CASTEK® A TRANSPO INDUSTRIES COMPANY INC.

Technical Data Sheet

COLOR-SAFE® Color Pavement Marking and Anti-Skid Surfacing

Color-Safe® is a Methyl Methacrylate (MMA) resin system used for pavement area markings and anti-skid surfacing. It is a plural component, liquid applied MMA and catalyst, capable of full cure in a wide range of temperatures without requiring external heat sources. Color-Safe® is typically used for demarcation of crosswalks, bicycle paths, bus lanes and other specially designated areas. It can also be used as a surface to enhance skid resistance on hazardous turns and other areas prone to accidents. It can be applied to either concrete or asphalt using two different methods: mixed resin/aggregate method or spray/broadcast aggregate method. Resin formulations are available in 98:2 and 1:1 ratios to accommodate different types of application equipment. If using glass beads, they must be coated for use with MMA materials.

Application Procedure

Surface Preparation: All surfaces that are to receive Color-Safe® must be thoroughly clean, dry, and free of all dirt, grease, and other contaminates that might interfere with proper adhesion. Clean the pavement surface using high sand blasting or shot blasting. All damaged or deteriorated surfaces must be repaired before applying Color-Safe®. The surface should be visibly dry and the moisture content should be tested according to ASTM D4263 (modified to 2 hours). New asphalt shall have been placed for a minimum of 30 days prior to installation of Color-Safe® and surface oils should not be present. The temperature of the pavement and air should be between 40ºF-100ºF and 5°F above the Dew Point temperature. Relative humidity should be 75% RH maximum. For colder or warmer application temperatures contact a Transpo representative for recommendations on hardener mix ratios.

Mixed Resin and Aggregate Application Method

Mixing and Application

Primer Application [For Concrete Applications ONLY]:
All areas to be coated with Color-Safe® should be masked prior to application. Mix the un-pigmented Color-Safe® primer and hardener (refer to Table 1 for appropriate hardener quantities) for approximately 30 seconds and apply it to the surface that will receive the Color-Safe®. Primer can be applied using 1/4" nap rollers. Application rate should be approximately 80 square feet per gallon however coverage on rough or porous surfaces will be less. After the primer is applied and before it cures, remove all masking.

Mixing: Transpo Color-Safe® resin comes in three components (Color-Safe® pigmented resin, powder hardener, and supplied pre-packaged aggregate). Thorough and complete mixing of these components with a drill mounted paddle mixer is vital for uniform curing and performance. Air/substrate temperature determines the amount of hardener used; refer to Table 1 for the appropriate amount of hardener to be added to the Color-Safe® resin. Using clean, dry plastic buckets, add hardener to Color-Safe® resin and mix until dissolved (approximately 30 seconds) and then add and thoroughly mix the pre-packaged aggregate. After mixing, the Color-Safe® must be applied to the pavement immediately.

Table 1: Hardener per 2 Gallons of Color-Safe® Primer or Resin

Temp ºF(ºC)	Weight %	Grams	Packets (120 g each)
40-59 (0-15)	3	360	3
60-89 (15-32)	2	240	2
90-100 (32-38)	1	120	1

Resin/Aggregate Application: Before mixing and applying the Color-Safe®/Aggregate apply the masking to the area to be coated. Pour the mixed material onto the pavement surface and spread evenly with 3/16" notched squeegees at a rate of approximately 24 square feet per gallon. The surface can be back rolled with 1/4" nap rollers to give a uniform even finish. After the application and before the material cures, remove the masking. At the onset of rain, installation shall cease until the substrate is sufficiently dry to the satisfaction of the engineer. Application of markings** must be completed before contamination of the substrate occurs.

Before applying any line striping or symbols; confirm compatibility of materials with manufacturer
Color-Safe® may be used for application of line striping and symbols

Spray/Broadcast Aggregate Application Method

Mixing and Application

It is important to use the resin formulation that matches the mixing ratio of the equipment that will be used for the application.

Spray applications using a 98:2 formulation with equipment that does not automatically proportion the hardener requires the resin and hardener to be premixed. It is very important that small quantities be mixed as the time available to spray the material is limited and further reduced by high ambient temperatures. The Color-Safe® resin and the powder hardener should be mixed for 30 seconds before adding to the spray equipment. Refer to Table 2 for hardener mixing ratios. If there is an interruption in the spray application the equipment should be cleaned with solvent to prevent material from curing and creating clogging.

Spray applications using a 98:2 formulation with equipment that automatically adds proportioned hardener does not require premixing. The Color-Safe® resin is the same for all 98:2 applications however for this type of equipment the hardener will be a liquid. Random checks should be performed to make sure the hardener ratio is consistent. Application interruptions do not require the equipment to be cleaned prior to the resumption of application.

Spray applications using a 1:1 formulation with equipment that mixes equal parts of resin with hardener prior to the spray head require resin different than 98:2 material. Color-Safe® part A resin will be added to the equipment without any hardener added. Color-Safe® part B is a completely different resin and the powder hardener is to be added to this resin and mixed for 30 seconds prior to adding to the equipment. Refer to Table 3 for the hardener mixing ratios. Applications do not require the equipment to be cleaned prior to the resumption of application.

Primer Application [For Concrete Applications ONLY]:
All areas to be coated with Color-Safe® should be masked prior to application. Refer to Tables 2 and 3 for the appropriate hardener/primer mixing ratios. Application rate should be approximately 80 square feet per gallon however coverage on rough or porous surfaces will be less. After the primer is applied and before it cures, remove all masking. Immediately after primer application, broadcast the supplied aggregate onto the surface at a rate of ½ pound per square foot. After the aggregate is applied and before the material cures, remove all masking

Base Coat/Aggregate Application [For Asphalt Applications ONLY]: All areas to be coated with Color-Safe® should be masked prior to application. Note that the Color-Safe® resin and hardener are identical for both pigmented base coat and pigmented top coat applications. Refer to Hardener Mix Ratio Tables for the appropriate hardener/resin mixing ratios. Base coat application rate should be approximately 60 square feet per gallon however coverage on rough or porous surfaces will be less. Under compacted asphalt will absorb the base coat and coverage could be 40 square feet per gallon or less. Immediately after base coat application, broadcast the supplied aggregate onto the surface at a rate of ½ pound per square foot, assuring all coated areas are covered with aggregate. After the Base Coat/Aggregate is applied and before it cures remove all masking.

Top Coat Application: Before applying the Color-Safe® top coat remove all un-bonded aggregate from the primed surface using brooms or dry compressed air. Reapply the masking in the area to be coated. Make sure that all of the broadcast aggregate is covered with the Color-Safe® resin top coat; application rate should be approximately 40 square feet per gallon. The surface can be back rolled with ¼" nap rollers to give a uniform even finish. After the Color-Safe® is applied and before it cures, remove all masking. At the onset of rain, installation shall cease until the substrate is sufficiently dry to the satisfaction of the engineer. Application of markings** must be completed before contamination of the substrate occurs.

Before applying any line striping or symbols; confirm compatibility of materials with manufacturer
Color-Safe® may be used for application of line striping and symbols

Table 2: Hardener per Gallon of Color-Safe® Primer and Resin
(98:2 spray equipment without automatic proportioning)

Temp ºF(ºC)	Weight %	Grams	30 g Packets
40-59 (4-15)	4-3	240-180	8-6
60-89 (15-32)	2-1	120-60	4-2
90-100 (32-38)	1-.5	60-30	2-1

Table 3: Hardener per Gallon of Color-Safe® Primer and Resin (1:1 spray equipment)

Temp ºF(ºC)	Weight %	Grams	120 g Packets
40-59 (4-15)	8-6	480-360	4-3
60-89 (15-32)	6-4	360-240	3-2
90-100 (32-38)	2	120	1

Table 4: Physical Properties* of Color-Safe®

Property	**Unit of Measure**	**Test**
Resin		
Elongation	30% min	ASTM D638 Type I
Hardness	55-60 Shore D	ASTM D2240
Water Absorption	0.25% max	ASTM D570
Pot Life	15 minutes @ 72°F (22°C)	AASHTO T237
Flash Point	50°F (10°C)	ASTM D1310
Solids Content	99%	ASTM D1644
Aggregate		
Specific Gravity	2.65	ASTM C128
Hardness	7.0	Mohs Scale

*To be used as general guidelines only

Storage

Materials shall be kept in dry protected areas between 40°F – 80°F out of direct sunlight, protected from open flame. Hardener component shall be stored separately from other materials. Manufacturer's specific label instructions and prudent safety practices for storage and handling shall be followed at all times. Materials shall be suitable for use for six months after the date of receipt when stored in accordance with the manufacturer's instructions.

Caution

The binder shall be 100% reactive, solvent-free, acrylic vehicle. Blends with other resins or liquid vehicles shall not be permitted. Coarse aggregate shall be part of the formulation to provide for skid resistance.

Warranty

The following warranty is made in lieu of all other warranties, either expressed or implied. This product is manufactured of select raw materials by skilled technicians. Neither seller nor manufacturer has any knowledge or control concerning the purchaser's use of the product and no warranty is made as to the result of any use. The only obligation of either seller or manufacturer shall be to replace any quantity of this product that proves to be defective. Neither seller nor manufacturer assumes any liability for injury, loss, or damage resulting from use of this product.

05/2014

20 Jones Street, New Rochelle, NY

Phone: (914) 636-1000
Fax: (914) 636-1282

Web: www.transpo.com
Email: info@transpo.com