

# CrownMMA Flex™

## TECHNICAL DATA SHEET

Revision Date: 08/09/18

**Product System Numbers: See chart below**

Methyl Methacrylate Flexible Floor Coatings Product

### DESCRIPTION

**CrownMMA Flex™ is a 100% reactive medium viscosity, flexible thermosetting methyl methacrylate resin, the key component of its exceptional high-performance structural physical properties. The CrownMMA Flex resin is hardened by the addition of CrownMMA BPO. CrownMMA Flex systems are rapid curing (1-2 hours and can be applied at temperatures as low as -20° F. These systems exhibit excellent thermal shock qualities that can resist cracking and are best suited for projects requiring very rapid installation and cure times such as coolers/freezers, and exterior decks**

### MMA Product Selection Guide

Crown Polymers offers a complete line of flexible methyl methacrylate for the everyday substrate movement and where quickest return to services are required or low temperature application, -20°F, is needed. This system is composed of 100% MMA elastomeric basecoat resins, with a decorative colored quartz aggregate, decorative flakes or silica aggregates, and topped with a clear or pigmented MMA top coat. Recommended installed thickness is 3/16 inch to 1/4 inch depending on intended service and project requirements.

Prod #	Name	Description
8801	CrownMMA™ Flex-Primer	This is the premier MMA primer for hard to bond substrates such as quarry tiles and metal. Its unique urethane backbone and flexibility gives excellent bonding to countless surfaces. Not recommended direct to concrete. MUST USE CrownMMA Sealer for direct to concrete application.
8802	CrownMMA™ Flex-Base	The CrownMMA Flex-Base is a flexible mid-layer/ body coat. This product is designed for applications that require broadcasting, slurry, or self-leveling to achieve a thin- to- thicker coat or the resurfacing of spalled concretes.
8803	CrownMMA™ Hyper-Flex	The CrownMMA Hyper-Flex yields a high level of flexibility and elongation property. The product's high flexibility is ideal for freezers and colder applications. It is also ideal for filling in joints and cracks as well as extreme substrates movements areas.
8704	CrownMMA™ ThermalTop	The Flooring based on CrownMMA Flex-Base and sealed with CrownMMA ThermalTop are especially suitable as for kitchen floors and wash bays. CrownMMA ThermalTop exhibits excellent thermal shock and high heat resistance.
8804	CrownMMA™ FlexTop UV	This MMA topcoat exhibits excellent flexibility and UV resistance. It is ideal for outdoor applications especially, pool decks and stadiums. CrownMMA Flex-Top UV is particularly advantageous in areas that are exposed to snow, rain, or extreme weather, or require to service heavy vehicular traffic, or foot traffic such as parking lots, balconies, or zoo enclosures.
8712	CrownMMA™ Accelerator (Accelerator 101)	This MMA is an accelerator for COLD TEMPERATURES. It is ideal at a temperature of 40°F. CrownMMA Accelerator must be used in addition to the amount of 8706 CrownMMA BPO used at the 40°F or 30°F level. CrownMMA Accelerator – product no. 8712 must be first added into the MMA resin, mix thoroughly, then add CrownMMA BPO product no. 8706. As a rule of thumb, add about 0.5oz of CrownMMA Accelerator by volume per gallon of resin @ 39° to 32°F, increase the CrownMMA Accelerator up to 2.0 oz by volume per gallon of resin @ -20°F, increasing the quantity gradually in a consistent linear progression as the temperature decreases. Refer to the CrownMMA Flex BPO and Accelerator chart.

# PHYSICAL & CHEMICAL DATA / MECHANICAL PROPERTIES

## PHYSICAL CHARACTERISTICS

DESCRIPTION	PHYSICAL PROPERTIES
Components	2 Sides
Visual Appearance	Satin
Density	8.40 lb/gal
VOC content	<100g/l
Pot Life @ 70°F 50% RH	20 minutes
Equipment	brush, roller, squeegee (for SL only)
Theoretical Coverage	80-100 ft <sup>2</sup> /gal @ 15-20 mils WFT
Dry to Touch @ 70°F, 50%RH	1 hour
Full Cure	1 hour
Recoat Time @ 70°F	1 hour
Min. Application Temp.	-20°F

## CHEMICAL DATA @ 70°F

DESCRIPTION	DATA
pH Range	4 to 13
Inorganic Acids	Good
Organic Acids	Good
Alkali	Excellent
Solvents	Good
Hydrocarbons	Good

### PACKAGING

Available in 1 gallon and 5 gallon pails

### COLORS

Pigmented Only – See “Crown’s Color Guide”.

### STORAGE

This product has a minimum shelf life of one year when stored in a dry area at 50-90°F in the original sealed container.

## MECHANICAL PROPERTIES

CrownMMA™ SYSTEM PRODUCTS	CrownMMA Flex-Primer	CrownMMA Flex-Base	CrownMMA Hyper-Flex	CrownMMA FlexTop (526)	CrownMMA FlexTop UV
Surface Prep Required	ICRI CSP-3	N/A	N/A	N/A	N/A
Adhesion, ASTM D7234 (concrete)	>400 PSI, Concrete Failure	N/A	N/A	N/A	N/A
Tensile Strength, DIN EN ISO 604	42 MPa/ 6091 psi	4 MPa/ 580 psi	2 MPa/ 290 psi	33MPa/ 4786 psi	21 MPa/ 3045 psi
Tensile Elongation, DIN EN ISO 527	3%	181%	240%	2.3 %	45%
Hardness, Shore D, DIN 53505	N/A	Shore A 70	Shore A 43	Shore A 72	Shore A 63
Water Absorption, ASTM D570	<0.1%	<0.1%	<0.1%	<0.1%	<0.1%
Abrasion Resistance, ASTM D4060	N/A	N/A	N/A	40 mg loss	30 mg loss

# PRELIMINARY FLOOR INSPECTIONS & SURFACE PREP

## FEATURES

- Fully functional in one hour
- 100% reactive, Low viscosity for excellent flow and concrete penetration
- Complete system can be build-up to ¼” thickness within 1 day.
- Very good chemical resistance
- Excellent UV resistance
- Thermal shock resistance
- Excellent scratch and wear resistance
- Crack resistant and waterproofing flexibility
- Reduces noise created by mechanical vibrations

## TYPICAL USES

- Coolers/Freezers
- Bridge Decks
- Ship Decks
- Outdoor Pool Decks
- Parking Garages
- Loading Docks
- Automotive and Tooling Industry
- Children Activity Rooms

## LIMITATIONS

This product is best suited for application in temperatures between 60°F and 90°F. Certain colors appear white when scratched such as blue based. Higher temperature will result in faster dry time or poor workability. Color may vary due to batch to batch variation, especially in higher temperature. MMA is sensitive to too much air flow or not enough air movement. MMA cannot tolerate any moisture present in concrete. Do not over roll MMA. MMA is driven by proper film thickness – adhere to recommended spread rate/ film thickness.

## HANDLING/SAFETY

**DANGER.** MMA is highly flammable.

Eye and skin irritant. May cause dermatitis and sensitization.

Always read and understand the product SDS.

Avoid contact with eyes, skin or clothing. Avoid breathing vapor, mist or spray. Use with good ventilation.

## FIRST AID

In case of contact:

Eyes: Immediately flush with water for at least 15 minutes.

Skin: Immediately remove from skin with dry cloth followed by thorough washing with soap and water. Inhalation: Remove to fresh air. If breathing is difficult, give oxygen.

Ingestion: Immediately call a Poison Center/Doctor. Do

NOT induce vomiting. If vomiting occurs naturally, lie on your side, in the recovery position.

## CAUTION

Always read and understand the specific product data guide and SDS sheets before using this product. For more information, contact Crown Polymers.

## PRELIMINARY FLOOR INSPECTIONS

### CHECK THE CONCRETE:

Concrete must be structurally sound and free of curing membrane, paint or other sealer. If you suspect that the concrete has been previously sealed, call Crown Polymers technical support for further instructions.

### CHECK FOR MOISTURE:

Concrete must be dry before application of this floor coating material. Concrete moisture testing must occur. Calcium chloride testing or in-situ relative humidity testing is recommended. Test methods can be purchased at [www.astm.org](http://www.astm.org), see ASTM F1869-11 or F2170-11, respectively or follow manufacturer’s instructions. Moisture readings must be below the defined threshold as specified for each Crown Polymers system to be installed directly to the concrete substrate. Please refer to the appropriate Technical Data Sheet for this information.

Concrete moisture vapor transmission cannot supersede 3lb or more than 75% relative humidity.

**\*Note: Although testing is critical, it is not a guarantee against future problems. This is especially true if there is no vapor barrier or the vapor barrier is not functioning properly, and/or you suspect you may have concrete contamination with oils, chemical spills or excessive salts.**

## APPLICATION

### 1. SURFACE PREPARATION: REQUIRES ICRI CSP 3

This product requires preparation to perform as expected. Substrate must be mechanically profiled (ASTM 4259-83), clean, sound, dry, and contaminate free.

### 2. APPLICATION EQUIPMENT:

Tools: 3” Disposable brush, low speed drill with 3.5” jiffiler blade, 3/8” nap non-shedding phenolic core, and 1/8” v-notch rubber squeegee (only required for self-leveling).

### 3. MIXING:

The temperature of the material should be between 60-80°F (15-25°C). Premix CrownMMA Flex well to ensure liquid uniformity. CrownMMA BPO is required to harden CrownMMA Flex product line. DO NOT apply material unless prepared to do so and on a very short working time.

# THE APPLICATION PROCESS cont.

## CHECK THE TEMPERATURE AND HUMIDITY:

Floor temperature and materials should be between 65°F (18°C) and 90°F (32°C). Humidity must be less than 80%. DO NOT coat unless floor temperature is more than five degrees over the dew point. Proper ventilation is required.

When not in use. Store CrownMMA in a cool and dry place, below 80°F, out of direct sunlight. Do not store near open flame or food. Shelf life is 12 months in the original unopened containers. Separation can occur after extended storage, always premix CrownMMA resin before use. Materials should be inspected for any visible signs of settlement, polymerization, or paraffin coagulation (i.e., clumps, strands). Thoroughly mix pails or drums (use a drum mixer, do not rely on rolling drum on floor) and pour into new containers to inspect resin before use.

TEMPERATURE FOR BPO ADDITIVE	33.8°F (1°C)	41°F (5°C)	50°F (10°C)	59°F (15°C)	68°F (20°C)	77°F (25°C)	86°F (30°C)	95°F (35°C)
CrownMMA™ Flex Primer-8801	10 oz BPO + 0.5 oz Accel.	10 oz BPO	8 oz BPO	6 oz BPO	4 oz BPO	3 oz BPO	3 oz BPO	2 oz BPO
CrownMMA™ Flex-Base-8802	10 oz BPO + 0.5 oz Accel.	10 oz BPO	8 oz BPO	7 oz BPO	4 oz BPO	3 oz BPO	3 oz BPO	2 oz BPO
CrownMMA™ HyperFlex-8803	10 oz BPO + 0.5 oz Accel.	10 oz BPO	8 oz BPO	6 oz BPO	4 oz BPO	4 oz BPO	3 oz BPO	2 oz BPO
CrownMMA™ FlexTop-8704	4 oz BPO + 0.5 oz Accel.	3 oz BPO	3 oz BPO	2.5 oz BPO	2.5 oz BPO	2 oz BPO	2 oz BPO	1.5 oz BPO
CrownMMA™ FlexTop UV-8804	4 oz BPO + 0.5 oz Accel.	3 oz BPO	3 oz BPO	2.5 oz BPO	2.5 oz BPO	2 oz BPO	2 oz BPO	1.5 oz BPO

\*Note: Above values are for per gallon of CrownMMA resin. BPO and Accelerator are based on volume ounces (fl.oz)

Spread Rate: 80 to 100sqft/gallon.

Cleanup: Use CrownMMA cleaner.

**DO NOT THIN**, add BPO in and **thoroughly mix**. BPO must be completely dissolved to ensure rapid curing of the MMA. Separating lot number is very helpful when installing pigmented MMA. This will ensure the colors are consistent.

## 4. ROLL ON

**Priming concrete is critical.** After mixing all contents as instructed, immediately pour out into a ribbon on the surface. Spread the material out evenly and check for desired film thickness by using a wet-film thickness gauge. Roll spread then quickly back roll. Flat squeegee is not recommended for use with MMA. Material is ready for full services in one hour.

### IMPORTANT:

**MMA is thickness driven: 80-100sqft/gallon on average is required (15-20mils).**

**Proper ventilation is required to move air to ensure proper curing.**

### TECHNICAL SUPPORT

For any application questions, please call Crown Polymers technical team.

### DISPOSAL

Dispose in accordance with federal, state and local regulations.



# THE APPLICATION PROCESS cont.

## SDS

Please see Safety Data Sheet (SDS) for safety and precautions. Use Product as directed. Keep out of the reach of children.

---

### DISCLAIMER

All guidelines, recommendations, statements, and technical data contained herein are based on information and tests. The accuracy and completeness of such tests are not guaranteed and are not to be construed as a warranty, expressed or implied. It is the responsibility of the user to document information and tests to determine the intent of the product for ones' own use. The application, job conditions and user assumes all risks and liability resulting from use of the product. We do not suggest or guarantee any hazards listed herein are the only ones, which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use the product. Recommendations or statements, whether in written or verbal, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Crown Polymers makes no claim that these tests or any other tests accurately represent all environments. Not responsible for any typographical errors.

### LIMITED WARRANTY

Crown Polymers warrants its products to be free of manufacturing defects and meets all Crown Polymers current published physical properties. Crown Polymers' sole responsibility shall be to replace the portion of any product proved to be defective. There are no other warranties by Crown Polymers of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Crown Polymers shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Crown Polymers shall not be responsible for the use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee pertaining to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator will be issued. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Crown Polymers reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

