

Division III Concrete Repair and Restoration

A.H. Harris & Sons, Inc.®



CONSTRUCTION SPECIALTIES

Since 1916



Shallow Depth Repair

Use Polymer modified products for thin mil overlays and repair of bugholes. We have product, and equipment to complete this process.



Notice the state of the art rotary machine for high production finishing.

Products

Low Velocity Spray (Shallow Depth)

Emaco S 88 CI

Emaco R 350 CI

Emaco R 310 CI

Low Velocity Applications

Best applied using the AHH carousel pump.



The product can be applied in confined areas where less production is needed.

Chemical resistant linings with 1/2" or less will do well with this equipment.

Products

Low Velocity Spray (Shallow Depth)

Emaco S 88 CI

Emaco R 350 CI

Emaco R 310 CI

Trowel Applied Applications

Trowel applied applications of repair mortars are best done in shallow depth areas where rebar is not encountered.



Products

Vertical by Hand

Emaco S 88 CI

Emaco R 350 CI

Over head by Hand

Emaco R350 CI

Emaco S88 CI

Horizontal by Hand

Emaco S66 CI

Emaco S 77 CI

Masterpatch 240 CR

Emaco R310 CI

Emaco T-415

Emaco T-430

Form and Pour

Form and pour is best used with small size, deep repair areas. Extend the products with aggregate to reduce heat during curing and save up to 30% of the product cost.



Products

Form and Pour 1" or less

Emaco R310 CI

Emaco S77 CI

Emaco T-415

Emaco T-430

Form and Pour Aggregate Added

Emaco R310 CI

Emaco S77 CI

Emaco T-415

Emaco T-430

Form and Pour Aggregate in bag

Emaco S66 CI

Masterpatch 240 CR

Form and Pour



Form and pump makes placement of products fast using swingtube equipment.

This equipment will mix the product and then dump it forward into the pumping chamber.

Products may be pumped to open form areas; or pumped through packers into forms.



Specifications for this process are available

Products

**Form and
Pump Neat**

Emaco S77 CI

**Form and Pump
Aggregate Added**

Emaco S77 CI

**Form and Pump
Aggregate in bag**

Emaco S66 CI

Masterpatch 240 CR

Dry Mix Shotcrete

Dry mix shotcrete is generally used when products need to move long distances. The powder product is projected up the pipe in dry form and water is introduced at the nozzle by using a water ring attachment. Excessive rebound may be encountered with this process.



————— Products —————

Shotcrete Dry

Emaco S 88 CI

Shotpatch 21 F

Wet Mix Shotcrete

Wet Mix Shotcrete is mixed with water at the pumping unit, pumped up the hose and projected on to the repair area. On large projects 400 to 600 bags of material can be placed per shift.



Specifications for this process are available

Products

Shotcrete Wet

Emaco S 88 CI

Emaco R 350 CI

Shotpatch 21 F

Glossary

Low Velocity Spray- Method for application of repair materials up to a depth where reinforcing bar is encountered. This may be by a hopper gun or with carousel pump equipment.

Dry Mix Shotcrete- Repair material is placed dry or slightly damp into shotcrete machine and mixed with compressed air. The mixture is transported via hose to the exit nozzle where water and admixtures, if any, are introduced. The ingredients are propelled onto the prepared substrate by the force of the compressed air.

Wet Mix Shotcrete- Pre-batched and thoroughly mixed repair material is placed into a concrete pump and transported via pump line to an exit nozzle where compressed air and admixtures, if any, are introduced. The repair material is propelled onto the surface by the compressed air.

Corrosion Inhibitor- A chemical compound which, when added in small concentrations to concrete or mortar, effectively checks, decreases, or prevents the reaction on embedded metal (rebar) with the environment (rusting).

Accelerated- To hasten or quicken the natural process or progress of a reaction or event. Accelerated repair mortars should not be pumped.

Liquid Polymer Component- An emulsion of a natural or synthetic rubber in a water phase. The contents of the jug in the “jug and bag” products-often referred to as “milk”. Enables the mortar to bond better, increases density and abrasion.

Integral powdered polymer- Dry powdered latex added the mortar and is activated when water is added to the product.

Silica Fume- Highly reactive pozzolana, and by product of ferrosilican production. 100 times smaller than a piece of cement, these particles interlock during the hydration process making the repair mortar very dense. Also increases bonding ability and abrasion.

Fly Ash- A mineral pozzolan added to repair mortars to reduce segregation and bleeding. Fly Ash will also reduce the heat caused by hydration by up to 40%. This enables the product to be accelerated for maximum quick setting ability.

Fiber Reinforced- Fibers are made from steel, plastic, glass, and natural materials and come in many sizes and shapes. May improve flexural strength, impact strength, toughness, fatigue strength, and resistance to cracking.

Light Weight Hollow Nodule- Hollow spheres (glass like) that are added to mixes to reduce their weight for overhead applications. These products should not be used where abrasion may be a factor.

Shrinkage Compensated- A hydraulic cement that expands slightly during the early hardening period after setting of the repair mortar. They are used to compensate for the volume decrease due to drying shrinkage.