Edison Coatings, Inc.

FLASHEPOXY 580

FAST-SETTING & LOW-TEMPERATURE ACRYLATE-EPOXIES

DESCRIPTION:

FLASHEPOXY 580-Series products are fast setting, 100% solids coatings, adhesives and binders used for a wide range of civil engineering, industrial and flooring applications.

FLASHEPOXY 580-Series' acrylate-epoxy technology offers unique benefits, compared with competitive methacrylate monomer and mercaptan-cured epoxy technology, including:

- ❒ Lower odor and toxicity
- ❒ Zero VOC
- ❒ High Strength
- ❒ Non-shrinking
- ❒ Very fast cure
- ❒ Low temperature cure down to -20^0 F
- ❒ Excellent bond to a variety of substrates
- ❒ Moisture tolerant
- ❒ Non-flammable
- ❒ Low viscosity at all temperatures

APPLICATIONS:

FLASHEPOXY 580-Series products can be used in all the same applications as other advanced 100% solids epoxy systems, but are particularly useful for fast-setting mercaptan-free room temperature adhesives, fast setting civil engineering applications, low temperature applications, and fast-curing floor coating and repair situations.

A range of formulations within the series permits selection of the desired set speed under anticipated use temperature and application conditions.

Floor coatings based on ***FLASHEPOXY 580*** feature high gloss and clarity, rapid hardness development and excellent scratch resistance.

Adhesives offer easy application under a wide range of temperatures, from below zero to hot summer weather, with minimized reaction rate changes.

Filled systems, such as toppings and polymer concretes, allow fast development of load bearing capacity without shrinkage.

GRADE SELECTIONS

Four resins and two hardeners form the core of the ***FLASHEPOXY 580 Series***. These permit differing rates of cure at different temperatures, and different working consistencies. In addition, custom formulations are available, which are optimized to particular working temperature, substrate, and processing requirements.

Resins are designated as follows:

580-A	Low viscosity, clear, fast resin
580-AT	Thixotropic, pigmented fast resin
581-A	Low viscosity very fast clear resin
581-AT	Thixotropic, pigmented, very fast

Hardeners are designated as follows:

585-B	Fast curing
586-B	Very fast curing

Hardeners ***#585-B and 586-B*** can also be combined with other ***500 Series*** epoxy resins, such as ***FLEXI-GARD 500-S*** coatings, ***FLEXI-BOND 540*** bonding agent, ***FLEXI-MATRIX 545*** epoxy concrete and ***FLEXI-TOP 550 & 555*** epoxy toppings to produce faster-curing compositions which can be applied at lower temperatures. Consult your Edison Coatings Technical Representative.

TABLE 1. TYPICAL *FLASHEPOXY 580* PERFORMANCE PROPERTIES

Resin	Hardener	Mix Ratio (Vol.)	Pot Life (Minutes)	Tensile Strength (psi)	% Elongation	Flexural Strength (psi)	Compressive Strength (psi)
580-A	***585B***	2:1	8	8,870	2.0%	-	15,300
	586B	3:1	5.5	10,200	4.0%	15,000	12,900
581-A	***586-B***	5:1	2.0	***Similar to 580-A/586B, above***			

SELECTING A SYSTEM:

The following tables can be used to select a system that best meets the requirements of a particular application:

General properties of different resin and hardener combinations are shown in Table 1.

Adhesion to various substrates is shown in Table 2.

Low temperature characteristics are given in Tables 3 and 4.

Recommended selections are in Table 5.

TABLE 2. ADHESION TO VARIOUS SUBSTRATES

Product	Substrate	Tensile Bond Strength (psi)
580-AT/586B	Aluminum	2,900
	Cold Rolled Steel	2,200
	Polystyrene	940
	P. V. C.	360
	Damp Concrete	>300*
581-AT/585-B	Aluminum	3,300
	Cold Rolled Steel	1,600
	Concrete	>300*
581-AT/586-B	Aluminum	2,400
	Cold Rolled Steel	1,200
	Dry Concrete	>300*
	Damp Concrete	>300*
581-A/586-B	Aluminum	2,300

*Denotes cohesive failure in concrete substrate

TABLE 3. EFFECT OF LOW TEMPERATURE ON POT LIFE, 581-B/586-B

Temperature (F/C)		Pot Life (Mins.)
77	25	1
25	-4	2.75
14	-10	3.25
-8	-22	5

NOTE: All values are for a 150g mass, mixed for 2-3 minutes.

TABLE 4. TEMPERATURE EFFECT ON STRENGTH DEVELOPMENT (ADHESION)

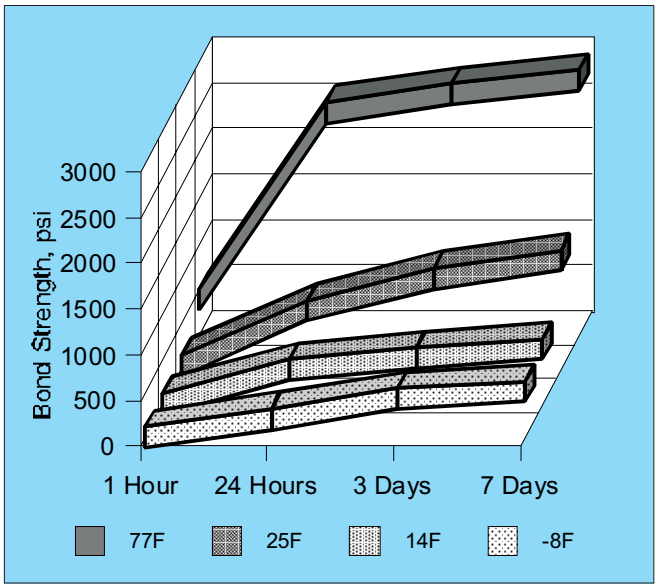

TABLE 5. SYSTEM SELECTION

Application	Condition	Choice	Alternate
Floor Coating	Low Temp. Roller Apply	***580-A 585-B***	***500-S Pt. A 586-B***
	Low Temp., Plural Comp. Spray Apply	***580-A 586-B***	***581-A 586-B***
Filled Mortars, Polymer Concrete	Moderate Temperature	***580-A 585-B***	***580-A 586-B***
	Low Temperature	***581-A 585-B***	***581-A 586-B***
Adhesives	On Plastics	***580-A 586-B***	***580-A 585-B***
	On Concrete and Metals, Room Temp.	***580-AT 585-B***	***581-AT 585-B***
	On Concrete and Metals, Low Temp.	***581-A 586-B***	-

TABLE 6. SYSTEM VISCOSITIES

System	Temperature	Viscosity, cps
581-AT/586-B	77^0F (25^0C)	8-10,000
581-AT/585-B	77^0F (25^0C)	22-40,000
581-AT/586-B	77^0F (25^0C)	1,700-7,800
581-A/586-B	77^0F (25^0C)	1,600-2,700

METHODS OF USE

1. Surface Preparation

The required extent and methods of surface preparation using ***580-Series*** products are similar to the requirements and methods for standard epoxy systems. Surfaces should be clean, damp or dry, free of coatings, standing water, contaminants, dirt, oil, wax or other materials which may hinder adhesion. While abrasive blasting such as shotblasting is the preferred preparation method for flooring, a number of other standard preparation methods are also acceptable. If in doubt, consult your Edison Coatings Technical Representative.

2. Floor Coatings

Low viscosity resins ***580A & 581A*** are suitable for application by squeegee or roller, in clear or pigmented form. The primary consideration in coatings work is ***FLASHEPOXY 580-Series'*** fast curing characteristic, which also translates to very short pot life. The faster formulations in the series can only be handled in extremely small batch sizes, or by spraying though a plural component sprayer, or at very low temperatures. Some of the "slower" formulations afford adequate pot life to allow brief mixing and rapid application by alert, well-trained workmen. Temperature effects should also be considered. See Tables 3 & 4, above. Use by inexperienced or non-professional workers is not recommended.

3. Polymer Toppings, Mortars and Concretes

Methods of combining with aggregates to make toppings, patches and concretes are similar to more conventional epoxy products. It is more important to carefully plan and prepare prior to mixing, however, as fast cure times also involve short pot life. While low temperature slows in all epoxy systems, ***FLASHEPOXY 580-Series*** products are less dramatically effected by low temperature. (See Table 3.) Mixing must be performed using efficient mechanical mixers due to short pot life, and mixing times must be controlled meticulously to avoid setting and damage in mixing equipment.

Priming is typically done using neat resin and hardener, based on ***580A or 581A*** resin and ***585B*** hardener. Mix quickly and thoroughly and apply immediately.

The mortar is prepared by first mixing hardener and aggregates thoroughly, and then adding resin while continuing to mix. Carefully time mixing once resin is added, to provide adequate uniformity of mix, while allowing sufficient time for placement and finishing.

For thin toppings, mix 2-3 parts by weight fine aggregate, such as 60 mesh subangular silica, to one part ***FLASHEPOXY 580 Series***.

For mortars, mix 3-5 parts by weight fine aggregate, such as 60 mesh subangular silica, to one part ***FLASHEPOXY 580 Series.***

For polymer concrete, add 3-4 parts by weight of dried mason?s sand, 1.5 - 2 parts by weight clean, washed and dried gravel, and one part ***FLASH-EPOXY 580 Series.***

For additional information or assistance, consult your Edison Coatings Technical Representative.

4. Adhesives

FLASH-EPOXY 580AT and 581AT are supplied in thixotropic form, to ease placement. Mix small quantities, apply to bonding surfaces, and hold pieces in place, using light pressure, until set. Do not submerge until thoroughly cured, typically 1-7 days, depending on formulation and temperature.

5. PRE-APPLICATION TESTING

Due to rapid hardening characteristics, it is particularly essential that the user taker the time to become familiar with the product's handling characteristics at the actual use temperature and conditions, prior to large scale application.

6. SAFETY, STORAGE & HANDLING :

580 Series products contain hazardous materials. Read and observe all safety and handling guidelines as detailed in the Material Safety Data Sheets supplied with this product.

Avoid skin and eye contact. Hardeners are Corrosive Liquids which can cause burns and injuries to eyes and skin. Wash exposed skin immediately with mild soap and water. In case of eye contact, flush with clean water for at least 15 minutes and consult physician.

Epoxy resins are potential sensitizers by contact or inhalation. Use with adequate ventilation. Sensitized individuals should avoid all contact and should not enter work areas where they may be exposed to product vapors, as this may result in severe allergic reaction.

Store products in tightly closed containers between 40 and 85 degrees Fahrenheit. Store off the floor and avoid drafts, as resin may crystallize at temperatures near or below the minimum storage temperature.Components may be pre-conditioned at 35 - 40 degrees F for up to 24 hours prior to use in low temperature applications, however.

FOR COMMERCIAL & INDUSTRIAL USE

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