



**EL-320  
SERIES EPOXY  
LAMINATING SYSTEM  
FLAME RETARDANT**



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**DESCRIPTION**

EL-320 is a Halogen-Free Flame Retardant Epoxy Laminating System developed for use in fabricating parts or repairs on structures which require flame retardant, self-extinguishing properties with room-temperature curing capabilities. This system has a choice of two hardeners. The EL-320 Hardener was developed for vacuum bagging or closed molded applications and the EL-320-1 Hardener was developed for use in fabricating open-molded, hand laminated parts. This system does not contain PBDE or OBDE or DBDE flame retardant additives. The EL-320 system is tested to comply with FAR/JAR 25.853(a) of the Federal Aviation Standards for aircraft interiors and other areas where flame retardant performance is needed.

**TYPICAL HANDLING CHARACTERISTICS @ 77°F (25°C)**

	<b><u>EL-320R/EL-320H</u></b>	<b><u>EL-320R/EL-320-1H</u></b>
Mix Ratio (parts-by-weight).....	100R/10H.....	100R/16.7H
Mixed Density.....	1.17 gms/cc.....	1.17 gms/cc
Mixed Viscosity.....	2,650 cps.....	1,700 cps
Work Life (220 gram mass).....	45 minutes.....	16 minutes
Complete Cure (both systems).....	7 days @ Room-Temperature	
Accelerated Cure Schedule (both systems).....	24 hours at Room Temperature + 4 hours at 212°F (100°C)	
Mixed Color (both systems).....	Unfilled Light Amber	
Shelf Life Resin & Hardener (in original unopened containers).....	2 years	

**TYPICAL PHYSICAL PROPERTIES (Tested Following 7 Day Cure @ 77°F (25°C))**

Tensile Strength (6 ply laminate).....	32,670psi (225MPa).....	15,300psi (106MPa)
Tensile Elongation (cast bar).....	4%.....	4%
Flexural Strength (6 ply laminate).....	18,550psi (128MPa).....	5,018psi (35MPa)
Flexural Modulus (6 ply laminate).....	774,000psi (5,337MPa).....	280,800psi (1,936MPa)
Compressive Strength (cast bar).....	13,180psi (91MPa).....	9,437psi (65MPa)
Cured Hardness (cast bar).....	80 Shore D.....	65 Shore D
Impact Strength (cast bar).....	10.64 in-lbf/in.....	12.15 in-lbf/in
Heat Deflection Temperature @ 66 psi (cast bar).....	104°F (40°C).....	101°F (39°C)
Heat Deflection Temp @ 66 psi (cast bar + 4 hrs @ 212°F (100°C)).....	143°F (62°C)	

**FAR/JAR 25.853 Flame Test (3 ply 7500 Style E-Glass)**

60 second [F1]- 90° Vertical Ignition Test.....	Passed.....	Passed
12 second [F2]- 90° Vertical Ignition Test.....	Passed.....	Passed

**TYPICAL PHYSICAL PROPERTIES (Tested Following 4 Hour Post Cure @ 212°F (100 °C))**

Tensile Strength (6 ply laminate).....	16,472psi (114MPa)
Tensile Elongation (cast bar).....	1.4%
Flexural Strength (6 ply laminate).....	7,865psi (13MPa)
Flexural Modulus (6 ply laminate).....	1,068,000psi (7,364MPa)
Compressive Strength (cast bar).....	18,336psi (126MPa)
Cured Hardness (cast bar).....	80-84 Shore D
Impact Strength (cast bar).....	6.16 in-lbf/in
Heat Deflection Temperature @ 66 psi (cast bar).....	137°F (58°C)

EL-320 Series Tech/Revised 12/30/14  
Supersedes 5/21/14

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