



E-BOND EPOXIES, INC.
 P.O. BOX 23069
 FORT LAUDERDALE, FL 33307
 TOLL FREE: 877-265-0011
 PH: 954 566-6555
 FAX: 954 566-6663
 E-MAIL: info@ebondepoxies.com

E-Bond 1240/1241 & 1238/1239

STANDARD SET EPOXY ADHESIVE

FOR PLACEMENT OF TRAFFIC MARKERS



FOR PROFESSIONAL USE ONLY
NOT FOR SALE TO OR USE BY THE GENERAL PUBLIC

E-Bond 1240/1241 a Standard Set Epoxy Marker Adhesive Non Sag grade for Raised and Recessed traffic markers.
 E-Bond 1238/1239 a Standard Set Epoxy Marker Adhesive of Self Leveling grade, for Raised snow plowable markers.
 E-BOND 1240/1241 conforms to AASHTO M-237, type II. E-BOND 1238/1239 conforms to AASHTO M-237 type IV

DESCRIPTION

E-BOND Standard Set Epoxy Adhesives are 100% solids, SOLVENT-FREE, 2 COMPONENT EPOXY STRUCTURAL ADHESIVE. E-BOND 1240/1241 is primarily designed for placement of Raised and Recessed traffic markers; E-Bond 1238/1239 a Self leveling grade for Raised Snow plowable markers.

The product may be mixed by hand or used with automatic mixing and metering equipment for rapid placement of markers on highway surfaces.

ADVANTAGES:

- Easy mix ratio 1 to 1, A to B
- Fast setting, provides high early strength
- Non-abrasive formula permits application with automated equipment
- Provides excellent adhesion to most structural materials
- Low temperature cures as low as 40 °F (4.4 °C)* *
- Excellent bonds to hardened, Portland cement and asphalt concrete

PHYSICAL PROPERTIES

TYPE

E-Bond 1238/1239 Self Leveling Standard Set Epoxy Adhesive
 E-Bond 1240/1241 Non Sag Standard Set Epoxy Adhesive

	<u>1238 / 1239</u>	<u>1240 / 1241</u>
COLOR		
Part A – Resin	White	White
Part B – Hardener	Black	Black
Ad-mix	Gray	Gray

POT LIFE / ASTM-C-881

	<u>1238 / 1239</u>	<u>1240 / 1241</u>
	7-13 minutes	7-13 minutes

VISCOSITY / ASTM D-2393

	<u>1238 / 1239</u>	<u>1240 / 1241</u>
Comp. A-resin poises	350-600 (35-60 PaS)	2000-4000
Comp. B-hardener poises	350-600	2000-4000
Ad-mix poises	350-600	2000-4000

BOND STRENGTH TO CONCRETE

	<u>1238 / 1239</u>	<u>1240 / 1241</u>
Minutes to reach 210 psi. (1.5 Mpa)	90 minutes	90 minutes

	<u>1238 / 1239</u>	<u>1240 / 1241</u>
SLANT SHEAR STRENGTH		
24 Hrs. at 25°C	2000 psi min. (13.8 Mpa)	2000 psi min.
Plus 24 Hr. water soak at 25°C	1500 psi min. (10.3 Mpa)	1500 psi min.

TENSILE ADHESION & COHESION

	<u>1238 / 1239</u>	<u>1240 / 1241</u>
To ceramic button bottom	700psi min. (4.8 Mpa)	700 psi min.

TEMPERATURE CONSIDERATIONS

Surface temperature and ambient temperature is quite often beyond the control of the applicator. The applicator should, however, consider the effects of temperature on the product.

A product that is stored in a temperature range of 80° to 90° F (26.7-32.2° C) will thin out slightly, making it easier to hand mix. A product mixed at a warmer temperature will have a slightly shorter pot life, perhaps in the neighborhood of 6 min. but faster setting time, thus permitting the area to be opened earlier to traffic.

Product temperatures below 70° F (21° C) thickens very rapidly to a heavy paste making it difficult to mix, provides longer working time, with resulting much longer setting time and delay in opening the areas to traffic

Automatic metering in mixing equipment is the ideal way of using the products. This equipment has the ability to warm the product up to 110 ° F (43.3° C), automatically meters the correct portion and provides thorough mixing.

When applying on road surfaces when it's anticipated that the surface will be in the 50's F (10's C), it is recommended that both components be stored at 77 ° to 80 ° (25°-26.7° C) for 24 hours prior to use.

GUIDE TO OPENING TO TRAFFIC BASED ON SURFACE AND EPOXY TEMPERATURE

The following guide is based on a temperature ratio of both road surface and epoxy adhesive. Should the road surface be at a lower temperature than that of the adhesive then adjustment for set time must be made.

MARKER ADHESIVE GUIDE

<u>Temp. F (C)</u>	<u>Set Time (hrs.)</u>
110 (43.3)	1/4 to 1/2
100 (37.8)	1/2 to 3/4
90 (32.2)	1 hr. to 1-1/2 hrs.
80 (26.7)	1-1/2 hr. to 2-1/4 hrs.
70 (21)	3 to 4 hrs.
60 (15.6)	4 to 5 hrs.
50 (10)	6 to 7 hrs.

SURFACE PREPARATION

All surfaces should be clean, free of dirt, dust, grease, oil or any foreign material that will prevent the proper bond of the adhesive to the surface. The surfaces should be structurally sound and secure.

For best results, it is recommended that the surfaces be lightly sandblasted before application of the adhesive.

Do not apply epoxy adhesive or markers unless the road surface is dry.

MACHINE MIXING

Both components should be stored for a minimum of 24 hours prior to use at temperatures of 77°F (25° C). or higher. It is recommended that in-line heaters be used in automatic mixing and metering equipment to raise the temperature of the product prior to mixing and use. Much more rapid cures can be obtained if both components are heated while in the machine at 110°F (43.3° C) to 120°F (48.9° C).

The applicator is particularly cautioned to check the mixing and metering heads prior to commencement of work each day. It is important that he accurately determine that he has obtained a proper mixing ratio of 1 part of Component A to 1 part of Component B by volume. After determining that the ratio is correct, he should also determine if there is a thorough and complete blend to a uniform gray.

HAND MIXING

Accurately measure out equal amounts of Component A and Component B. Only mix the amount of material that can be used within the working life of the product. At normal temperatures it is not recommended to mix over 3 or 4 oz. (89-118 ml) at a time.

Thoroughly blend both components until an even gray is obtained.

APPLICATION OF EPOXY

For hand mixing and machine mixing, a predetermined amount of epoxy is placed onto the base of the marker. With the Tube Kits, a predetermined amount is spread to desired thickness on the surface.

Place the marker with the adhesive on the road surface using sufficient pressure to ensure a visible bead of adhesive around the perimeter of the marker. Excessive epoxy in front of the reflector should be scraped aside. Excessive pressure on markers may result in insufficient adhesive remaining under the marker. PROTECT THE AREA FROM TRAFFIC UNTIL THE ADHESIVE IS SET.

NOTE: DO NOT STEP ON MARKERS AFTER PLACEMENT OF THE ADHESIVE. SIMPLE HAND PRESSURE IS ALL THAT IS NEEDED TO ENSURE ADEQUATE PERFORMANCE.

NOTE: DO NOT APPLY WHEN THE ROAD SURFACE OR AIR TEMPERATURE IS BELOW 50° F (10° C). ONLY APPLY WHEN THE ROAD SURFACE AND AIR TEMPERATURE IS ABOVE 50° F (10° C) AND IS ANTICIPATED THAT IT WILL REMAIN ABOVE 50° F (10° C) FOR THE FOLLOWING 24 HOUR AFTER APPLICATION. WHEN APPLYING AT COOLER TEMPERATURE, PRECONDITION MATERIAL TO APPROXIMATELY 77°F (25° C) PRIOR TO APPLICATION.

CAUTION -

- Minimum application temperature 40° F (4.4° C) **
- Do not thin, solvents will prevent proper cure.
- Moisture passing through substrate by pressure during application curing of the epoxy will cause bond failure.

**TEMPERATURES: Will cure at temperatures as low as 40°F (4.4° C), providing the temperatures will be 40° F and rising the next 72 hours. Epoxy materials should be stored at least 24 hours prior to use at 60° F (15.6° C) or higher. Epoxies stored below 60 ° will cause the epoxy to thicken substantially, making it difficult to properly blend the two materials and obtain a proper mating of resin and hardener. Lower substrate temperatures will prolong cure time. Not recommended at temperatures below 40°. A layer of frost will inhibit bond. It is recommended at lower substrate temperatures, to use a product temperature of at least 80° to 85° F (26.7-29.4° C). PROTECT FROM INCLEMENT WEATHER AND FREEZING. If product temperature falls below 50° (10° C), it is recommended that a product temperature of 70° F (21° C) be obtained prior to using.

CAUTION: AT TEMPERATURES ABOVE 80° F (26.7° C) WORKING TIME IS RAPIDLY REDUCED.

E-BOND 1240/1241 EPOXY STANDARD SET ADHESIVE TUBE KITS

DESCRIPTION

E-BOND 1240/1241 is a 100% reactive epoxy adhesive of a non-sag consistency. Simple mixing ratio of 1:1 by volume. Component A is pigmented white, Component B is pigmented black. When correctly mixed and blended provides a uniform grey color.

PHYSICAL PROPERTIES

Color (Mixed)	Gray
Viscosity (Mixed)	Gel
Gel Time	7-13 minutes

BOND STRENGTH TO CONCRETE

Maximum time, minutes to reach 200 psi @ 77° F. (1.4 Mpa) (23.8°C)	90 minutes
Slant Shear Strength (a) 24 hrs. @ 77° F.	2000 psi minimum (13.8 Mpa)
(b) 24 hrs. @ 77° F. plus water soak	1500 psi minimum (10.3 Mpa)

SURFACE PREPARATION

1. All applications should be made on a clean dry surface that is free of dirt, dust, grease, oil or any foreign material that would prevent the proper bond of the adhesive to the surface. The surface should be structurally sound and secure. For best results it is recommended the surface be lightly sandblasted before application of the adhesive.
2. New Asphalt Surfaces - E-BOND 1240/1241 bonds well to weathered asphalt surfaces. It is recommended on new asphalt surfaces, a light sandblasting be utilized to remove any oil contaminants from the aggregate. It is recommended that the user test the performance of the adhesive prior to large scale applications.
3. New Concrete Surfaces - All curing agents should be removed by sandblasting before application of adhesives.

MIXING AND APPLICATION OF ADHESIVE

E-BOND 1240/1241 Epoxy Standard Set Marker Adhesive is available in standard diameter caulking tubes. These caulking tubes, very easily, fit into conventional half barrel ratchet type caulking guns.

E-BOND 1240 Component A Epoxy Resin comes with a black label; E-Bond 1241 Component B Epoxy Hardener comes with a red label.

The recommended procedure is to cut the tip at the area of the full diameter of the tip. Place approximately 1" to 1 1/4" (2.5-3.18 cm) of both components on the properly prepared surface. In warmer weather it requires approximately 2 full pulls of the handles for both Components. In cooler weather, it normally requires approximately 2 1/2 pulls of the handle.

Place both beads of adhesive side by side so that they are the same length.

Use a strong sturdy putty knife and thoroughly blend and mix the adhesive, take extra precautions to insure any component A (Epoxy resin) that was laying on the surface is thoroughly mixed with the hardener. Take the same precautions to insure any Component B (Epoxy Hardener) that was laying on the surface is thoroughly mixed with the resin.

After thoroughly mixing, spread to desired thickness, place the marker in the adhesive using sufficient pressure to assure a visible bead of adhesive around the perimeter of the marker. Excessive epoxy in the front of the reflector(s) should be scraped aside. Excessive pressure on markers may result in insufficient adhesive remaining under the marker.

Protect the area from traffic etc., until the adhesive is set. Note: DO NOT STEP ON MARKERS AFTER PLACEMENT OF THE ADHESIVE. SIMPLE HAND PRESSURE IS ALL THAT IS NEEDED TO ASSURE ADEQUATE PERFORMANCE.

COVERAGE

1 gal. of E-Bond 1240/1241 Epoxy adhesive in theory should be sufficient for 100 Raised traffic markers. In practice, depending on the porosity of the surface, and the rate of application, the coverage may be as low as 60 raised markers per gallon.

Coverage for 1240/1241 for Recessed traffic markers, depending on the groove and depth of groove, can vary from 15-25 markers per gallon.

Coverage of E-Bond 1238/1239 for Raised snow plowable markers can vary according to the cut, but is usually 12-15 markers per gallon.

Coverage for the 22 fl. oz. kit of E-Bond 1240/1241, depending on the surface, the amount of material used, can range from 12-17 markers per kit.

PACKAGING

APPROXIMATE WEIGHT

CASE	6 of 22 oz. (0.651) Tube Kits (6 tubes A & 6 tubes B)	14 lbs. (6.3 kg)
CASE	2 Gallon Unit (7.61) (1 gal. A & 1 gal. B)	27 lbs. (12.2 kg)
	10 Gallon Unit (381) (5 gal. A & 5 gal. B)	128 lbs. (58 kg)

STORAGE: Store dry at 40-85°F (4.4-29.4°C) before using.

CAUTION - For professional use only; not for sale to or use by the general public. E-Bond's epoxies contain alkaline amines. Strong sensitizer; MAY CAUSE SKIN SENSITIZATION or allergic response ranging from a mild wheezing to a severe asthmatic type attack. Avoid contact with skin or eyes. IN CASE OF CONTACT immediately wash skin with soap and water. Flush eyes with water and obtain medical attention. Wear protective clothing, goggles, and barrier cream on all exposed skin

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