

# Mainstay® ML-72™

## Sprayable Microsilica Restoration Mortar



### FEATURES/BENEFITS

<b>LOW PERMEABILITY</b>	<b>NON SHRINK/CRACK RESISTANT</b>
<b>HIGH EARLY AND ULTIMATE STRENGTH</b>	<b>HIGH FLEXURAL AND BOND STRENGTH</b>
<b>EASY TO USE AND FINISH</b>	<b>HIGH BUILD</b>
<b>WATERPROOFS/DAMP-PROOFS</b>	<b>RESTORES DETERIORATED SURFACES</b>

### PRODUCT DESCRIPTION

**MAINSTAY ML-72** is a special blend of portland cement, microsilica, thermoplastic fiber, densifiers, admixtures, and other modifiers that produces a high strength and low permeability mortar for the rehabilitation of deteriorated concrete structures. **MAINSTAY ML-72** produces excellent adhesion to properly prepared existing concrete, brick, or steel surfaces. **MAINSTAY ML-72** can withstand corrosive environments with a pH of 3 or higher, restores structural integrity, seals rough, deteriorated surfaces, and resists external hydrostatic water pressure. **MAINSTAY ML-72** is suitable for permanent water immersion service.

**MAINSTAY ML-72** can be used to repair vertical, horizontal, and overhead surfaces of deteriorated steel and concrete structures such as sewer pipes, culverts, pits, sumps, trenches, tunnels, bridges, piers, or any structure that has experienced deterioration from exposure to aggressive environments. This product is available with polymer additives, **MAINSTAY ML-72F**. These polymer additives improve adhesion, tensile strength, and workability, especially in dry environments.

### PRODUCT DATA

#### COMPOSITION:

A proprietary mixture of special cements, silica fume, thermoplastic fibers, and modifiers. (**MAINSTAY ML-72F** contains polymer admixture.)

#### COLOR:

Dark gray.

#### YIELD:

.54 cubic feet (ft<sup>3</sup>) per 65 pound (lb) bag when mixed correctly.

#### COVERAGE:

Approximately 13 square feet (ft<sup>2</sup>) per bag at 1/2". Allowances should be made for waste.

#### THICKNESS:

Depends on the application. 1" is generally sufficient for smoothing concrete that has experienced surface attack (exposed aggregate). Minimum thickness is usually 1/2". Consult a Mainstay Technical Representative for specific recommendations.

#### PACKAGING:

Normally stocked in 65-lb bags.

#### SURFACE PREPARATION:

Prepare surfaces to be repaired by Low Pressure Water Cleaning (LP WC, 4,000 psi minimum), abrasive blasting, hand, or power tool cleaning to remove all unsound concrete, contaminants, dirt, debris, and/or deteriorated reinforcing steel. Refer to the International Concrete Repair Institute (ICRI) technical guideline titled *Surface Preparation Guidelines For The Repair Of Deteriorated Concrete Resulting From Reinforcing Steel Oxidation* and/or contact a Mainstay Technical Representative for information on removal techniques that are best for your application. Surfaces should have a minimum ICRI Concrete Surface Profile (CSP) #5 (preferably with aggregate exposed) and should be inspected for soundness prior to the application of **MAINSTAY ML-72**. Saturate all surfaces thoroughly with clean water and allow to surface dry just prior to the application of **MAINSTAY ML-72**.

#### MIXING:

Add 1.2 gallons of clean water per 65 lb bag. Mix thoroughly using a gasoline, electric, or hydraulically powered paddle-type mixer.

#### WORKING TIME:

Approximately 30 minutes at 80° Fahrenheit (F). The working time will be extended at lower temperatures and shortened when higher.

#### APPLICATION:

**MAINSTAY ML-72** can be applied by low to medium velocity wet mix shotcrete equipment (pneumatic spray) or by hand using a trowel. **MAINSTAY ML-72** can also be applied using spincasting equipment such as the Mainstay Mortar Spinner for vertical applications or the Mainstay Horizontal Spinner and Cable Puller for horizontal applications. Application thicknesses up to 5" in single or multiple passes are possible depending on the amount of water added, the condition of the surfaces being treated, and job-

## Mainstay ML-72 Sprayable Microsilica Restoration Mortar

site conditions. A variety of piston, sytolic, and rotor/stator pumps may be used depending on job requirements and desired production rates. Consult a Mainstay Technical Representative for information regarding equipment that is best suited for your job.

### FINISHING:

**MAINSTAY ML-72** can be finished using a steel trowel, wood float, sponge float, broom, or brush, depending on the surface texture desired. If **MAINSTAY ML-72** is to be top-coated, it is recommended that the surface be finished to a smooth, somewhat grainy texture using a sponge or wood float.

### CURING:

If applicable, **MAINSTAY ML-72** should be topcoated immediately after finishing or as soon as the surface becomes firm to the touch. If not top-coated, **MAINSTAY ML-72** should be kept moist with clean water for the first 72 hours after placement.

### CLEAN UP:

Clean equipment and tools with clean tap water.

### DELIVERY & STORAGE:

Check containers for damage, and verify quantities before accepting shipments. Store **MAINSTAY ML-72** in a cool, dry place.

### SHELF LIFE:

1 year, depending on storage conditions, subject to re-inspection thereafter.

### SAFETY:

KEEP OUT OF REACH OF CHILDREN.

FOR INDUSTRIAL USE ONLY.

**MAINSTAY ML-72** contains portland cement and chemicals that *MAY CAUSE EYE, SKIN, RESPIRATORY, OR NERVOUS SYSTEM SENSITIZATION*. Adequate health and safety precautions should be observed during all storage, handling, use, and drying periods. For best results and safest usage, user is specifically directed to consult

the current “Material Safety Data Sheet” for this product. When using this product in a confined space or closed area, consult the current the OSHA or American National Standards Institute (ANSI) bulletins on safety requirements. Do not take internally. If swallowed, call a physician immediately. Keep away from open flame, and keep containers tightly closed when not in use.

### WARRANTY:

All technical data, recommendations, and services are rendered by the Seller gratis. They are based on technical data that the Seller believes to be reliable and are intended for use by persons having skill and knowledge at their discretion and risk. Seller assumes no responsibility for results obtained or damages incurred from their use by the Buyer whether as recommended herein or otherwise. Such recommendations, technical advice, or services are not to be taken as a license to operate or intended to suggest infringement of any existing patent. MADEWELL PRODUCTS CORPORATION MAKES NO GUARANTEE OR WARRANTIES EXCEPT AS OTHERWISE PROVIDED IN WRITING AND DISCLAIMS ANY AND ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Compressive Strength ASTM C-109	24 hours 28 days	3,000 psi 10,000 psi
Flexural Strength ASTM C-293	24 hours 28 days	535 psi 1,505 psi
Tensile Strength ASTM C-496*	24 hours 28 days	330 psi 910 psi
Freeze/Thaw ASTM C-666	323 cycles	No Visible Damage
Shrinkage ASTM C-596	28 days @ 90% Rh	0%
Bond Strength ASTM C-882*	28 days	3,440 psi
Density		135 lbs/ft <sup>2</sup>

\*Uniaxial tensile bond strength should achieve a minimum of 1 Newton/mm<sup>2</sup> (145 psi) over a sound, properly prepared substrate. However, bond is highly dependent on degree of surface preparation and substrate strength.



# Mainstay® ML-72™

## Sprayable Microsilica Restoration Mortar



### FEATURES/BENEFITS

<b>LOW PERMEABILITY</b>	<b>NON SHRINK/CRACK RESISTANT</b>
<b>HIGH EARLY AND ULTIMATE STRENGTH</b>	<b>HIGH FLEXURAL AND BOND STRENGTH</b>
<b>EASY TO USE AND FINISH</b>	<b>HIGH BUILD</b>
<b>WATERPROOFS/DAMP-PROOFS</b>	<b>RESTORES DETERIORATED SURFACES</b>

### PRODUCT DESCRIPTION

**MAINSTAY ML-72** is a special blend of portland cement, microsilica, thermoplastic fiber, densifiers, admixtures, and other modifiers that produces a high strength and low permeability mortar for the rehabilitation of deteriorated concrete structures. **MAINSTAY ML-72** produces excellent adhesion to properly prepared existing concrete, brick, or steel surfaces. **MAINSTAY ML-72** can withstand corrosive environments with a pH of 3 or higher, restores structural integrity, seals rough, deteriorated surfaces, and resists external hydrostatic water pressure. **MAINSTAY ML-72** is suitable for permanent water immersion service.

**MAINSTAY ML-72** can be used to repair vertical, horizontal, and overhead surfaces of deteriorated steel and concrete structures such as sewer pipes, culverts, pits, sumps, trenches, tunnels, bridges, piers, or any structure that has experienced deterioration from exposure to aggressive environments. This product is available with polymer additives, **MAINSTAY ML-72F**. These polymer additives improve adhesion, tensile strength, and workability, especially in dry environments.

### PRODUCT DATA

#### COMPOSITION:

A proprietary mixture of special cements, silica fume, thermoplastic fibers, and modifiers. (**MAINSTAY ML-72F** contains polymer admixture.)

#### COLOR:

Dark gray.

#### YIELD:

.54 cubic feet (ft<sup>3</sup>) per 65 pound (lb) bag when mixed correctly.

#### COVERAGE:

Approximately 13 square feet (ft<sup>2</sup>) per bag at 1/2". Allowances should be made for waste.

#### THICKNESS:

Depends on the application. 1" is generally sufficient for smoothing concrete that has experienced surface attack (exposed aggregate). Minimum thickness is usually 1/2". Consult a Mainstay Technical Representative for specific recommendations.

#### PACKAGING:

Normally stocked in 65-lb bags.

#### SURFACE PREPARATION:

Prepare surfaces to be repaired by Low Pressure Water Cleaning (LP WC, 4,000 psi minimum), abrasive blasting, hand, or power tool cleaning to remove all unsound concrete, contaminants, dirt, debris, and/or deteriorated reinforcing steel. Refer to the International Concrete Repair Institute (ICRI) technical guideline titled *Surface Preparation Guidelines For The Repair Of Deteriorated Concrete Resulting From Reinforcing Steel Oxidation* and/or contact a Mainstay Technical Representative for information on removal techniques that are best for your application. Surfaces should have a minimum ICRI Concrete Surface Profile (CSP) #5 (preferably with aggregate exposed) and should be inspected for soundness prior to the application of **MAINSTAY ML-72**. Saturate all surfaces thoroughly with clean water and allow to surface dry just prior to the application of **MAINSTAY ML-72**.

#### MIXING:

Add 1.2 gallons of clean water per 65 lb bag. Mix thoroughly using a gasoline, electric, or hydraulically powered paddle-type mixer.

#### WORKING TIME:

Approximately 30 minutes at 80° Fahrenheit (F). The working time will be extended at lower temperatures and shortened when higher.

#### APPLICATION:

**MAINSTAY ML-72** can be applied by low to medium velocity wet mix shotcrete equipment (pneumatic spray) or by hand using a trowel. **MAINSTAY ML-72** can also be applied using spincasting equipment such as the Mainstay Mortar Spinner for vertical applications or the Mainstay Horizontal Spinner and Cable Puller for horizontal applications. Application thicknesses up to 5" in single or multiple passes are possible depending on the amount of water added, the condition of the surfaces being treated, and job-

## Mainstay ML-72 Sprayable Microsilica Restoration Mortar

site conditions. A variety of piston, syringe, and rotor/stator pumps may be used depending on job requirements and desired production rates. Consult a Mainstay Technical Representative for information regarding equipment that is best suited for your job.

### FINISHING:

**MAINSTAY ML-72** can be finished using a steel trowel, wood float, sponge float, broom, or brush, depending on the surface texture desired. If **MAINSTAY ML-72** is to be top-coated, it is recommended that the surface be finished to a smooth, somewhat grainy texture using a sponge or wood float.

### CURING:

If applicable, **MAINSTAY ML-72** should be topcoated immediately after finishing or as soon as the surface becomes firm to the touch. If not top-coated, **MAINSTAY ML-72** should be kept moist with clean water for the first 72 hours after placement.

### CLEAN UP:

Clean equipment and tools with clean tap water.

### DELIVERY & STORAGE:

Check containers for damage, and verify quantities before accepting shipments. Store **MAINSTAY ML-72** in a cool, dry place.

### SHELF LIFE:

1 year, depending on storage conditions, subject to re-inspection thereafter.

### SAFETY:

KEEP OUT OF REACH OF CHILDREN.

FOR INDUSTRIAL USE ONLY.

**MAINSTAY ML-72** contains portland cement and chemicals that *MAY CAUSE EYE, SKIN, RESPIRATORY, OR NERVOUS SYSTEM SENSITIZATION*. Adequate health and safety precautions should be observed during all storage, handling, use, and drying periods. For best results and safest usage, user is specifically directed to consult

the current "Material Safety Data Sheet" for this product. When using this product in a confined space or closed area, consult the current the OSHA or American National Standards Institute (ANSI) bulletins on safety requirements. Do not take internally. If swallowed, call a physician immediately. Keep away from open flame, and keep containers tightly closed when not in use.

### WARRANTY:

All technical data, recommendations, and services are rendered by the Seller gratis. They are based on technical data that the Seller believes to be reliable and are intended for use by persons having skill and knowledge at their discretion and risk. Seller assumes no responsibility for results obtained or damages incurred from their use by the Buyer whether as recommended herein or otherwise. Such recommendations, technical advice, or services are not to be taken as a license to operate or intended to suggest infringement of any existing patent. MADEWELL PRODUCTS CORPORATION MAKES NO GUARANTEE OR WARRANTIES EXCEPT AS OTHERWISE PROVIDED IN WRITING AND DISCLAIMS ANY AND ALL WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.

Compressive Strength ASTM C-109	24 hours 28 days	3,000 psi 10,000 psi
Flexural Strength ASTM C-293	24 hours 28 days	535 psi 1,505 psi
Tensile Strength ASTM C-496*	24 hours 28 days	330 psi 910 psi
Freeze/Thaw ASTM C-666	323 cycles	No Visible Damage
Shrinkage ASTM C-596	28 days @ 90% Rh	0%
Bond Strength ASTM C-882*	28 days	3,440 psi
Density		135 lbs/ft <sup>2</sup>

\*Uniaxial tensile bond strength should achieve a minimum of 1 Newton/mm<sup>2</sup> (145 psi) over a sound, properly prepared substrate. However, bond is highly dependent on degree of surface preparation and substrate strength.

