SILPRO MASCO

Underlayment and Repair Mortar
Polymer-Modified
Portland Cement-Based
Resurfacing / Patching / Leveling

Featheredge to 1/2" Inside
Featheredge to 1/4" Outside

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MASCO™ is a polymer-modified, Portland cement-based mortar used for patching, resurfacing, and leveling floors. It can serve as a wearing surface or as an underlayment for carpet, tile, wood, sheet goods, athletic surfaces, etc. The specially formulated **MASCO™** powder is mixed on the job with **C-21 ALL ACRYLIC™** Admix.

MASCO™ provides a tough, resilient surface that is highly resistant to abrasion and impact, and can withstand extreme fluctuations of temperature. Use it indoors or outdoors, above or below grade, on both horizontal and vertical surfaces, and in areas that may become totally submerged.

MASCO™ is available in regular gray, or in a light gray which closely resembles poured concrete.

Use Masco™ for

- Resurfacing warehouse floors and parking garages.
- Patching concrete floors, shipping docks, ramps, steps, sidewalks, driveways, and aprons.
- An underlayment for resilient floor covering of all kinds including carpeting, vinyl, and rubber.
- Restoring pitch, drainage, and nonskid surfaces in: Garages, laundries, commercial and industrial kitchens, locker and shower rooms, basements, docks and patios, hospitals, dairies, food processing plants, and all work and wash areas.
- Bedding and resetting tile, slate, brick, metal stair treads, flagstone, and marble.

Advantages

- **Excellent adhesion: MASCO™** bonds readily to new and old concrete, wood, plywood, cement plaster, stone, and clean steel.
- **Superior tensile, compressive, shear bond, and flexural strength:** Permits featheredging or thin patches on clean surfaces without the need for special preparation like roughening or cutting edges square.
- **Resistance to abrasion:** The abrasion resistance and high density of **MASCO™** make it an ideal patching and resurfacing material for high traffic and work areas. Performs exceptionally well under forklift traffic. Even broom textured, non-skid finishes receive extended life.
- **Resistance to freeze/thaw lifting:** Since **MASCO™** has the same coefficient of expansion and contraction as the concrete to which it is bonded it resists lifting, spalling, or crumbling after freeze/thaw cycling or extremes of high or low temperatures.

Advantages, (Cont.)

- **Increased resistance to de-icing salts.**
- **Shortened curing time:** Most new or repaired surfaces of **MASCO™** can be put into service within 24 to 48 hours (over a weekend). Thick patches or those in heavy work or high traffic areas may require up to four days for curing depending on temperature and other conditions.
- **High impact resistance and flexural strength:** These combined characteristics make Masco the ideal surface for loading docks and warehouse floors, and the ideal topping for use over Silpro Easy Patch for repairing sidewalks.
- **Improved dimensional stability:** The Silpro C-21 All Acrylic Admix used in the preparation of Masco produces an internal curing membrane which retains the water of hydration. This prevents premature drying, promotes thorough curing, and results in higher strength and greater durability.
- **Enhanced resistance to chemical attack:** Surfaces of Masco suffer little or no effect from prolonged exposure to common chemicals, soaps, industrial cleansers, animal and vegetable fats, urine, and kitchen and dairy breakdown products.
- **Nailability:** Because Masco is polymer-modified it can be nailed into without shattering or splitting.

Test Data

Compressive Strength:	ASTM C-109	4200 psi
Flexural Strength:	ASTM C-348	1560 psi
Tensile Strength:	ASTM C-190	1040 psi
Absorption:	ASTM C-67	
	24 Hr. soak 2.5%	
	Saturation Coefficient: 0.44	
Density: 1.9	Loss by Abrasion: 1.8%	
	Taber Abrader — 400 cycles	
Bond Strength to Concrete:	ASTM C-321	
	Crossed brick method / Failure in concrete	

Compressive testing at 3.0 quarts per 40 lb

Prior To Starting The Job

Know the history. Before beginning a flooring job involving a cementitious coating, topping or patch, it is often helpful to know the history of the slab and the structure of which it is a part. If possible, ask someone familiar with the building what the building or the floor was used for in the past. How was the slab/floor built? Maintained? Cleaned? What was most recently on the floor? How was it removed? With chemicals? Shot-blasting equipment? Other methods?

Inspect

Visually inspect the surface of the floor and, if possible, the structure of the building. Are there any cracks? Does the surface look like concrete or cementitious material in color and texture? Is it soft? Coated? Sticky? Slippery? If you rub it, does the cloth come up stained? Does the area or the surface have an odor?

Hardness of Surface

Test the surface for hardness by scratching it with a knife or screwdriver, or have a qualified engineer perform a quantitative test.

Soundness of Bond

If going over an existing repair, test the surface for soundness of the bond of the repair to the substrate by tapping it with a hammer while listening for hollow sounds. If the substrate itself is hollow, cut it out and replace it.

Dusting of Surface

If there is dust you may have an unsound surface that is prone to dusting and unsuitable for the application of a topping.

Such a surface may be the result of the slab having been rained on, or frozen when it was freshly poured. Other possible causes include the application of de-icing salts to fresh concrete, carbonation, an over-troweled finish, or placement of concrete that sat too long in the truck.

Hidden Chemicals

In some jobs there may be oil or other chemicals hidden below the surface. These materials may affect adhesion of the coating, or may migrate up through the concrete and the coating in the future causing staining, or failure of the adhesive holding the finished flooring.

Presence of Sealers

Test for the presence of a sealer, etc., by placing drops of water on the surface. If the water doesn't absorb into the surface immediately, rub it with your finger as dust may be causing surface tension. If it still doesn't absorb immediately this indicates the presence of a sealer/coating or organic substance in the substrate which may prevent adhesion of a topping.

Additional Testing

If the prior building use included the handling or storage of food, oil containing materials like wool or machinery, acids or strong chemicals, additional testing or research may be necessary.

Surface Preparation

Surfaces must be clean, sound, and free of standing or flowing water.

Remove deteriorating concrete, loose material, oil, grease, wax, form-release agents, water-soluble materials, gypsum patches, any foreign matter, and all coating materials that may prevent the topping from developing adequate bond. A mechanical method of surface preparation is recommended. **Note:** Removing deteriorated concrete and loose material is espceially important when preparing exterior concrete slabs and sidewalks.

Remove mold and mildew by applying either bleach mixed 1:1 with water, or tri-sodium phosphate following manufacturer's instructions and rinsing thoroughly. Remove moss with a commercially prepared moss remover, then clean off surface mechanically or with water. Any removal agent should be rinsed thoroughly from the surface before proceeding.

Floors that have been polished smooth or sealed should be tested for adhesion.

Apply a sample of at least 1 sq. ft., wait 2-4 days, and then try to pry off the patch with a hammer and chisel. If there is any question about the **MASCO™** adhering, please call Silpro before proceeding with the application.

Note: Even if the sample patch bonds adequately to the smooth or sealed surface, do not apply **MASCO™** over 1/4" thick if any dimension is longer than 15' as the accumulated shrinkage stress may cause cracks and adhesion failure. Instead, clean and roughen the surface mechanically, or place control joints at intervals of 15' or less.

In lieu of testing, polished floors should be shot-blasted or scarified and sealed floors should be shot-blasted, scarified, or completely stripped.

Rusted or corroded metal within the patch area must be sand blasted or wire brushed clean. Coat all metal with an anti-rust sealer such as a slurry of **MASCO™** and **C-21 ALL ACRYLIC™.**

Note: Areas that show efflorescence or to which snow removal salts have been applied should be shot-blasted (preferable), power-washed with detergent, or cleaned with muriatic acid following the manufacturer's instructions, and rinsed thoroughly prior to being coated with **MASCO™**.

Wooden floors must be clean, rigid, and well fastened. Nail and screw heads should be set level with or below the surface.

Saturated vertical surfaces must be allowed to drain and horizontal surfaces should be vacuumed, blown, swept or squeegeed to remove standing water.

Surface Preparation Methods

When choosing which preparation method to use take a look at what type of contaminant must be removed. How much? What is the desired profile (texture) of the surface prior to coating? The condition of the floor? What coating will be applied later? Will noise and dust be a problem? What else is going on in this space, and in the adjoining work areas? What are the environmental considerations?

Mechanical Cleaning Methods/Tools Include:

- Shot-Blast
- Scarifier
- Chipping Hammer
- Sand-Blast
- Water-Blast and Pressure Wash
- Wet-Blast
- Bush Hammer • Scabbler
- Needle Scaler

Note: After a mechanical cleaning be sure to remove any loose material by vacuuming.

Chemical Cleaning Methods Include:

- Detergent
- Acid Etch
- Chemical Stripper/Paint Remover • Degreaser

Note: After a chemical cleaning be sure to neutralize the surface and rinse thoroughly. Follow manufacturer's instructions.

Cracks in the Substrate

Active: If the crack or break is active, i.e., still moving due to forces such as settlement, frost, expansion, contraction, etc., consult an engineer.

Static: If the crack or break is not active, cut out to 3/4" depth or greater and fill with **MASCRETE™** mixed with undiluted **C-21 ALL ACRYLIC™**, or **EASY PATCH FAST-SETTING REPAIR MORTAR™** mixed with undiluted **C-21 ALL ACRYLIC™**.

Apply a Test Patch

To confirm the suitability of the surface for adhesion of the coating, and that the final appearance and function will be as the owner, architect, and contractor expect, install a 10' x 10' test patch at the maximum designed thickness anticipated on the project and subject it to anticipated service conditions before beginning the entire job.

Priming

Surfaces will be easier to work and yield a better bond if they are primed with **C-21 ALL ACRYLIC™**. Over concrete — For optimum performance prime concrete surfaces with undiluted **C-21 ALL ACRYLIC™**.

Over wood (interior only) — A primer coat of 1 part **C-21™**:

1 part clean, potable water should be applied directly to wooden surfaces and allowed to dry. Re-prime with undiluted **C-21™** just prior to coating with **MASCO™**.

Priming, (Cont.)

Note: Use only new plywood decking as a substrate.

Prime the surface just prior to applying **MASCO™**. **MASCO™** may be applied while the surface is either tacky or dry.

Mixing

Mixing Proportions:

Use 3 1/2 quarts of **C-21 ALL ACRYLIC™** Admix per 40# bag of **MASCO™**.

Mixing Procedures:

For featheredge to 1/4" (1/2" indoors): In a clean container, mortar box, or paddle mixer, add **C-21 ALL ACRYLIC™** Admix to the **MASCO™** powder. Do not add water. Mix thoroughly to obtain a trowelable consistency, but do not overmix. Too much mixing will entrap air, reducing adhesion and strength. Let stand 3-5 minutes. Remix for 20-30 seconds adding a small amount of **C-21 ALL ACRYLIC™** if necessary.

Note: For thicknesses greater than 1/4" outside, or 1/2" inside, use **MASCRETE STRUCTURAL REPAIR MORTAR™**. Please refer to Product Data Sheet.

For 1/4" to 1": If **MASCRETE™** is not available, extend a 40# bag of **MASCO™** with 15# – 20# of clean, coarse sand, or small, clean rice stone. Add the sand or stone after the **C-21™** has been mixed with the **MASCO™** powder. Adjust the amount of **C-21™** as necessary.

Applying

Place and trowel **MASCO™** to the desired thickness. Lubricate the trowel with **C-21 ALL ACRYLIC™** to prevent dragging. Do not use a power trowel. Do not overtrowel. **MASCO™** may be steel troweled, floated or broom finished for a non-skid surface.

Indoors **MASCO™** may be applied up to 1/2" thick in a single application.

All control and expansion joints must be carried through the **MASCO™** Do not bridge them because they may crack.

Note: If drying conditions include hot, dry, or rapid air movement: correct the conditions if possible, protect the surface from rapid drying, dampen the substrate before application, and do not apply **MASCO™** thicker than 1/4 ".

Working time is from 15 – 45 minutes, depending on surface conditions, thickness, temperature, humidity, and air movement.

The **MASCO™** mix may be retempered up to 1 hour from original mixing by remixing and adding a little more **C-21 ALL ACRYLIC™** Admix if necessary.

Clean up: Clean equipment and tools with water during and immediately after use.

Curing

MASCO™ is self-curing under normal conditions. DO NOT WET CURE. Latex needs to air cure to properly coalesce.

MASCO™ should be allowed to cure before painting.

Curing, (Cont.)

Consult paint manufacturer's label for recommendations.

MASCO™ will be ready for light foot traffic in 12 to 24 hours. Heavy traffic areas may require up to 4 days for curing depending on temperature and other conditions.

Extreme Temperatures and Conditions

Cold: Polymer emulsions, also called "latexes", must coalesce (have water evaporate allowing the polymer to come together within and under the coating) to form a film. This film is necessary to produce a good bond and a durable coating.

C-21 ALL ACRYLIC™ must coalesce at or above 50˚F. (10˚C.) to perform properly. Therefore, keep newly applied **MASCO™** above 50˚F. (10˚C.) for 24 hours under good drying conditions, and 48 hours for thick applications and/or slow drying conditions.

Hot: Polymers within the material form a film on the surface and retard the passage of water out of the coating.

If it is hot, dry and windy, however, this film may not be sufficient to prevent the water from being drawn out of the coating before the Portland cement has a chance to hydrate. Excessive heat and drying conditions, especially outside, could cause shrinkage and adhesive failure.

Ultimate strength and bonding will be improved by covering the coating, after it has dried for an hour or two and is hard to the touch, with paper or sheet plastic to protect the surface from drying out too fast. Remove covering when conditions cool down to allow coating to air cure.

Humidity

Water must evaporate for polymer emulsions to coalesce and that process is slowed by excess humidity. For best results allow polymer-modified toppings to cure with adequate ventilation.

Limitations

- Apply **MASCO™** only if temperature of air, surface, and material is above 50˚F. (10˚C.) and will not fall below that for 24 – 48 hours after application. Then keep patched area above 32˚F. (0˚C.) for a total of 7 days.
- Do not add set-accelerating admixtures.
- **MASCO™** may be applied over new concrete the next day (as soon as it is hard enough to walk on).
- As **MASCO™** begins to set a greenish latex film will form. This is normal and will disappear.
- Do not apply **MASCO™** over plywood outside, or over plywood in damp areas inside, as the plywood will delaminate.

Caution!

SILPRO offers products that may contain cement, latex, epoxy, and other chemicals. Please review the Safety Data Sheet before the use of this product.

Limitations, (Cont.)

- Protect from strong winds and/or direct sun during placement and finishing.
- For temperatures higher than 90°F. consult with Silpro's Technical Service Department.
- In storage keep Masco bag dry and protect **C-21 ALL ACRYLIC™** from freezing.

Package Size

MASCO™ powder:

40# Plastic lined bag (18.14 kg.) 80# Plastic lined bag (36.28 kg.)

C-21 ALL ACRYLIC™:

1 Gallon Plastic jug (3.79 liters) 5 Gallon Plastic pail (18.93 liters) 55 Gallon Drum (208.23 liters)

Approximate Coverage

Per 40# bag mixed with approximately 1 gallon of **C-21 ALL ACRYLIC™** Admix (adjust proportions depending on application): 80 sq. ft. (7.5 sq. m.) at 1/16" thickness

40 sq. ft. (3.7 sq.m.) at 1/8" thickness

20 sq. ft. (1.9 sq.m.) at 1/4" thickness

With 15# of sand:

12 sq. ft. at 1/2" thickness

Shelf Life

2 Years

Guarantee

Please call **SILPRO**, LLC for copy of guarantee.

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