www.EnduraAviation.com).