

MATERIAL SAFETY DATA SHEET

COMPONENT A

Manufacturer: Thermal-Chem Corporation
2550 Edgington Street
Franklin Park, Illinois 60131

Page No.: One of Three

CHEMTREC Emergency No.: 800/424-9300
Other Information No.: 847/288-9090
MSDS Prepared By: John D. Carlin
Date Prepared: October 30, 2009

SECTION 1 - IDENTITY

Common Name: Thermal-Chem DecoEssence
(as appears on label) **Product No. 787**
Chemical Family: Modified epoxy resin

Formula: Component A, Epoxy Resin

CAS No.: N/A
Health⁽¹⁾: 1
Flammability⁽¹⁾: 1
Reactivity⁽¹⁾: 0
Personal Protection⁽¹⁾: B

SECTION 2 - INGREDIENTS

This document is prepared pursuant to the OSHA Hazard Communications Standard (29 CFR 1010.1200). In addition, other substances not Hazardous per this OSHA Standard may be listed where proprietary ingredients show, and the identity may be made available as provided in this standard.

Component(s) (chemical & common name(s))	OSHA PEL	ACGIH TLV	Other Exposure Limits	CAS No.
▶ Reaction Products of Ephichlorohydrin and Bisphenol A	N/E	N/E	N/E	025085-99-8
▶ Benzyl Alcohol	N/E	N/E	N/E	100-51-6
▶ Alkylphenol	N/E	N/E	N/E	25154-52-3

SECTION 3 - PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point: >600°F
**Percent Volatile
By Volume:** N/A
Solubility in Water: Negligible
Melting Point: N/A

Specific Gravity: 1.02
(H₂O = 1)
Vapor Density: 4.5
(Air = 1)

Vapor Pressure: <1
at 77°F (760mm Hg)
Evaporation Rate: N/A
(Butyl Acetate = 1)
Reactivity in Water: No

Appearance/Odor: *Liquid; mild, aromatic odor. Color and weight will change with pigmentation. Pigmentation does not add hazardous ingredients.

SECTION 4 - FIRE AND EXPLOSION DATA

Flash Point: >200°F (93°C)
(Setaflash)
**Auto-Ignition
Temperature:** N/E

**Flammable Limits In
Air, Percent by Volume:** **LEL**
Lower: N/E **UEL**
Upper: N/E

Extinguisher Media: Foam, CO₂, dry chemicals or water fog

Special Fire Fighting Procedures: Fire fighters should wear goggles and self-contained breathing apparatus to avoid breathing smoke and vapors. Cool fire exposed containers with water.

MATERIAL SAFETY DATA SHEET

COMPONENT A

Thermal-Chem DecoEssence,
Product No. 787,
Page Two of Three

SECTION 5 - REACTIVITY DATA

This product is stable/unstable: Stable
Conditions to avoid: Excess heating over a long period of time degrades the resin.
Incompatible with: Acid, Base
Hazardous decomposition products: None, under normal conditions.
Hazardous polymerization: Will not occur by itself. Uncontrolled conditions with Amines will cause irreversible polymerization and heat and pressure build-up.

SECTION 6 - HEALTH HAZARD DATA

Acute: None Known

Chronic: None Known

Signs & Symptoms of Exposure: Liquid is moderately irritating to skin and eyes. The resin is a skin sensitizer and may produce other allergic responses.

ANSI Classification: 4

Chemical Listed as Carcinogen or Potential Carcinogen: No

National Toxicology - Yes/No: No

I.A.R.C. - Yes/No: No

OSHA - Yes/No: No

Emergency and First Aid Procedures:

- 1. Inhalation:** If ill effects occur, remove person to fresh air, provide oxygen if breathing is difficult, keep him warm and quiet and get medical attention promptly.
- 2. Eyes:** Flushing with plenty of water for 15 minutes while holding eyelid open is good safety practice. Get medical attention.
- 3. Skin:** Contact will probably cause no more than irritation. Wash off with soap in flowing water or shower. Wash clothing before reuse. May cause dermatitis. If irritation persists, get medical attention.
- 4. Ingestion:** Not likely a problem. Induce vomiting if large amounts are ingested and get medical attention promptly. Do not give liquids if victim is unconscious or very drowsy.

MATERIAL SAFETY DATA SHEET

COMPONENT A

Thermal-Chem DecoEssence,
Product No. 787,
Page Three of Three

SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be Taken in Handling and Storage:	Do not get in eyes or on skin or clothing. Do not allow contaminated clothing to contact skin. Avoid breathing vapors of heated material. Store materials inside building on pallets at temperature above 36°F. Read technical data sheet.
Other Precautions:	None known.
Steps to be Taken in Case Material is Released or Spilled:	Soak up with absorbent material. Avoid skin and eye contacts and breathing of fumes. Residue can be removed with non-flammable solvent such as methylene chloride.
Waste Disposal Methods:	Burn in adequate incinerator or bury in an approved landfill where permitted under appropriate federal, state and local regulations.

SECTION 8 - SPECIAL PROTECTION INFORMATION

Respiratory Protection:	None likely needed. When material is heated or sprayed, vapors or mists could develop. Avoid breathing. Wear breathing apparatus.
Ventilation:	Good
Local Exhaust:	Required
Mechanical (General):	Sufficient to control to less than 30 mg/M3
Protective Gloves:	Chemical resistant, rubber
Eye Protection:	Chemical goggles or safety glasses with side shields
Other Protective Clothing or Equipment:	Clean body cover clothing. Disposable paper containers in work area. Eye bath.

SECTION 9 - NOTES

- N/A** = Not Applicable
N.E. = Not Established
HMIS = Hazardous Material Identification System

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk of his use of the material for either Component A and/or B or the combination of both components.

Thermal-Chem is a registered Trademark of Thermal-Chem Corporation.
Complies with Federal Standard No. 29 CFR 1910.1200.

MATERIAL SAFETY DATA SHEET

COMPONENT B

Manufacturer: Thermal-Chem Corporation
2550 Edgington Street
Franklin Park, Illinois 60131

Page No.: One of Three

CHEMTREC Emergency No.: 800/424-9300
Other Information No.: 847/288-9090
MSDS Prepared By: John D. Carlin
Date Prepared: October 30, 2009

SECTION 1 - IDENTITY

Common Name: Thermal-Chem DecoEssence
(as appears on label) Product No. 787
Chemical Family: Modified cycloaliphatic amine

Formula: Component B, Curing Agent

CAS No.: N/A
Health⁽¹⁾: 2
Flammability⁽¹⁾: 1
Reactivity⁽¹⁾: 0
Personal Protection⁽¹⁾: B
Confined Areas ⁽¹⁾ G
⁽¹⁾HMIS, See Notes

SECTION 2 - INGREDIENTS

This document is prepared pursuant to the OSHA Hazard Communications Standard (29 CFR 1010.1200). In addition, other substances not Hazardous per this OSHA Standard may be listed where proprietary ingredients show, and the identity may be made available as provided in this standard.

Component(s) (chemical & common name(s))	OSHA PEL	ACGIH TLV	Other Exposure Limits	CAS No.
▶ Modified Cycloaliphatic Amine Mixture	N/E	N/E	N/E	N/E

SECTION 3 - PHYSICAL AND CHEMICAL CHARACTERISTICS

Boiling Point: 401°F
Specific Gravity: 1.01
(*H₂O* = 1)
**Percent Volatile
By Volume:** N/A
Vapor Density: 5.88
(*Air* = 1)
Solubility in Water: Complete
Freezing Point: -31°F
Vapor Pressure: <0.01
at 77°F (760mm Hg)
Evaporation Rate: 0.001
(*Butyl Acetate* = 1)
Reactivity in Water: No

Appearance/Odor: Colorless to very faint yellow; mild amine odor.

SECTION 4 - FIRE AND EXPLOSION DATA

Flash Point: >200°F (93°C)
(C.O.C. ASTM D92)
**Flammable Limits In
Air, Percent by Volume:**
LEL Lower: N/E
UEL Upper: N/E
(A non-volatile fluid)

**Auto-Ignition
Temperature:** N/E
Extinguisher Media: Foam, CO₂, dry chemicals or water spray

Special Fire Fighting Procedures: Do not spray pool fires directly. A solid stream of water or foam directed into hot, burning liquid can cause frothing. Use self-contained breathing apparatus and protective clothing.

Unusual Fire and Explosion Hazards: None known

MATERIAL SAFETY DATA SHEET

COMPONENT B

Thermal-Chem DecoEssence,
Product No. 787,
Page Two of Three

SECTION 5 - REACTIVITY DATA

This product is stable/unstable: Stable
Conditions to avoid: Exposure to temperatures of 572°F (300°C) and above.
Incompatible with: Avoid contamination with acids, oxidizing materials, aldehydes, ketones and organic halides.
Hazardous decomposition products: Thermal decomposition or burning may produce carbon monoxide and/or carbon dioxide, nitrogen oxides and ammonia.
Hazardous polymerization: Will not occur by itself. Uncontrolled conditions with epoxy resins will cause irreversible polymerization and heat and pressure build-up.

SECTION 6 - HEALTH HAZARD DATA

1. **Inhalation:** Vapors are irritating and may cause nausea and vomiting.
2. **Eyes:** A strong sensitizer. Causes chemical burns.
3. **Skin:** Contact - a strong sensitizer. Causes chemical burns.
4. **Ingestion:** Moderately toxic. May cause nausea, vomiting and abdominal pain.

Chronic Effects of Overexposure: None currently known.
Other Health Hazards: Exposure may result in sensitization of the skin.

Chemical Listed as Carcinogen or Potential Carcinogen: No
National Toxicology - Yes/No: No
I.A.R.C. - Yes/No: No
OSHA - Yes/No: No

Emergency and First Aid Procedures:

1. **Inhalation:** If ill effects occur, remove person to fresh air, provide oxygen if breathing is difficult. Get medical attention promptly.
2. **Eyes:** Flushing with plenty of water for 15 minutes. Get medical attention promptly.
3. **Skin:** Remove contaminated clothing and wash skin with soap and plenty of water. Wash clothing before reuse. If rash develops, get medical attention.
4. **Ingestion:** Not likely a problem. Give large quantities of water to dilute material. Do not induce vomiting. Call a physician. Do not give liquids if victim is unconscious or very drowsy; seek medical attention immediately.

Note to Physician: There is no specific antidote. Treatment of overexposure should be directed at the control of symptoms and the clinical conditions.

MATERIAL SAFETY DATA SHEET

COMPONENT B

Thermal-Chem DecoEssence,
Product No. 787,
Page Three of Three

SECTION 7 - SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

**Precautions to be Taken
in Handling and Storage:**

Keep container closed. Do not get in eyes or on skin or clothing. Do not allow contaminated clothing to contact skin. Wash thoroughly after handling. Avoid breathing vapors of heated material. For industrial use only. Store materials inside a building on pallets at temperatures above 36°F. Read technical data sheet.

Other Precautions:

This product is resistant to biodegradation in a biological waste water treatment plant. A large spill could be toxic to the biomass in a treatment plant or could be toxic to fish. Therefore, avoid discharge to sewers or to natural waters.

**Steps to be Taken in Case
Material is Released or Spilled:**

Wear suitable protective equipment. Small spills should be flushed with large quantities of water. Large spills should be collected for disposal. Avoid discharge to sewers or waterways. See Section 4.

Waste Disposal Methods:

Burn in adequate incinerator or bury in an approved landfill where permitted under appropriate federal, state and local regulations.

SECTION 8 - SPECIAL PROTECTION INFORMATION

Respiratory Protection:

None likely needed. When material is heated or sprayed, vapors or mists could develop. Avoid breathing. Wear breathing apparatus.

Ventilation:

Good

Local Exhaust:

Required

Mechanical (General):

Good room ventilation is usually adequate for most operations.

Protective Gloves:

Chemical resistant, rubber

Eye Protection:

Chemical goggles or safety glasses with side shields.

Other Protective Clothing/Equipment:

Clean body cover clothing. Disposable paper containers in work area. Eye bath.

SECTION 9 - NOTES

Section 313 requires submission of annual reports of release of toxic chemicals that appear in 40CFR372 (for SARA313). This information must be included in all MSDS's that are copied and distributed for this material. There are no components or levels that require reporting under the statute for this product.

N/A = Not Applicable

N.E. = Not Established

HMIS = Hazardous Material Identification System

The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.

Vendor assumes no responsibility for injury to vendee or third persons proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Additionally, vendor assumes no responsibility for injury to vendee or third persons proximately caused by abnormal use of the material even if reasonable safety procedures are followed. Furthermore, vendee assumes the risk of his use of the material for either Component A and/or B or the combination of both components.

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DECOESSENCE™ PRODUCT 787

Metallic Pigment Floor Coating System

PRODUCT DESCRIPTION

DecoEssence™ is a decorative seamless flooring system that combines a blend of metallic pigment with a clear polymer matrix to produce a unique three-dimensional look with incredible depth and vibrancy. By incorporating various application techniques, the floor can be finished with many one-of-a-kind architectural finishes and textures where a unique appearance is desired. Finished thickness of the three-coat system is approximately 32 mils.

DecoEssence™ is a two (2) component 100% solids water clear polymer utilizing a specially formulated metallic pigmented material. The seamless coatings are impervious to most common chemicals, provide durable floor surfaces that require minimum maintenance and are an ideal alternative to vinyl tile, standard, solid color epoxy coatings, concrete stains and polishing. **DecoEssence™** is formulated for interior applications only.

DecoEssence™ should be applied at temperatures no lower than 13⁰ C (55⁰ F). **DecoEssence™** is USDA approved, meets VOC guidelines and has no offensive odors during installation.

DecoEssence™ should not be installed alone but rather as a total flooring system which is comprised of a pigmented primer (**Thermal-Chem ArmorPrime #726**), pigmented **DecoEssence™ #787** and a gloss or semi-gloss polyurethane wear coat (**Thermal-Chem DecoFinish E57 #1057** or no odor **Thermal-Chem ArmorFinish E-81 #1061**)

<i>DecoEssence™</i>	
Degrees	Recoat Time
77°F	5-7 hrs.
60°F	10-13 hrs.

The above table assumes substrate, ambient and material temperatures are equal and material is applied at 20 mils in thickness.

USES

The **DecoEssence™** seamless flooring system offers individual finishes and colors that make it ideal for many commercial environments including:

- High-end retail and commercial
- Museums, galleries and showrooms
- Entertainment arenas
- Residential dwellings
- Office lobbies, exhibit halls
- Healthcare facilities
- High-end retail food stores
- Wherever stained concrete is installed
- Restaurants and food courts
- Institutional facilities
- Hotels
- Countertops and Company Logos

And, wherever the following flooring properties are required:

- Slip-resistant surface texture
- Increased ease of maintenance
- Good abrasion resistance
- A durable and sanitary installation
- An inexpensive and decorative surface
- Areas where minimum downtime is required

TYPICAL PHYSICAL PROPERTIES

Color	10 Standard Colors
Solids	100%
VOC	0 grams per liter/Epoxy; 210 grams per liter / Urethane
Cure Rate @72° F	Recoat: 6-8 hrs Foot traffic: >24 hrs
Hardness, Shore D ASTM D 2240	76-82
Elongation ASTM D 638	5.8%
Tensile Strength ASTM D 638	2,500 psi
Compressive Strength ASTM D 695	7,800 psi
Flexural Strength ASTM C 580	4,500 psi

Adhesion ACI 503R	350 psi (100% concrete failure)
Heat Resistance Limits	140° F/60°C (Continuous exposure)
Abrasion Resistance ASTM D 41044, CS-17 wheel, 1000 cycles	38-42 mgs loss
Flammability	Self-extinguishing over concrete

ADVANTAGES

- Excellent adhesion & durable wear surface protection.
- Outperforms vinyl tile, acid base stains and water base dyes.
- Provides a more homogeneous colored appearance vs. stained concrete.
- Low maintenance (floor waxing & buffing not required).
- Seamless and sanitary flooring.
- Chemical and stain resistant system.
- Can be installed over new or old concrete, wood or cementitious toppings
- Artisan customizable finish looks
- Superior hiding of substrate imperfections.
- 100% Solids and VOC compliant.

LIMITATIONS

- Limited range of application temperatures.
- **DecoEssence™** minimum substrate application temperature - 55°F
- Polyurethane is recommended as a wear coat.
- Not recommended in areas of harsh chemical usage.
- Light color shades of **DecoEssence™** may discolor if exposed to sunlight or other UV sources.
- **DecoEssence™** may water spot if exposed to moisture prior to full cure.
- Allow the top coat to cure 7 days before the use of chemical cleaning.

COLOR and TEXTURES

- **DecoEssence™** is available in 10 colors
- Various slip-resistant texture options available with clear topcoat

PRODUCT APPLICATION

All decorative flooring systems can be installed over Thermal-Chem **VaporGuard** coating, Product #211, where hydrostatic and vapor transmissions could pose a potential hazard and is compatible with any of the Thermal-Chem companion repair products (refer to catalog).

Refer to the Thermal-Chem DecoEssence AIA Specification and DecoEssence Installation System Guide.

CHEMICAL RESISTANCE

Refer to Separate Product Chemical Resistance tables, or for specific product applications, contact your local Thermal-Chem representative.

PRODUCT AVAILABILITY

Products are manufactured and available through the Thermal-Chem Corporation, 2550 Edgington Street, Franklin Park, IL 60131 U.S.A.

Tel: 800/635-3773 ■ 847/288-9090

Fax: 847/288-9091

Website: www.thermalchem.com

TECHNICAL/SPECIFICATION SERVICES

Additional Product Data, complete Technical Support and Product Specifications are all available through Thermal-Chem Corporation or their local representatives. Every reasonable precaution and effort has been taken in the manufacturer of all Thermal-Chem products to comply with the published product data. Actual product performance may vary slightly due to environmental influences and/or conditions.

PRODUCT HANDLING

Read the Material Safety Data Sheet thoroughly before use.

Warning: For professional use only. Avoid contact of uncured material with skin and eyes. Contact with skin may result in irritation. Wash skin with soap and water. If contact with eyes should occur, flush with water for 15 minutes and seek immediate medical attention.

LIMITED WARRANTY

Thermal-Chem Corporation warrants its product to be of good quality and will, at Thermal-Chem's sole discretion, replace or refund the original purchase price (if payment was made in accordance with Thermal-Chem's payment and credit terms) of any product proved defective or non-conforming. Satisfactory results depend not only upon quality products but also upon many factors beyond our control. **THE PARTIES AGREE THAT THE REPLACEMENT OR REFUND OF PRODUCT PAYMENT FOR DEFECTIVE PRODUCT OR NON-CONFORMING GOODS IS THE SOLE AND EXCLUSIVE REMEDY.** Therefore, except for such replacement, **THERMAL-CHEM CORP. MAKES NO WARRANTY OR GUARANTEE, EXPRESS OR IMPLIED, INCLUDING WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE OR MERCHANTABILITY, RESPECTING ITS PRODUCTS,** and Thermal-Chem Corporation shall have no other liability with respect thereto, including without limitation, liability for incidental or consequential damages. Any claim regarding product defect must be received in writing within ninety (90) days from the date of shipment. No claim will be considered without such written notice or after the specified time interval. The user shall determine the suitability of the products for the intended use and assume all risks and liability in connection therewith.

DECOESSENCE™ – DECORATIVE METALLIC FLOOR COATING

Part 1 – General

1.01 Work Included

A. All work to be provided in this section shall include material, labor, and equipment necessary to furnish the complete installation of a Thermal-Chem Corp **DecoEssence™** System, as specified in documents for this project and/or the finish schedules contained in the drawings; including but not limited to the following:

1. Surface preparation
2. Concrete repairs/patching [as needed]
3. Joint filling/sealing [if applicable]
4. Installation of the **DecoEssence™** floor coating system

1.02 Related Work

A. New Concrete (If Applicable)

1. Normal weight concrete shall be allowed to cure (the minimum period required for the product specified) for a minimum of 28 days.
2. Concrete Slab-on-grade or below-grade construction shall be installed over an effective moisture vapor barrier beneath the slab (refer to Part 2 – Supplemental of this section).
3. Placed concrete should be moisture cured.
4. No curing compounds or similar surface contaminants, which would impede the adhesion of the resinous flooring system to the substrate, shall be used for curing the placed concrete.
5. Concrete shall be sloped to drains according to the requirements of the specific project or shall meet ACI-301 guidelines for placing and finishing concrete, and noted in drawings and/or specifications.

B. Old Concrete with Coating (If Applicable)

1. The preferred method of placing a **DecoEssence™** System is directly to clean concrete; however, in some instances it may not be practical or cost effect for the end user.
2. If the election is to go over an existing coating, the contractor shall perform ACI 503 Adhesion test or a Simple Cup test method over the prepared surface to insure proper adhesion of the existing coating to the concrete and the new coating to the existing coating. If the new coating is not removed, the warranty will be adjusted.

1.03 Quality Assurance

A. All component/material(s) used for the installation of this **DecoEssence™** System must be furnished by the same manufacturer (Thermal-Chem Corporation 2550 Edgington St. Franklin Park, IL 60131) in order to ensure optimum adhesion to the substrate and compatibility of the

integral components. This shall include all patching and vapor barrier resins (if required), base coat, and topcoat resins.

B. Enlist a contractor experienced in the installation of a **DecoEssence™** system, approved in writing by the manufacturer, and who can perform within the scope of work required to complete the contract for this section of the project.

1.04 Warranty

A. Joint written warranty shall be provided for this project for a period of one (1) year from the date of completion of the floor installation. The written warranty shall cover the material(s) as provided by the manufacturer to install the floor system and the contractor shall warranty the workmanship and labor to install the floor system. The labor and material guarantee shall include loss of bond and wear-through to the concrete substrate from normal use.

B. Not included in the warranty are damage due to structural design deficiencies including but not limited to slab cracking from lateral, vertical or rotational movement, and gouging or other damage due to fork lifts, other equipment, delamination caused by vapor transmission, Acts of God, or other elements beyond the scope of protection of this system nor causes not related to the system materials. Thermal-Chem and the contractor shall have no other liability with respect there to, including without limitation, liability for incidental or consequential damages.

C. In case of a warranty claim, the owner must notify the manufacturer and contractor in writing within 30 days of the first appearance of problems covered under this warranty. The owner will provide free and unencumbered access to the area during normal working hours for warranty claim repairs.

1.05 Submittals

Submit the following in accordance with the provisions and conditions listed in Division 1 and/or in compliance with other documents or conditions as outlined in the specifications for this project.

A. Submit current manufacturer's technical data and literature for a **DecoEssence™** Flooring System as specified in this section.

B. Submit the color chart for the specified product/system and/or a cured physical sample of the selected system color as approved by the Architect or Owner.

1.06 Material Delivery, Handling and Storage

A. Primary system materials shall be delivered in the manufacturers undamaged and unopened containers. Each container shall be clearly marked with the following:

Product name(s) and number
Manufacturer's name
Component designation (A, B, etc.)
Product Mix Ratio
Health and Safety Information

B. The contractor shall promptly inspect direct jobsite material deliveries to assure that quantities are correct, comply with requirements and are not damaged.

C. All materials shall be stored in a dry location at a minimum temperature of 65 degrees F (12.8 degrees C).

1.07 Job Conditions

- A. The contractor shall visit the jobsite prior to system installation of the **DecoEssence™** System to evaluate substrate condition, including substrate vapor/moisture transmission, quality and severity of cracking and the extent of repairs needed. Substrate imperfections should be repaired only after mechanical preparation of the substrate. Surface preparation reveals most imperfections requiring repair. Concrete substrates shall be tested to verify that the moisture of the substrate does not exceed the manufacturers' recommendations. Cost associated with repair, joint filling, and remediation of the concrete slab to produce a smooth surface are within the scope of this specification and will be the responsibility of the installing contractor.
- B. If there is an existing coating system on the floor, it shall be removed down to clean, sound concrete, unless there is an agreement among the contractor, manufacturer and end user to apply the new coating over the existing coating.
- C. The contractor should exercise care during surface preparation and system installation to protect surrounding substrates and surfaces, as well as in-place equipment. The contractor shall prepare the surface by removing all existing coatings down to clean sound concrete.
- D. System must be protected by the General Contractor or, as a separate bid item, by the installing contractor until it is inspected and turned over to the owner.
- E. The minimum slab temperature must be conditioned to 55 degrees F before starting installation, during installation, and for at least 72 hours after installation is complete. Use an IR (Infrared) surface reading thermometer to measure floor temperature.
- F. Maintain lighting at a minimum uniform level of 50 or more foot candles in areas where the **DecoEssence™** System is being installed.
- G. Leaks from pipes and other sources must be corrected prior to the installation of the coating system.

Part 2 – Products

2.01 Materials

System Overview

- A. The **DecoEssence™** System shall consists of:
 - 1. Pigmented Primer – Product No. 726 **ArmorPrime** applied at 160-180 sq. ft. per gallon.
 - 2. **DecoEssence™** Coat – Product No. 787 **DecoEssence™** applied at 80 sq. ft. per gallon
 - 3. Wear Coat/Top Coat – Product No. 1061 DecoFinish E81 (81 % solids no odor urethane) applied at 300 sq. ft. per gallon.
- B. Physical Properties:

Color	To be Selected
Solids	100% Epoxies / 81% Urethane
VOC	0 grams per liter / Epoxy; 210 grams per liter / Urethane
Cure Time @ 72° F	Recoat: Epoxy 6 - 8 hours Urethane: 5 – 8 hours Foot Traffic: >24 hours
Hardness, Shore D ASTM D 2240	76 – 82
Elongation ASTM D 638	5% - 6%
Tensile Strength	2,500 psi min

ASTM D 638	
Compressive Strength ASTM D 695	7,800 psi
Adhesion ACI 503R	250 psi (100% concrete failure)
Abrasion Resistance ASTM D 4060, CS – 17 Wheel, 1000 cycles	18 mgs loss (Total system loss)
Flammability	Self-extinguishing over concrete

ASTM D = Resin only

Part 3 – Execution

3.01 Surface Preparation

- A. Create a surface profile with a steel shot blast machine and/or dust-free diamond grinder for surfaces and edges.
- B. Verify that surface is dry and perfectly clean, free of all oil, grease, detergent film, sealers and /or curing compounds.
- C. Thoroughly rout and vacuum all non-moving cracks and surface deviations, then fill with patching compound comprised of 100% solids epoxy and aggregate.
- D. Key in all drains, grind or build up edges between joints to a point of equal height
- E. Saw cut to a depth of ¼” around all areas to be patched and chip out deteriorated concrete down to clean sound concrete, prime and patch with Thermal-Chem product No. 726 ArmorPrime and Thermal-Chem Grout and Patch Sand #A-100.

3.02 Installation

- A. Apply each component of the **DecoEssence™** System in accordance with manufacturer’s written installation instructions and strictly adhere to mixing and installation methods, recoat windows, cure times and environmental restrictions.
- B. Prime Coat: Apply the prime coat of #726 ArmorPrime epoxy resin at 160-180 sq. ft. per gallon.
- C. **DecoEssence™**: Apply #787 **DecoEssence™** at 80 sq. ft. per gallon.
- B. Wear Coat/Top Coat – Product No. 1061 DecoFinish E81 (81 % solids no odor urethane) applied at 300 sq. ft. per gallon.

3.03 Curing, Cleaning and Protection

- A. Cure the **DecoEssence™** System materials in accordance with manufacturer's directions, taking care to prevent contamination during stages of the installation and prior to completion of the curing process
- B. Protect the **DecoEssence™** System from damage and wear during other phases of the construction operation, using temporary coverings if required. Remove temporary covering just prior to final inspection.
- C. Clean the **DecoEssence™** System just prior to final inspection, using materials and procedure acceptable to the system manufacturer.
- D. Some cleaners will affect the color, gloss or texture of your polymer floor surfaces. To determine how the cleaner will perform, first test each cleaner in a small area, utilizing your cleaning technique. If no deleterious effects are observed, continue with the procedure. For recommendations regarding types of cleaners, contact the system manufacturer.

**DECOESSENCE™ – DECORATIVE METALLIC FLOOR COATING****PRODUCT DESCRIPTION**

DecoEssence™ is a decorative seamless flooring system that combines a blend of pigment with a clear polymer matrix, to produce a unique three-dimensional look with incredible depth and vibrancy. By incorporating various application techniques, the floor can be finished with many one-of-a-kind architectural finishes and textures where a unique appearance is desired. Finished thickness of the three-coat system is approximately 32 mils.

ADVANTAGES

- Excellent adhesion and durable wear surface protection.
- Outperforms vinyl tile, acid base stains and water base dyes
- Provides a more homogeneous colored appearance vs. stained concrete.
- Low maintenance (floor waxing and buffing not required).
- Seamless and sanitary flooring.
- Chemical and stain resistant system.
- Can be installed over new or old concrete, wood or cementitious toppings
- Artisan customizable finish looks
- Superior hiding of substrate imperfections
- 100% Solids and VOC Compliant

TYPICAL USES

The **DecoEssence™** seamless flooring system offers individual finishes and colors that makes it ideal for many commercial environments.

- High-end retail and commercial
- Museums, galleries and showrooms
- Entertainment arenas
- Residential dwellings
- Office lobbies, exhibit halls
- Healthcare facilities
- High-end retail food stores
- Wherever stained concrete is installed
- Restaurants and food courts
- Institutional facilities
- Hotels
- Countertops and Company Logos

LIMITATIONS

- Concrete slab on grade or below-grade requires vapor/moisture testing. If a vapor drive in excess of 3 lbs. per 1,000 sq. ft. per 24 hours (ASTM F 1869) is present, an epoxy vapor barrier coating must be installed below the **DecoEssence™** system for proper performance.

- Do not install system if the ambient temperature and/or concrete substrate temperature is below 55° F or above 90° F.
- Product cure times are significantly affected by temperatures and can have a major affect on working time.
- Allow final top coat to cure for a minimum of 24 hours prior to exposure to water and 7 days before the use of cleaning chemicals.

PHYSICAL PROPERTIES

See individual Product Data Sheets.

COLOR

DecoEssence™ is available in 10 solid colors.

OPTIONS

- Expansion and control joints must be addressed to allow for movement. Prior to installation, the different methods should be discussed with the appropriate method per environment selected.
- Urethane finish wear coat in either gloss or semi-gloss. Finish coat will provide improved wear, chemical, and UV resistance.
- Install decorative scores into substrate to define borders or patterns
- Install additional colors to create patterns in the floor
- Deteriorated concrete should be repaired to achieve a smooth level surface
- Install field sample for approval of final finish appearance
- Textured surfaces can be achieved with an additional wear coat
- Not recommended in areas of harsh chemical usage
- Light colors of **DecoEssence™** may discolor if exposed to sunlight or other UV sources
- **DecoEssence™** may water spot if exposed to moisture prior to full cure

SURFACE PREPARATION

Proper surface preparation is essential for a successful system installation. New concrete should be cured a minimum of 28 days and tested for moisture. The substrate must be dry, clean, and sound. All surface contaminants such as dirt, oil, grease, paint, fats, wax, and concrete laitance must be removed.

GENERAL SUBSTRATES

Thermal-Chem systems can be applied to a variety of substrates if the surface is properly prepared. Surfaces other than concrete such as wood, vinyl tile, or quarry tile, require different degrees and types of prep methods. Thermal-Chem should be consulted prior to start of project.

CONCRETE SUBSTRATE

To insure proper system adhesion, concrete surfaces can be prepared by shot blasting, scarifying, or diamond grinding. Refer to Installation Guide # 2001-IG for proper floor prep recommendations

For best results, substrate should be flat and smooth.

SYSTEM INSTALLATION

Primer

Premix the A component of the primer, then pour both A and B components together along with Thermal-Chem's universal pigment into a clean mixing container and mix for 2 minutes. Spread the material with a flat squeegee and back roll with a ¼" nap mohair roller. Application rate: 8-10 mils (200-160 sq. ft. per gallon).

DecoEssence™ Coat

Premix the pre-pigmented DecoEssence component A. Mix slowly, do not draw a vortex or whip air into the coating. Pour the B component into the A component container and mix for 2 to 3 minutes. Apply with notch squeegee at the rate of 18 to 20 mils and back roll with a ¼" mohair roller. Spread the coating as evenly as possible. Let the material set and level out for about 20 to 25 minutes prior to finishing techniques.

The combination of Thermal-Chem's polymer system and the metallic pigment will produce a variety of unique looks depending upon the finishing techniques. Using a leaf blower and a circular motion will create deep movement with a textured look. Applying a fine spray of solvent (denatured alcohol, xylene) will disperse the pigment creating a mottled look similar to stained concrete. Spike rollers or loop rollers create different textures. The contractor should experiment with various techniques before installing an end user job.

Wear Coat

After the coating has fully cured, apply a wear coat of either Thermal-Chem's **DecoFinish E57** or the no odor **ArmorFinish E81** at the rate of 300 to 400 sq. ft. per gallon.

SYSTEM MAINTENANCE

Thermal-Chem **DecoEssence™** Flooring Systems are no-wax floors and when properly maintained will retain their gloss for several years.

GENERAL CARE

Refrain from dragging heavy loads or equipment across the floor surface. Always wipe up chemical spills to avoid possible staining.

CLEANING SCHEDULE

Floors should be swept and dust-mopped on a daily basis. Heavy soil load environments may require wet mopping or auto scrubbing. Dirt, grease, oil, spills, and other surface contaminants represent a safety issue and should be addressed by a daily and weekly floor-cleaning schedule. Facility soil loads, safety and appearance requirements all contribute to the frequency and type of cleaning routine required. Consult Thermal-Chem's Care and Maintenance Guide for polymer floor systems.

DISCLAIMER

The data on this sheet represent typical values obtained by the methods indicated. Since application variables are a major factor in product performance, this information should serve only as a general guide. Such information and recommendations are subject to change and pertain to the products(s) offered at the time of publication. Published technical data is subject to change without notice.

PRODUCT AND INSTALLATION DATA

	Material	Mix Ratio	Theoretical Coverage	Packaging
Primer	Armor Prime 726 with 1085 Pigment	2:1	180 sq. ft. / gal (9 mils)	3 or 15 gal units
Body Coat	DecoEssence™ 787	2:1	80 sq. ft. /gal (20 mils)	1gal in 2gal cont. & 3 gal in 5 gal cont.
Wear Coat	DecoFinish 1057	1:1	300 sq. ft. / gal (3 dry mils)	2 or 10 gal units
	Or DecoFinish 1061 No odor urethane	1:3	300 sq. ft./ gal (4 dry mils)	1 1/3 gal unit

PRODUCT AVAILABILITY

Products are manufactured and available through the Thermal-Chem Corporation, 2550 Edgington Street, Franklin Park, IL 60131 U.S.A.

Tel: 800/635-3773 ■ 847/288-9090

Fax: 847/288-9091

Website: www.thermalchem.com

WARRANTY

See Product Data Sheet