



# DuraSeal<sup>®</sup>



Wastewater  
Solutions



Environmental  
Results





SOLUTIONS for the  
Restoration and Protection  
of Wastewater Structures

## **Clean Water** IS WHAT WE'RE ALL ABOUT

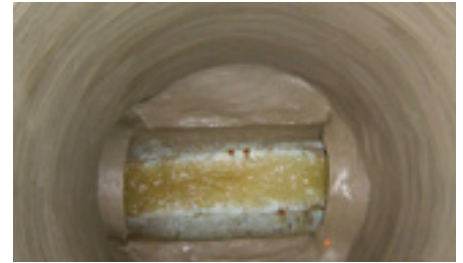
DuraSeal has over 30 years experience in the research, design, installation, manufacturing and marketing of wastewater restoration products.

Our line of specialty products provide a full system solution for the repair and protection of wastewater structures. Products that seal against infiltration, exfiltration & corrosion with a 10 to 50 year design life for both brick and concrete wastewater structures.

We are a single source supplier for the municipal wastewater market. For new construction, collection system or treatment facilities we have the products for your restoration project.

**For more information:**  
Contact us at 512-944-0895  
or visit our website at  
[www.DuraSealUSA.com](http://www.DuraSealUSA.com)





# **DuraSeal.**

**DuraSeal Plug** is a single component blend of select cements and admixtures designed specifically for infiltration control.

**DuraSeal RM** is a high early compressive strength repair mortar featuring a rapid set time.

**DuraSeal PM** is a single component, microsilica enhanced, fiber reinforced, shrinkage compensated, high strength repair mortar, designed specifically for the rehabilitation of both brick and concrete wastewater structures.

**DuraSeal CA** is a single component, pure fused calcium aluminate cement, fiber reinforced, shrinkage compensated, high strength repair mortar, designed specifically for superior corrosion protection of both brick and concrete wastewater structures.

## PRODUCT OVERVIEW

**DuraLine** is a fiber reinforced polymer epoxy. It is two-component, 100% solids, high build, spray-applied, structural grade epoxy system. The material can be hand troweled or spray applied up to 1/4" (250 mils) per pass. DuraLine when cured exhibits high strength and flexural properties for partially or fully deteriorated structures.

**DuraFlex** is a highly flexible, plural component product based on a urethane/epoxy hybrid elastomer formulation designed specifically for sealing manhole chimneys in municipal wastewater structures.

**DuraFlex HBD** is a very unique, two-component, 100% solids urethane-novolac hybrid epoxy coating system. DuraFlex HBD is a high-build, self-leveling coating system designed with a very high flexural modulus. Excellent bond to concrete, steel, and wood.

**For product specifications visit our website at [www.DuraSealUSA.com](http://www.DuraSealUSA.com).**

# TECHNICAL DATA

## DuraSeal Plug™

DuraSeal Plug is a single component blend of select cements and admixtures designed specifically for infiltration control of both brick and concrete wastewater structures.

### Recommended Uses:

- Repair active leaks in manholes, pipes and other masonry structures.
- Foundations
- Concrete walls, tanks and pits

### Benefits / Features:

- Single component
- Rapid setting
- Hand applied
- Sulfate resistant

### Typical Performance Data:

Compressive Strength	ASTM C109
2 Hour	650 PSI
24 Hour	6,150 PSI
28 Day	9,260 PSI
Bond Strength	ASTM C882
1 Hour	440 PSI
24 Hour	1,540 PSI

### Shelf Life:

6-12 months (dry covered storage).  
High humidity will reduce shelf life.

### Yield:

One (50) pound pail yields approximately .42 cubic feet.

### Surface Preparation/Application:

Substrate must be structurally sound, free of oil, grease, coatings, rust and unsound concrete for the successful application of DuraSeal Plug. Prepare leak by chiseling or drilling to ½" to ¾" depth and width depending on size of leak to be repaired. Using rubber gloves, respirator or filter mask and appropriate eye protection, apply DuraSeal Plug generously to prepared surface with a gentle packing motion, then apply firm pressure for 30-45 seconds. Repeat process until leak is stopped, then patching with DuraSeal RM for a more permanent seal.

### Warranty:

This product is guaranteed and warranted to be of good quality. DuraSeal will, at it's sole discretion, replace this product if proven defective when stored, mixed and applied in strict accordance with DuraSeal technical product specification guidelines. DuraSeal offers no guarantee, express or implied for a particular purpose or performance.



## DuraSeal RM™

DuraSeal RM is a high early compressive strength repair mortar featuring a rapid set time, designed specifically for the rehabilitation of both brick and concrete wastewater structures.

### Recommended Uses:

- Repair large defects in manholes, pipes and other masonry structures.
- Bench and invert repair.
- Designed specifically for the rehabilitation of underground wastewater structures.

### Benefits / Features:

- Single component
- Rapid setting
- High 28 day strength
- Non shrinking

### Typical Performance Data:

Compressive Strength	ASTM C109
2 Hours	3,250 PSI
1 Day	5,710 PSI
28 Day	9,950 PSI
Flexural Strength	ASTM C293
28 Day	805 PSI
Bond Strength	ASTM C882 28 Day - 2,770
Shrinkage	ASTM 596 28 Day - 0%
Freeze Thaw Resistance	ASTM C666 300 Cycles No Visible Damage
Set Time	ASTM C266
Initial Set	11 Minutes
Final Set	18 Minutes

### Shelf Life:

6-12 months (dry covered storage).  
High humidity will reduce shelf life.

### Yield:

One (60) pound bag yields approximately .50 cubic feet.

### Surface Preparation:

Substrate must be structurally sound, free of oil, grease, coatings, rust and loose concrete. Water blast or sand blast to remove all contaminants. Do not use when less than 40°F. Apply to a clean damp surface, free of any standing water.

### Mixing:

Using rubber gloves, respirator or filter mask and appropriate eye protection, mix one 50 lb bag of DuraSeal RM thoroughly with up to three quarts (3) of potable water in a suitable container for 3-5 minutes. Water may be chilled or heated in order to adjust working time. Do not exceed maximum amount of water needed in order to avoid aggregate separation. Do not exceed maximum amount of water needed in order to yield highest compressive strength. Working time is approximately 15 minutes from the introduction of water and may depend upon air temperature, humidity, and wind conditions.

### Application:

Material may then be troweled into place.

### Warranty:

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# TECHNICAL DATA

## DuraSeal PM™

DuraSeal PM is a single component, microsilica enhanced, fiber reinforced, shrinkage compensated, high strength repair mortar, designed specifically for the rehabilitation of both brick and concrete wastewater structures.

### Recommended Uses:

- Relining of brick, block and masonry surfaces in manholes, pipes and other wastewater structures.
- Tunnels
- Containment structures
- WWTP
- Designed specifically for the rehabilitation of underground wastewater structures.

### Benefits / Features:

- Single component
- Microsilica enhanced
- High compressive and flexural strengths
- Sulfate resistant
- Spray applied
- Low permeability

### Typical Performance Data:

Compressive Strength	ASTM C109
1 Day	6,000 PSI
28 Day	10,000 PSI
Flexural Strength	ASTM C348 28 Day - 1790 PSI
Tensile Strength	ASTM C496 28 Day - 720 PSI
Shrinkage	ASTM C596 28 Day - 0%
Bond Strength	ASTM C882 28 Day - 2620 PSI
Freeze Thaw Resistance	ASTM C666 300 Cycles No Visible Damage
Density	ASTM C138 139 +/- 5
Set Time	ASTM C266
Initial Set	2 Hours
Final Set	4 Hours

**Shelf Life:** 6-12 months (dry covered storage). High humidity will reduce shelf life.

**Yield:** One (60) pound bag yields approximately .54 cubic feet.

**Surface Preparation:** Substrate must be structurally sound, free of oil, grease, coatings, rust and loose concrete. Water blast 3500 PSI or sand blast to remove all contaminants. Do not use when less than 40°F. Apply to a clean damp surface, free of any standing water.

**Mixing:** Using rubber gloves, respirator or filter mask and appropriate eye protection. Use approximately 3-4 quarts of potable water per each 60 pound bag of DuraSeal PM. First add up to 90% of the potable water into the mixer, then add DuraSeal PM and the remaining mix water as required. Mix until a homogeneous consistency is achieved. Water may be chilled to maximize working time. **Application:** Hand application, low pressure spray and rotary spin.

**Curing:** Properly cure in strict accordance with ACI recommendations. Apply a curing compound per the moisture retention requirements of ASTM C309 or cure in moist environment for 7 days.

**Warranty:** This product is guaranteed and warranted to be of good quality. DuraSeal will, at it's sole discretion, replace this product if proven defective when stored, mixed and applied in strict accordance with DuraSeal technical product specification guidelines. DuraSeal offers no guarantee, express or implied for a particular purpose or performance.



## DuraSeal CA™

DuraSeal CA is a single component, pure fused calcium aluminate cement, fiber reinforced, shrinkage compensated, high strength repair mortar, designed specifically for superior corrosion protection of both brick and concrete wastewater structures.

### Recommended Uses:

- Relining of brick, block and masonry surfaces in manholes, pipes and other wastewater structures.
- Tunnels
- Containment structures
- WWTP
- Designed specifically for the rehabilitation of underground wastewater structures.

### Benefits / Features:

- Single component
- Superior corrosion protection
- High compressive and flexural strengths
- Spray applied
- Low permeability
- Low rebound

### Typical Performance Data:

Compressive Strength	ASTM C109
28 Day	9,000 PSI
Flexural Strength	ASTM C293
28 Day	1,515 PSI
Tensile Strength	ASTM C496
28 Day	835 PSI
Shrinkage	ASTM C596 28 Day - 0%
Bond Strength	ASTM C882 28 Day - 2,850 PSI
Freeze Thaw Resistance	ASTM C666 300 Cycles No Visible Damage
Density	ASTM C138 134 +/- 5
Set Time	ASTM C266
Initial Set	30 Minutes
Final Set	180 Minutes

### Shelf Life:

6-9 months (dry covered storage). High humidity will reduce shelf life.

### Yield:

One (60) pound bag yields approximately .54 cubic feet.

### Surface Preparation:

Substrate must be structurally sound, free of oil, grease, coatings, rust and loose concrete. Water blast 3500 PSI or sand blast to remove all contaminants. Do not use when less than 40°F. Apply to a clean damp surface, free of any standing water.

### Mixing:

Using rubber gloves, respirator or filter mask and appropriate eye protection. Use approximately 3-4 quarts of potable water per each 60 pound bag of DuraSeal CA. First add up to 90% of the potable water into the mixer, then add DuraSeal CA and the remaining mix water as required. Mix until a homogeneous consistency is achieved. Water may be chilled to maximize working time.

### Application:

Hand application, low pressure spray and rotary spin.

### Curing:

Properly cure in strict accordance with ACI recommendations. Apply a curing compound per the moisture retention requirements of ASTM C309 or cure in moist environment for 7 days.

### Warranty:

This product is guaranteed and warranted to be of good quality. DuraSeal will, at it's sole discretion, replace this product if proven defective when stored, mixed and applied in strict accordance with DuraSeal technical product specification guidelines. DuraSeal offers no guarantee, express or implied for a particular purpose or performance.





# TECHNICAL DATA



DuraLine is a fiber reinforced polymer epoxy. It is two-component, 100% solids, high build, spray-applied, structural grade epoxy system. The material can be hand troweled or spray applied up to 1/4" (250 mils) per pass. DuraLine when cured exhibits high strength and flexural properties for partially or fully deteriorated structures.

#### Benefits / Features:

- 100% solids, no VOCs
- Convenient 1:1 (v) ratio
- Excellent chemical resistance
- Structural, with movement tolerance
- No sag, ultra-high build
- Surface forgiving & moisture tolerant
- Ultra-high adhesion, self-priming



#### Film Thickness:

DuraLine can be applied as a single coat or multi-coat system. Minimum recommended thickness is 60 – 125 mils. Maximum build-up per coat is 1/4" (250 mils) without sag per coat, depending on temperature. For applications requiring thicker lining, multiple passes may be utilized.

#### Theoretical Coverage:

DuraLine is 100% solids and will not shrink. Therefore, the theoretical coverage properties between wet film thickness (WFT) and dry film thickness (DFT) are the same.

One-gallon (231 cu.in.) of neat epoxy, and will yield:

- @ 1/16" (60 mils), product yields 26.7 sq.ft.
- @ 100 mils, product yields 16 sq.ft.
- @ 1/8" (125 mils), product yields 12.8 sq.ft.
- @ 1/4" (250 mils), product yields 6.4 sq.ft

#### Surface Preparation :

The success of any coating application is directly proportional to the extensiveness of the surface preparation and the care into the application. Surface must be clean and sound. Remove all dust, contaminants, grease, curing compounds, rust, impregnation, waxes, foreign particles, and weak or disintegrated materials from the surface, and utilize advised methods to achieve a clean and profiled surface.

**Concrete:** Prepare the concrete by abrasive blasting, high pressure water cleaning or jetting, and/or other approved methods to achieve clean, sound, and profiled concrete (min. ICRI CSP-3) in accordance with SSPC-SP 13 / NACE No. 6. "Surface Preparation of Concrete." NOTE: DuraLine can be applied direct to concrete (DTC), self-priming.

**Steel:** Inspect and remove oil, grease, chlorides or other contaminants - "Solvent Cleaning" (SSPC-SP1) may be required. Abrasive blasting (or other approved mechanical methods) SSPC-SP10 / NACE 2, "Near-White Blast Cleaning," must be administered in order to achieve a clean surface with a minimum profile of 100 microns (4 mils); remove dust and debris by high compressive air or solvent cleaning (SSPC-SP1) may be required again. Before preparing or applying on steel, verify that the temperature of the surface is at least 3 degrees C (5 degrees F) from the dew point temperature to preclude condensation. NOTE: DuraLine can be applied direct to metal (DTM), self-priming.

*NOTE: Coverage values are provided as an estimate for guidance based on theoretical calculations; does not include wastage or surface conditions/imperfections.*



#### Technical Properties:

Type		proprietary hybrid fiber-reinforced-polymer (epoxy/epoxide)
Finish		light coarse - orange peel (depending on heat & tips)
Mix Ratio		1:1 by volume
Solids by Volume	ASTM D2697	100%
Solvent (VOC)	ASTM D3960	none
Pot Life		30 min. (77F / 200 g mass)
Adhesion Strength	ASTM D4541	substrate failure
Adhesion Strength (steel)	ASTM D4541	2,000 psi
Water Absorption	ASTM D1653	< 0.1 g/sq.m.
Acid Exposure (pH 1, H2SO4)		passed
Tensile Strength	ASTM D638	7,800 psi
Flexural Modulus	ASTM D790	580,000 psi
Flexural Strength	ASTM D790	7,000 psi
Compressive Strength	ASTM D695	12,000 psi
Elongation	ASTM D2370	4.5%
Gel Time		25 min. (120F) 10 min. w/ flash exotherm (140F)
Complete Cure		24 hrs (77F, non-potable) 72 hrs (77F, potable)
Temperature Exposure (dry)		5F-180F
Temperature Exposure (wet)		32F -180F
Recoat Time		when firm – no max.

#### Application Method:

DuraLine can be hand troweled or sprayed utilizing specialized equipment, specified, proven and sold by approved equipment vendors. Requires fully heated, plural component system with recirculating and agitating heated hoppers up to 150F, with heated hoses. Mixing occurs in a static chamber prior to a single whip hose; and must have purging capability through the mixing chamber, the whip hose and spray gun. Purge and clean with DuraLine solvent. The system must be fixed ratio of 1:1 by volume with a minimum of 25 gallon preheating holding capacity for each part of material.

#### Thinning:

Do not thin.

#### Storage & Handling:

Shelf life: 36 months, sealed. Store in a dry area away from direct sunlight.

#### Packaging & Color:

Kit comes with A component and B component separately.

- 10 Gallon Kit (pails) sky blue
- 100 Gallon Drums (drums) sky blue

#### Safety:

Consult Material Safety Data Sheet (SDS) for all material safety information. Consult safety manuals of all equipment utilized.

# TECHNICAL DATA



DuraFlex is a highly flexible, plural component product based on a urethane/epoxy hybrid elastomer formulation designed specifically for sealing manhole chimneys in municipal wastewater structures.

#### Recommended Uses:

- Sealing manhole chimneys
- Precast joints
- Catch basins

#### Benefits / Features:

- Highly flexible
- Corrosion Resistant
- 100 % solids
- Simple Application
- Effective solution to I&I

#### Typical Performance Data:

Elongation	800% ASTM D-412
Tensile Strength	1,100 psi ASTM D-412
Hardness Shore A	70 psi ASTM D-412
Tear Resistance	140LBS/IN
Service Temperature	-25 F. to 160 F.
Set Time:	
Initial Cure (75F)	6 Hours
Final Cure (75F)	72 Hours
Final Set	30 Days



**Shelf Life:** Twelve months in properly sealed containers. Store out of direct sunlight.

**One Gallon Yield:** A component + B component will yield .83 mixed gallons. Will cover approximately 7.84SF on a smooth surface.

**Surface Preparation:** F. Metal Surfaces: Sandblasting or other mechanical method to a clean sound surface with minimum 3 mil profile, free of oil, grease, coatings, rust and loose concrete. Brick/ Masonry substrate: Sandblast or pressure wash to a clean, sound surface in accordance with SSPC Sp13/NACE No.6 with ICRI CSP 3-5 profile. Apply DuraLine epoxy to a clean dry surface.

**Mixing:** Begin by adding bottle of part B into part A pail. Mix thoroughly with mechanical drill (3-4 minutes) until a uniform color and texture has been achieved.

**DuraFlex Application:** Application must be made to using stiff paint brush or trowel, apply DuraFlex at a minimum 170 mils thickness.

**Limitations:** Ambient & surface temperatures of minimum 60° F to 110° F. Product temperature for both part A & part B prior to mixing and application should be between 65° F & 95° F.

**Warranty:** This product is guaranteed and warranted to be of good quality. DuraSeal, LLC will, at it's sole discretion, replace this product if proven defective when stored, mixed and applied in strict accordance with DuraFlex specification guidelines. DuraSeal, LLC offers no guarantee, express or implied for a particular purpose or performance.



## EQUIPMENT Options

We offer a complete line of mixing, pumping and spraying equipment to apply the products we manufacture. Also, custom trailer or truck mounted equipment options can be custom designed to facilitate use with contractors existing equipment.

- Custom Spray Equipment For Restoration Mortars
- Rotary Spray – Centrifugal Application
- Heated Plural Component Application Equipment

## APPLICATOR Training

To help ensure the quality performance of each product, contractor certification training is provided for material handling, equipment, surface preparation, product application and testing.

## TECHNICAL Support

We offer a full system solution from product testing and development, application equipment, certified field training and testing as well as customer support.

**For more information:**  
Contact us at 512-944-0895  
or visit our website at  
[www.DuraSealUSA.com](http://www.DuraSealUSA.com)





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