

MasterSeal® Vehicular Traffic 2850

Hybrid polyurethane-methyl methacrylate waterproofing, traffic-bearing membrane system

PACKAGING

- MasterSeal M 270:
4.66-gallon (17.64 L) pail
- MasterSeal TC 275:
4.78-gallon (18.1 L) unitized kit
- MasterSeal TC 299FS:
4.5-gallon (17 L) pail
- MasterSeal 918FS:
2.5-pound (1.1 KG) bottle
50-pound (22.7 KG) box
- MasterSeal 941 Aggregate:
50-lb (22.72 KG) bag
- MasterSeal 941DR Aggregate:
50-lb (22.72 KG) bag

SHELF LIFE

MasterSeal M 270:	1 year
MasterSeal TC 275:	1.25 years
MasterSeal TC 299FS:	2 years
MasterSeal 918FS:	1 year
MasterSeal 941:	5 years
MasterSeal 941DR:	5 years

STORAGE

Store in unopened containers in a cool, clean, dry area

YIELD

See preferred MasterSeal Deck Coating Solution for total system yield.

COLORS

TC 275: Grey, Charcoal & Black TC TC 299FS: Grey, Charcoal For additional color options, see MasterSeal Traffic Deck Coating Color Portfolio

DESCRIPTION

MasterSeal Traffic 2850 is a fluid-applied, hybrid polyurethane-methyl methacrylate waterproofing system. It allows for fast turnaround time while maintaining durability.

MasterSeal Traffic 2850 is composed of:

- MasterSeal M 270 NP - a two-component, fast-curing polyurethane base coat
- MasterSeal TC 275 – a two-component fast curing aromatic polyurethane top coat
- MasterSeal TC 299FS – a solvent-free, two-component, 100% reactive methyl methacrylate (MMA) resin
- MasterSeal 918FS - a powder hardener that initiates the MMA cure

For projects requiring aggregate, two options are available:

- MasterSeal 941, a hard-wearing, angular aggregate
- MasterSeal 941DR, an aggregate free of respirable crystalline silica

PRODUCT HIGHLIGHTS

- Two-component system utilizes flexible polyurethane and world-class MMA technologies
- Hybrid system provides waterproofing capabilities as well as faster setting times, even in cooler climates, to help reduce downtime
- MasterSeal 941DR aggregate is free of respirable crystalline silica
- High strength with excellent bonding capabilities to a variety of concrete substrates
- Seamless waterproof membrane helps protect concrete from freeze/thaw damage; protects occupied spaces below from water damage and has no seams that may result in leaks
- Excellent chemical and chloride resistance helps protect against common parking deck chemicals including gasoline, diesel fuel, oil, alcohol, ethylene glycol, de-icing salt, bleach and cleaning agents as well as chloride intrusion
- Provides skid resistance to increase safety and offers excellent durability and superior abrasion resistance

INDUSTRIES/SECTORS

- Stadiums
- Parking Garages
- Commercial Construction
- Building and Restoration

VOC CONTENT

- When components are mixed, MasterSeal and MasterTop components have the following g/L VOC contents less water and exempt solvents:

• MasterSeal M 270 Part A:	4 g/L
• MasterSeal M 270 Part B:	5 g/L
• MasterSeal TC 275 Part A:	71 g/L
• MasterSeal TC 275 Part B:	13 g/L
• MasterSeal TC 299FS:	54 g/L

Technical Data Composition
 MasterSeal Traffic 2850 is a two-component polyurethane-MMA hybrid system.

Compliances

- CSA S413
- ASTM C 957

SEALANT WATERPROOFING & RESTORATION INSTITUTE

Issued to: Master Builders Solutions
Product: MasterSeal 2850

ASTM D 412: Tensile Strength of Top Coat
 MasterSeal TC 275 Top Coat: Tensile Strength: 3,270 psi / Elongation: 30%
 MasterSeal TC 299FS Top Coat: Tensile Strength: 1,194 psi / Elongation: 35% Pass ✓

ASTM D 4541: Adhesion of Base Coat
 MasterSeal M 270 NP Pull-off Adhesion: 418 psi Pass ✓

ASTM D 4060: Abrasion Resistance of Top Coat
 MasterSeal TC 275 Top Coat: Abrasion Resistance: 61 mgms loss – mgms loss/1,000 cycles
 MasterSeal TC 299 FS Top Coat: Abrasion Resistance: 50 mgms loss – mgms loss/1,000 cycles Pass ✓

Validation Date: 10/24/22-10/23/27

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DECK COATING VALIDATION
www.swrionline.org

Test Data

PROPERTY	RESULTS M 270 NP	RESULTS TC 275	RESULTS TC 299FS	TEST METHOD
Solids				ASTM D 1259
By weight, %	99	99	100	
Viscosity, cps	3,400	1,600	230-270	ASTM D 2393

*Uncured material

Test Data

PROPERTY	RESULTS	SPECIFICATIONS	TEST METHOD
Crack bridging, MasterSeal M 270 NP	Passes	No cracking	ASTM C 957
Adhesion (Pull-off), psi MasterSeal M 270 NP	400	—	ASTM D 4541
Tensile strength, psi (MPa),			ASTM D 412
Base Coat	3,000 (20.7)	Control	
MasterSeal TC 275	3,000 (20.7)	Control	
MasterSeal TC 299FS	1,050 (7.3)	Control	
Elongation, %,			ASTM D 412
Base Coat	950	Control	
MasterSeal TC 275	30	Control	
MasterSeal TC 299FS	34	Control	
Hardness, Shore A			ASTM D 2240
MasterSeal TC 275	70	Control	
MasterSeal TC 299FS	70	Control	

Test results are averages obtained under laboratory conditions. Reasonable variations can be expected.

MasterSeal Aggregates

PROPERTY	941 RESULTS	941 DR RESULTS
Color	Gray	Green to Gray
Compressive Strength	28,000 psi	
Hardness	6–6.5 Mohns	7 Mohns
Specific Gravity	2.90 g/cc	3.3 g/cc
Bulk Density	102 pcf	85 to 105 pcf
US SIEVE SIZE	% RETAINED ON SIEVE	
#6		
#12	71	2–10
#16	23	10–30
20	2	20–35
30	1	20–40
40	0	7–22

HOW TO APPLY

Surface Preparation

Concrete

- Concrete must be fully cured (28 days), structurally sound, clean and dry (ASTM D 4263). All concrete surfaces (new and old) must be shot blasted to remove previous coatings, laitance and all miscellaneous surface contamination and to provide profile for proper adhesion. Abrasive shot blasting must occur after concrete repair has taken place. Acid-etching is not permitted. Proper profile should be a minimum of ICRI CSP-3 (as described in ICRI document 03732.) For balconies and other pedestrian areas with limited space or access for shot-blasting, alternative mechanical methods can be used to achieve the recommended surface profile.
- Repair voids and delaminated areas with Master Builders Solutions branded cementitious and epoxy patching materials. For application when fastturn repairs are required, MasterSeal 350 can be used to repair patches up to 1.5" in depth when used in aggregate slurry mix. Please refer to the MasterSeal 350 Technical Data Guide for proper application techniques.
- All units must be applied within the specified pot life.

SURFACE PRE-STRIPPING AND DETAILING

- For non-moving joints and cracks less than 1/16" (1.6 mm) wide, apply 25 wet mils (0.6 mm) prestripping of MasterSeal M 270 NP. MasterSeal M 270 NP must be applied to fill and overlap the joint or crack 3" (76 mm) on each side. Feather the edges.
- Dynamic cracks and joints over 1/16" (1.6 mm) wide must be routed to a minimum of 1/4 by 1/4" (6 by 6 mm) and cleaned. Install bond breaker tape to prevent adhesion to bottom of joint. Prime joint faces only with MasterSeal P 173 and fill with MasterSeal SL 1™, NP1™. For joints deeper than 1/4" (6 mm), use appropriate backer rod. For cracks, sealant should be flush with the adjacent surface. For expansion joints, sealant should be slightly concave. After the sealant has cured, apply 25–30 wet mils (0.64–0.77 mm) of MasterSeal M 270 NP pre-stripping over the cured sealant, overlap the joint 3" (76 mm) on each side.

- Sealed joints 1" (25 mm) wide or less can be coated over with the MasterSeal Traffic system. Expansion joints exceeding 1" (25 mm) wide, including the primary wide expansion-joint system, are not to be coated so they can perform independently of the deck coating system.
- Form a sealant cant into the corner at the junction of all horizontal and vertical surfaces (wall sections, curbs, columns) by priming with MasterSeal P 173 and applying a 1" (25 mm) wide bead of MasterSeal NP 1. Tool to form a 45° cant. Apply masking tape to the vertical surfaces 4–5" (102–127 mm) above the sealant cant to provide a clean termination of the vertical detail coat. After the sealant has cured, apply 25 wet mils (0.64 mm) of MasterSeal M 270 NP over the cured cant up to the masking tape and 4" (102 mm) onto deck surface.
- Where the coating system will be terminated and no wall, joint, or other appropriate break exists, cut a 1/4 by 1/4" (6 by 6 mm) keyway into the concrete. Fill and coat keyway during application of MasterSeal M 270 NP.

HOW TO APPLY

MIXING – MASTERSEAL M 270 NP

- Precondition both A and B components to a temperature of approximately 70 °F (21 °C).
- Add entire contents of Part A into Part B. Mix components with a slow-speed drill (400–600) rpm, for a minimum of 3 minutes. Scrape down sides and bottom of mixing vessel, then mix again for 2 minutes. Keep the mixing paddle submerged during mixing to avoid adding air into the mixture.

MIXING – MASTERSEAL TC 275

- Precondition both A and B components to a temperature of approximately 70 °F (21 °C).
- Add entire contents of Part A into Part B. Mix components with a slow-speed drill (400–600) rpm, for a minimum of 3 minutes. Scrape down sides and bottom of mixing vessel, then mix again for 2 minutes. Keep the mixing paddle submerged during mixing to avoid adding air into the mixture.

MIXING – TC 299FS

- Measure batches consisting of 1-gallon of resin and 6-ounces of pigment into a 5-gallon pail.
- Add proper amount of hardener and mix for 30–60 seconds using a pigment dispersing blade (consider a Cowles blade). Minimum 2,500 rpm is required. Reference mixing chart below.
- Because of the quick rate of cure of this product, do not mix more batches than can be applied in a 5-10 minute application period.

NOTE: A batch consists of:

MasterSeal TC 299FS - 1 gallon

MasterTop PGM 155 - 6 ounces

MasterSeal 918FS - ounces determined by temperature

TEMPERATURE	Master Seal TC 299FS
	HARDENER (VOL.OZ)
24°F (-4.4°C)	8
29°F (-1.7°C)	8
30°F (-1.1°C)	8
33°F (0.6°C)	8
35°F (1.7°C)	7.5
40°F (4.4°C)	7
45°F (7.2°C)	6.5
50°F (10.0°C)	6
55°F (12.8°C)	6
60°F (15.6°C)	5
65°F (18.3°C)	5
70°F (21.1°C)	4.5
75°F (23.9°C)	4.5
80°F (26.7°C)	4.5
85°F (29.4°C)	4.5
90°F (32.2°C)	4.5

APPLICATION

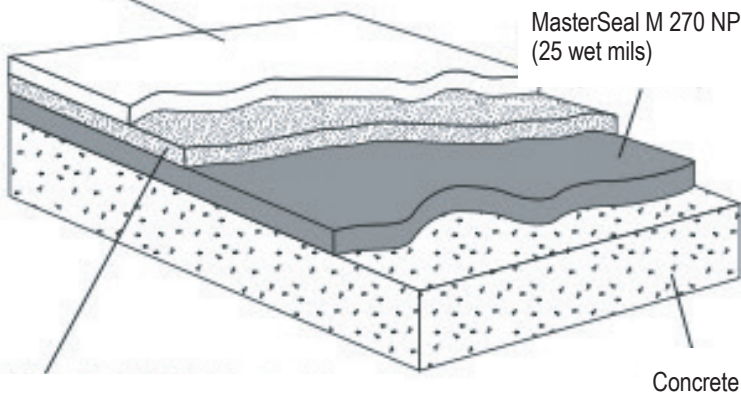
1. Apply 25 wet mils (0.64 mm) of MasterSeal M 270 NP with proper notched squeegee at the rate of approximately 60 ft²/gal (1.47 m²/L). Allow base coat to cure 3-4 hours.
2. Apply 20 wet mils (0.30-0.51 mm) of MasterSeal TC 275 intermediate topcoat using a properly notched squeegee at the rate of approximately 80 ft²/gal (1.47 m²/L). Immediately back roll to evenly level Top Coat.
3. AGGREGATE TO REFUSAL METHOD
Immediately broadcast MasterSeal 941, 941DR or equivalent 16-30 mesh, rounded silica sand into the wet coating at the rate of 20-30 lbs per 100 ft² (1.0-1.5 kg/m²). Immediately after the aggregate is broadcast and while the coating is still wet, blow any excess aggregate via a portable blower forward into the wet coating. Do not overlap aggregate: it is acceptable to have localized wet spots in the aggregate surface after completion of this method. This process requires coordination between all members in the work crew. The blower operator wearing clean spiked shoes, should blow the excess aggregate forward towards the freshly applied and backrolled topcoat. In this method, the coating should not accept additional sand, minimal excess aggregate is on the surface, less aggregate is used and the textured appearance should be fairly uniform.

4. Allow to cure 4-6 hours or until there is no moisture on the surface of the aggregate/membrane. Remove all excess or loose aggregate by sweeping or vacuuming before application of the topcoat. Apply the MasterSeal TC 299FS immediately after mixing by pouring directly onto the primed and cured deck surface. Distribute by means of heavy nap, solvent-grade roller, brush or squeegee to tired thickness, at the rate of 25 wet mils or 60sf/ gal (1.47 m²/L).
5. Top coat will cure in one hour. Wait 3 hours before opening to traffic. Existing environmental conditions effect the allowable time period.

Important Note: All coverage rates are approximate and may vary due to the application technique used. Coverage rates are affected by substrate texture, choice and distribution of aggregate, intermediate aggregate load and environmental conditions and application methods and are not under the control of Master Builders Solutions. Ensure that an adequate amount of aggregate is utilized to achieve required slip resistance.

HEAVY DUTY TRAFFIC SYSTEM

MasterSeal TC 299FS
(25 wet mils)



MasterSeal TC 275 (20 mils)
MasterSeal 941 / 941DR (broadcast)

MOCK-UP

1. Provide mockup of at least 100 ft² (9.3 m²) to include surface profile, sealant joint, crack, flashing and juncture details and allow for evaluation of slip resistance and appearance.
2. Install mockup with specified coating types and with other components noted.
3. Locate where directed by architect.
4. Mockup may remain as part of work if acceptable to architect.

CLEAN UP

Clean tools with MasterTop SRS 100CLN, an MMA solvent. Other solvents such as xylene or acetone may also be used. Collect and dispose of all site waste.

CURING TIME

After top coat, allow an additional 2-3 hours before opening to vehicular traffic. Extend the curing time in cool-weather conditions

MAINTENANCE

See MasterSeal Traffic maintenance technical bulletin.

FOR BEST PERFORMANCE

- MasterSeal NP 100 and MasterSeal NP150 should not be used in conjunction with this urethane deck coating system due to potential for curing issues.
- If vapor drive is present or suspected, please consult with your local Master Builders Solutions representative prior to system application.
- MasterSeal M 270 NP, TC 275 and TC 299FS have very short working times (approximately 15 minutes) (at 70 °F 50% RH). Once the material has been mixed, the coating must be poured on the surface and applied immediately.
- Minimum application temperature is 40 °F (4 °C) for polyurethane materials.
- If areas of inadequate slip resistance exist, an additional top coat back rolled with aggregate is required. (after cure)
- Do not apply to concrete that is outgassing.
- Warm temperatures will shorten working time; plan work accordingly
- Concrete should have a minimum compressive strength of 3,000 psi (21 MPa) and be cured for a minimum of 28 days.
- Do not apply MasterSeal Vehicular Traffic 2850 to concrete slabs on grade, unvented metal pan decks or split slab applications with

a waterproofing membrane between slabs. Contact Master Builders Solutions Technical Services for more information.

- Be sure to allow for movement in the deck by the proper design and use of expansion and control joints.
- Select the proper type and amount of aggregate to achieve desired slip resistance.
- Contact Technical Service when substrates are over 90 °F (32 °C) or under 40 °F (4 °C) or when applying to decks containing between slab membranes.
- The best method to ensure the proper wet film thickness is the use of a grid system. Divide the surface to be coated into grids and calculate the square footage of each. Refer to coverage rates to determine the quantity of coating needed for each grid to arrive at the required mil thicknesses. For example, one pail of MasterSeal M 270 NP should cover approximately 255–280 ft² or a minimum grid of 16 x 16 ft at 25 wet mils. Verify via site mockup.
- Avoid application when inclement weather is present or imminent.
- Do not apply to damp, wet, or contaminated surfaces.
- Not suitable for use where chained or metalstudded tires will be used.
- Proper application is the responsibility of the user. Field visits by Master Builders Solutions personnel are for the purpose of making technical recommendations only and not for supervising or providing quality control on the jobsite.
- CAD & PDF deck coatings details are available for download from our website, Master Builders Solutions Customer Support can direct you to the site.
- On steep ramps in excess of 15%, contact your local Master Builders Solutions representative. Do not use self-leveling grade product on slopes greater than 15%. Do not coat expansion joints over 1" (25 mm) wide.

NOTES

- MasterSeal Vehicular Traffic 2850 is a multiple component system that utilizes a methacrylate (MMA) resin. It is critical that the instructions in the Safety Data Sheet and on the product label for every component of the system be read, understood and followed. MMA resins are flammable liquids

in their uncured state. Smoking, open flames or sparks should not be permitted during the handling of this product. Explosion safe ventilation must be used during the application to minimize vapor collection in the installation area and to improve the overall air quality for the crew.

- MMA resins have a discernible odor. This smell makes people aware of the presence of MMA. The material has an extremely low odor threshold of 83ppb (parts per billion) which dissipates upon curing (approximately 45 minutes to 1 hour). This low odor threshold can create concerns when working in areas where the public can be exposed to the odor.
- This odor, when below permissible exposure limits, does not pose a hazard. It is the responsibility of the applicator to insure proper ventilation is established on site to avoid potential odor concerns as well as communicate product expectations to tenants or the surrounding public.
- In cases where the general public may be affected, an exhaust system will need to be set up. This needs to be planned ahead of time in order to make certain that the proper equipment will be accessible on site. Many projects will require the "tenting off" of certain areas.

HEALTH, SAFETY AND ENVIRONMENTAL

Read, understand and follow all Safety Data Sheets and product label information for this product prior to use. The SDS can be obtained by visiting www.master-builders-solutions.com/en-us, e-mailing your request to mbsbscst@mbcc-group.com or calling 1(800) 433-9517. Use only as directed. **IN CASE OF EMERGENCY: Call CHEMTEL +1 (800) 255-3924 or if outside the US or Canada, +1 (813) 248-0585.**

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