



FLEXCEL[®] II

TECHNICAL DATA

ELASTOMERIC POLYMER COATING: QUICK SET, HIGH BUILD

THE PRODUCT AND ITS USES

Flexcel II is a high build, solvent-free polyurethane elastomer with unsurpassed abrasion resistance. It offers outstanding resistance to impact, abrasion and corrosion. Flexcel II features many key attributes including cold temperature cure, non-flammability, zero VOCs, worker safety and environmental protection. This product cures to a moderately hard, exceptionally tough rubber-like membrane that adheres tenaciously to the surface of the structure. Flexcel II is a perfect choice for immersion and/or atmospheric exposure on projects where crack bridging, immersibility or superior abrasion resistance are critical performance concerns. It is approved for potable water contact.

Flexcel II is supplied in a two component, 1:1 ratio format with balanced viscosities. Two setting times are available. With the Fast Set, virtually unlimited film build is achievable. On small jobs, please refer to literature for Flexcel PreCatalyzed, a paint-like single component counterpart.

Flexcel II (CM) is a modified version containing Madison NanoShields, a form of ceramic nanospheres that enhance the already high abrasion resistance of this product making it ideal for highly abrasive or high flow applications. (Please note this version is not NSF approved).

Flexcel II (AM) is a modified version containing Madison MicroSpear, a permanent and powerful EPA Registered Anti-Microbial Agent that provides an added measure of public safety on water lines (kills bacteria on contact) and extended service life in sewer environments (reduces microbially-induced corrosion).

APPROVALS AND LISTINGS

- √ NSF International: NSF/ANSI Standard 61 for potable water applications
- √ US Federal Drug Administration: 21 CFR177.1680 dry food contact



TECHNICAL INFORMATION

PROPERTY	TEST DESCRIPTION		RESULTS
Application Temperatures	N/A		0°C (32°F) to 65°C (150°F)
Initial Setting Time	@ 20°C/70°F	10 minutes (fast set)	30 minutes (delayed set)
Curing Time Before Handling	@ 20°C/70°F		3 times initial set time
Ultimate Cure	@ 20°C/70°F		10 days
Recoat Time*	@ 20°C/70°F		Up to 8 hours
Solids Content	ASTM D-1259	100% (Off-white & Gray)	96 ± 2% (Black & Brown)
Volatile Organic Compounds (VOCs)	ASTM D-2369		0 grams/litre (Off-white & Gray) >12 grams/litre (Black & Brown)
Theoretical Coverage	N/A	1000 m ² /litre/micron (1604 ft ² /US gallon/mil), off-white & gray 950 m ² /litre/micron (1540 ft ² /us gal/mil) Black & Brown	
Adhesion to Steel	ASTM D-4541 (SSPC-SP5)		1200 psi
Adhesion to Concrete	ASTM D-4541	Greater than cohesive strength of concrete	
Hardness	ASTM D-2240 Shore D		40
Flexibility/Elongation	ASTM D-412		160%
Abrasion Resistance	ASTM D-4060 (Taber CS-17)		Less than 15 mg
Chemical Resistance	ASTM D-543	Excellent. See Chemical Resistance Chart	
Impact Resistance	ASTM D-2794 (20 mils)		Greater than 200 in. lbs
Ultraviolet Resistance	ASTM G-154		Will chalk and darken
Colors			Off-White, Medium Gray, Black & Brown

* However, recoat window varies depending on the spray equipment temperature setting, the ambient conditions, product temperature/thickness, and the temperature of the substrate being coated.

NOTE: All statements, technical information and recommendations contained herein are typical of results obtained under laboratory conditions and are not intended to be used as contract specifications. For specification guidelines please contact Madison Chemical. The information contained herein is believed to be accurate as of the date of publication. Madison reserves the right to change product specifications without notice.

APPLICATION INSTRUCTIONS

CONTACT MADISON FOR DETAILED [APPLICATION INSTRUCTION BULLETIN](#) (also available online).

A. SURFACE PREPARATION

- 1) Ensure that surface is clean, dry and uncontaminated. Proceed only if the substrate temperature is more than 3°C (5°F) above the dew point temperature during surface preparation and coating application.
- 2) Abrasive blast clean with sand or grit (G40 or coarser). DO NOT USE steel shot or other non-angular media. For **steel** surfaces, blast to a Near White Blast (SSPC-SP10; NACE 2; SA 2.5) minimum 3.0 mil (75 microns) profile for immersion; minimum 2.5 mil (65 microns) profile for buried; minimum 2.0 mil (50 microns) profile for atmospheric service.

For **ductile iron** surfaces, abrasive blast to achieve a surface anchor profile of 2.5 mils or greater. Remove all rust and loose oxides.

For **concrete** surfaces, abrasive blast to remove any laitance.

B. APPLICATION OF COATING

- 1) Roll or agitate individual components thoroughly before use to disperse pigments and assure homogeneity. Do not thin. Do not mix "A" and "B" together.
- 2) Spray apply using a plural component, 1:1 mix ratio, heated airless spray unit.
- 3) Unlimited film thickness can be obtained in one continuous multi-pass coating operation, using various techniques. Typical applied thickness is 30 to 40 mils (750-1000 microns). Call Madison for detailed instructions.
- 4) Coating will cure at varying temperatures (see Table on Page 1), but rate of cure is temperature sensitive.
- 5) A second coat may be applied over the first, so long as it is applied within the recoat window (see Table). Otherwise, roughening of the surface will be necessary to ensure good intercoat adhesion.

C. CLEAN-UP AND STORAGE

- 1) This material will react with humidity and moisture. Keep containers tightly sealed and store upside down. For clean-up, use only Madison VR-1 or VR-2 Viscosity Reducer. Other solvents may react with product and plug equipment.
- 2) Store between 10°C(50°F) and 27°C(80°F). DO NOT FREEZE. Use product within 6 months of receiving.

HEALTH AND SAFETY

Flexcel II is intended for industrial use only. It contains no monomeric isocyanates but may nevertheless cause respiratory distress in some people. Provide ample ventilation in confined areas. Wear a NIOSH-approved cartridge-type face mask or a fresh air respirator in spray area. If swallowed, DO NOT induce vomiting as this will cause additional throat irritation; contact physician for instructions. Protect skin by wearing rubber gloves, safety goggles and protective clothing. If splashed on skin, remove immediately with rubbing alcohol and then wash with soap and water, as product is difficult to remove when cured. If splashed in eyes, wash liberally with clean water and contact physician; temporary irritation of eyes may last several days. See MSDS for more information. The finished product is totally inert and harmless. Review [Application Instruction Bulletin](#) for additional safety information.

LIMITED TWO YEAR WARRANTY

Madison will replace any product which, in service for which it is suitable, fails to meet specifications within two years of sale and which is proven to be defective when applied according to instructions by a Madison Approved Applicator or Certified OEM Applicator. Madison accepts no responsibility or liability for any other loss, claim, damage, injury or expense, direct or consequential, in contract or negligence. This product replacement warranty is in lieu of any other right, warranty, guarantee or condition, statutory or otherwise, expressed or implied, whether as to fitness for a particular purpose or as to merchantable quality or otherwise.

Note: The following are Trademarks and/or Registered Trademarks of Madison Chemical Industries Inc.:
Madison, Flexcel, NanoShield, MicroSpear and VR Reducers

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