INVIA PAVEMENT TECHNOLOGIES | Axys®

Axys®–C1 M3 Rapid Dry Formula Mastic Surface Treatment
Product Technical Information

DESCRIPTION

Axys®–C1 M3: a mastic surface treatment with rapid drying properties which allows you to pave your asphalt surface or parking area black again. This central plant mixture of cationic asphalt emulsion, fine aggregate, polymers, and catalysts, Axys–C1 M3 dries quickly and returns your pavement to use sooner while protecting your investment.

JOB SITE STORAGE TANKS

If the mix is being delivered in bulk from a central mixing plant a job site storage tank shall be available that has a minimum capacity of the entire transport load. The storage tank shall have an internal full sweep mixing system with the capability of providing a homogenous material representing the mix design at any given location within the tank. Storage tanks should be agitated at least one time per day for fifteen minutes.

SURFACE PREPARATION

- Surface Cleaning
  - Remove loose material, mud spots, sand, dust, oil, vegetation and other contaminants.
  - When using water to clean pavement, allow cracks and surface to dry thoroughly.
- Protect trees, plants, and other ground cover from damage.
- Prune trees to allow equipment passage underneath.
- Mask off end of streets and intersections to provide straight lines.
- Protect curb, gutter, and sidewalk from spatter, mar, or overcoat.

APPLICATION

- General
  - Two separate application coats are required. The first application must be thoroughly dry and free of any damp areas before the second application begins.
  - Make straight lines along lip of gutters and shoulders. Keep same thickness in these areas. No runoff on these areas will be permitted.
- Application Rate: Based upon weigh tickets and yield tests.
  - First coat is 0.10 to 0.15 gallons per square yard.
  - Total recommended quantity after second coat is 0.25 gallons per square yard minimum.
  - Adjust according to surface conditions, only after obtaining a review and approval from the project manager.
  - High traffic areas may require a third application to increase durability.
- Placement
  - Application should be even and free of obvious light and heavy areas.
  - Do not reduce application rate along edges or around manhole covers.
  - Make straight lines.
  - Acceptable application methods are: hand sprayer, motorized distributor and squeegees.
    a. Provide complete and uniform coverage.
    b. Avoid unsightly appearance from handwork.

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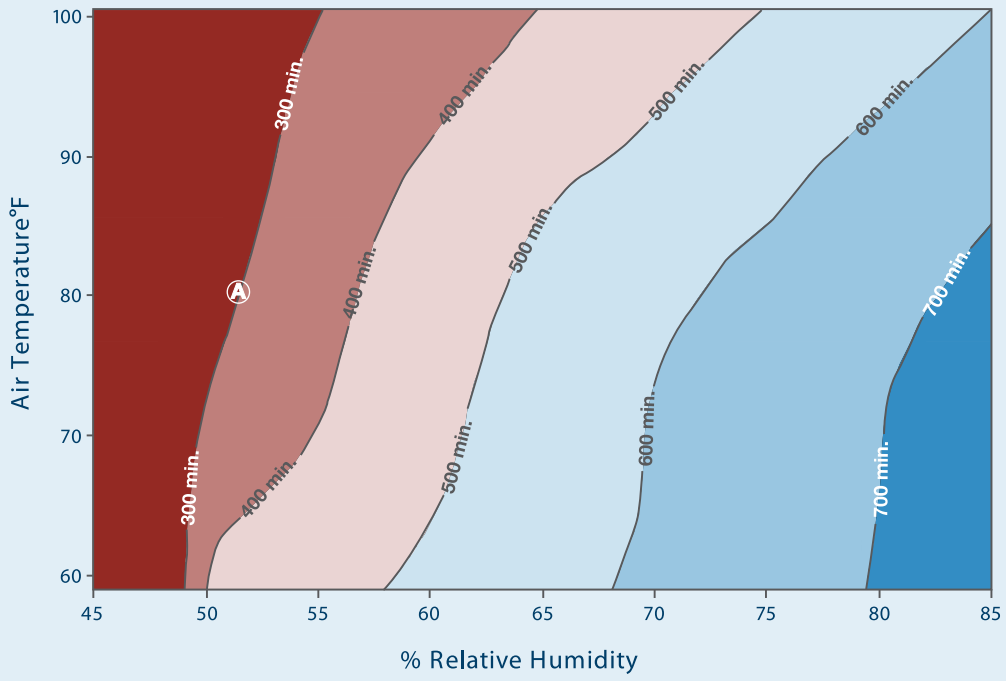
AFTER APPLICATION

- Protect surface treatment material from traffic until it is dry and is capable of supporting traffic without tracking.
- Do not apply permanent lane markings or paint until final application of material is dried to tack free condition or as required by project manager.

WEATHER LIMITATIONS

- Temperature
  - Apply surface treatment material when pavement and air temperature in the shade is above 60˚F and rising.
  - Do not apply surface treatment material when the temperature is projected to be below 32˚F within 72 hours prior to or after planned application.
- Moisture and Other Conditions
  - Do not apply surface treatment material during rain, when road surface moisture is present, or during other adverse weather conditions.

Dry Time Axys – C1 M3 vs. Air Temperature˚F & % Relative Humidity



Dry Time Correction Factors

Wind MPH	Wind Factor in Drying Time
1	100%
5	30%
10	20%
15	15%
20	10%

Pavement ˚ F above Air Temp ˚F	Pavement ˚F Drying Factor
0˚ F	100%
10˚ F	75%
20˚ F	50%
30˚ F	25%

Chart times should be adjusted for steady wind (mph) and pavement temperature conditions.

Ⓐ example @ 80˚F, 50% RH with 5 mph wind and 100˚F pavement, then Dry Time Estimate = 300 x 30% x 50% = 45 minutes

EMULSIFIED ASPHALT

- Use cationic emulsified asphalt, grades CSS-1, CSS-1H or CSS-1HH in accordance with Table 1.

AGGREGATE

- Use aggregate that is clean and free from organic matter or other detrimental substances.
- Ensure the aggregate meets requirements in Table 2.1 and 2.2.

CENTRAL PLANT ADDITIVES

- Polymers, clays, and other additives may be used at the central plant, as necessary, to achieve mix design performance.
- Required minimum polymer content by weight of dry mix shall be 4%.
- The central plant shall use water that is clean, non detrimental, and free from salts and contaminant.
- Contractor shall not dilute mixture in the field with water or any other additive except as approved by the manufacturer.

Table 1: Emulsified Asphalt

Criterion	Standard ASTM / AASHTO	Min	Max
Viscosity, Saybolt Furol at 77˚F, seconds	D7496/T-59	15	100
Residue by Distillation, percent	D6997/T-59	57	--
Penetration at 77˚F, 100 g, 5 seconds (Test on Residue from Distillation)	D5/T-49	15	150
Particle Charge	D7402	Positive	
Sieve Test, percent	D6933 / T 59	--	0.1

Table 2 .1: Aggregate greater than #60 Sieve - Physical Properties

Criterion	Standard AASHTO	Min	Max
Water Absorption, percent	T 84	--	10
Micro Deval, percent	D7428	--	20

NOTES

- Perform physical property tests on aggregate before blending into sealer
- Maximum aggregate size should not exceed #8 sieve

Table 2 .2: Aggregate blend - Gradation

Sieve	Standard ASTM	Master Grading Band Limits Percent Passing
No. 8	C136	100
No. 16	C136	75 – 100
No. 30	C136	65 – 100
No. 60	C136	50 – 90
No. 100	C136	45 – 85
No. 200	C117	40 –80

NOTES

- Perform physical property tests on mineral fines and aggregates that are received before blending into sealer

MIX DESIGN

Table 3: Asphalt Mastic – Mix Design

Test	Standard	Min	Max
Wet-Track Abrasion Loss (3 day soak), g/m^2	TB 100 ASTM D3910 (a) Modified	--	80 grams per square meter*
Asphalt content by Ignition Method, percent	AASHTO T 308 Modified	30	--

NOTES

- *Some competing specifications use the term “percent loss by volume”
- Contact your Axys manufacturer for equivalent value

PRODUCTION & FIELD SAMPLE

Table 4: Asphalt Mastic – Manufacture & Field Samples

Test	Standard Method ASTM / AASHTO	Min	Max
Solids content by evaporation, percent	D6934 / T-59	44	--
Binder content by Ignition Method, percent	AASHTO T 308 Modified	30	--
Rotational Viscosity @ 20 RPM / RV spindle (cPs) @ 25 C	ASTM D2196	800	4000

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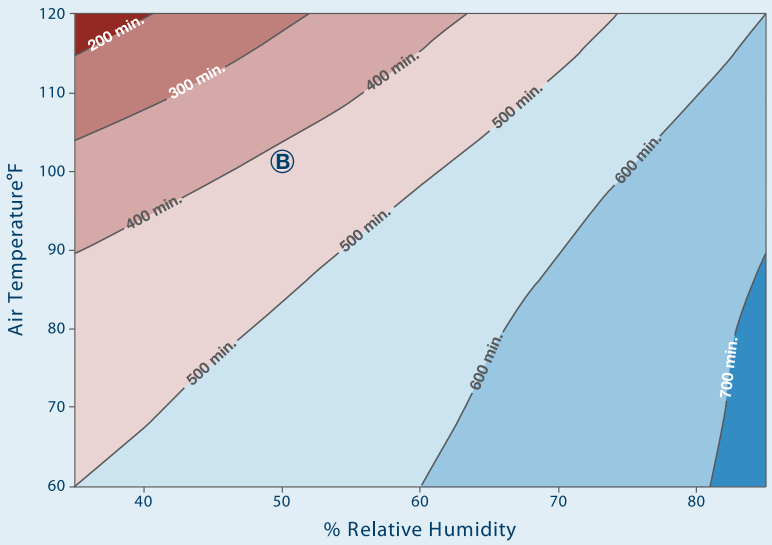
Other Available InVia Mastic Products

Axys® – C2: a mastic surface treatment that combines aggregate, polymers, and catalysts and is specfically formulated to excel during hot weather application. Intended for use on your asphalt surface or parking area.

Dry Time Axys – C2 vs. Air Temperature˚F & % Relative Humidity



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20˚ F	50%
30˚ F	25%

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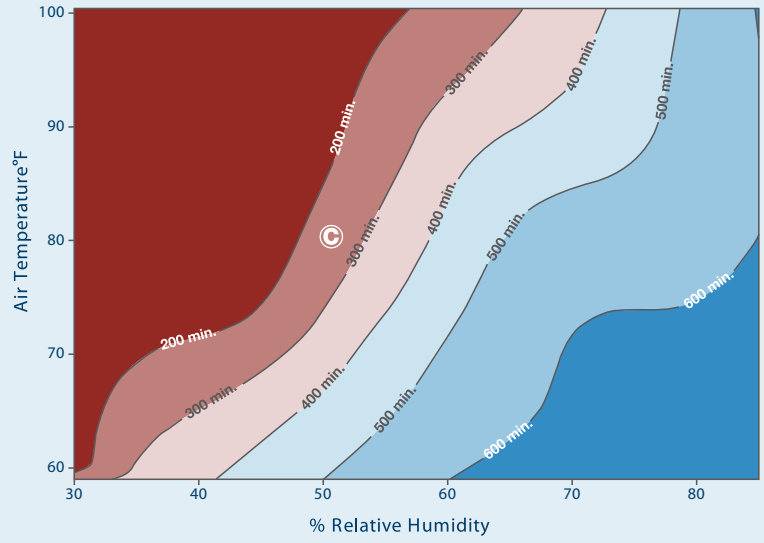
Ⓑ example @ 100˚F, 50% RH with 5 mph wind and 120˚F pavement, then Dry Time Estimate = 400 x 30% x 50% = 60 minutes

Onyx® – R1: a specially formulated frictional mastic surface treatment with high polymer and aggregate content to enhance durability and frictional characteristics. Intended for use on roadway applications.

Dry Time Onyx – R1 vs. Air Temperature˚F & % Relative Humidity



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0˚ F	100%
10˚ F	75%
20˚ F	50%
30˚ F	25%

Chart times should be adjusted for steady wind (mph) and pavement temperature conditions.

Ⓒ example @ 80˚F, 50% RH with 5 mph wind and 100˚F pavement, then Dry Time Estimate = 250 x 30% x 50% = 38 minutes