

ECCOBOND[®] 45 CLEAR

Adjustable Flexibility,
Transparent Adhesive

Key Feature	Benefit

Product Description :

ECCOBOND 45 CLEAR is a two part epoxy based adhesive. The flexibility of the cured system may be adjusted by the user to suit his needs merely by changing the ratio of ECCOBOND 45 CLEAR to CATALYST 15 Clear. Cure may be effected at room temperature or at an elevated temperature. At room temperature the pot life of ECCOBOND 45 CLEAR and CATALYST 15 Clear is 2 - 3 hours. Adhesion to glass, metals, ceramics and many plastic materials is excellent.

Applications :

ECCOBOND 45 CLEAR has proven useful in adhering two materials with widely different coefficients of thermal expansion. It has served as a good vibration damper, and has held against high G-forces where more rigid adhesives have failed. Where peel strength is highly important, the more flexible mixes of ECCOBOND 45 CLEAR have proven very effective. Applications may be done by brush, knife or roller. Toluene, MEK or lacquer thinner can be used for clean-up.

Instructions For Use :

The rigidity of the cured adhesive film may be varied by varying the ratio of ECCOBOND 45 CLEAR to CATALYST 15 Clear.

Rigid Formulation

100 parts by weight of ECCOBOND 45 CLEAR
100 parts by weight of CATALYST 15 Clear

Simi Rigid Formulation

100 parts by weight of ECCOBOND 45 CLEAR
200 parts by weight of CATALYST 15 Clear

Flexible Formulation

100 parts by weight of ECCOBOND 45 CLEAR
300 parts by weight of CATALYST 15 Clear

These formulations are offered as a guide to the ratios required for different degrees of flexibility. For specific adhesion problems, the user may find that other ratios in between the above values will lead to optimum results.

1. Clean surfaces to be bonded thoroughly.
2. Weigh out the desired amount of ECCOBOND 45 CLEAR. Add the correct amount of CATALYST 15 Clear depending on the formulation selected. Mix thoroughly. Pot life at room temperature is 2 to 3 hours. Evacuation is not required with adhesives, since they are not applied in thick sections.
3. Apply and squeeze out the excess. Cure is effected in approximately 8 hours at room temperature. Bond strength will increase during the following 24 hours. Rapid curing is possible, for example, 45 minutes at 70°C or 15 minutes at 100°C.

Properties Of Material As Supplied :

Property	Test Method	Unit	Value
Chemistry			epoxy
Appearance	Visual		
Density	ASTM-D-792	g/cm ³	
Mixed Viscosity at 25°C	ASTM-D-2392	Pa.s	

Cure Schedule :

Please refer to the instructions for use above.

Properties Of Material After Application (Rigid Formulation) :

Property	Test Method	Unit	Value
Hardness	ASTM-D-2240	Shore D	80 minimum
Flexural Strength	ASTM-D-790	MPa	55 minimum
Flexural Modulus	ASTM-D-790	MPa	
Tensile Strength	ASTM-D-638	MPa	
Impact Strength	ASTM-D-256	J/cm	5
Thermal Conductivity	ASTM-D-2214	W/m.K	
Coefficient Of Linear Thermal Expansion	ASTM-D-3386	$10^{-6} K^{-1}$	
Linear Shrinkage During Cure	ASTM-D-2566	%	
Volume Resistivity	ASTM-D-257 at 25°C	Ohm.cm	10^{13} minimum
Dielectric Constant at 10^2 to 10^{10} Hz	ASTM-D-150		3,2 to 3,9
Dissipation Factor at 10^2 to 10^{10} Hz	ASTM-D-150		0,03 to 0,06
Dielectric Strength	ASTM-D-149	kV/mm	18
Moisture Absorption In 7 Days	ASTM-D-570	%	
Machinability			
Service Temperature Continuous Use	ASTM-D-794	°C	-55 to +90
Intermittent Use	ASTM-D-794	°C	-55 to +120
Young's Modulus	ASTM-D-638	MPa	
Tensile Lap Shear Strength	ASTM-D-1002	MPa	15 minimum

Storage And Handling :

Store ECCOBOND 45 CLEAR in well sealed, unopened containers at temperatures between 18°C and 25°C.

Storage Temperature (°C)	Usable Shelf Life
18 to 25	1 year

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Health & Safety :

It is recommended to consult the Emerson & Cuming product literature, including material safety data sheets, prior to using Emerson & Cuming products. These may be obtained from your local sales office.

Attention Specification Writers :

The technical information contained herein is consistent with the properties of the material and should not be used in the preparation of specifications, as it is intended for reference only. For assistance in preparing specifications, please contact your local Emerson & Cuming office for details. Please contact Emerson & Cuming Quality Assurance for test method details.

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