ChemMasters®

SPECIALTY CONSTRUCTION PRODUCTS

ChemMix™

High Strength Concrete Mix
with Corrosion Inhibitor

P R O D U C T D A T A

DESCRIPTION

ChemMasters' ChemMix is a concrete mix designed to provide all the workability characteristics of high strength ready-mix concrete with added corrosion inhibitor. When blended with water and stone **ChemMix** can be poured into forms, vibrated in place, and finished in depths up to 10 inches. **ChemMix** provides all the working time needed to mix and finish large concrete pads even when mixing only one bag at a time.

USES

- Interior or exterior applications where a high strength concrete mix is desired and ready-mix concrete is not practical; including patios, sidewalks, porches, footers, or other concrete pads.
- Filling deep holes or replacing concrete in interior or exterior applications where high strength concrete is desired.

ADVANTAGES

- Mixes to the consistency of high slump ready-mix concrete.
- Integral corrosion inhibitor protects structural steel and rebar.
- Can be extended with up to 35 lbs. of stone per bag for deeper pours.
- Can be broom or steel trowel finished Excellent workability.
- Resistant to freeze thaw damage Contains no gypsum or metallic particles.

Packaging & Part Number		
50 lb (22.7 kg)	56 per pallet	F2025.50

TECHNICAL DATA

Data shown is based on independent laboratory tests. Actual results may vary as a result of environmental and jobsite conditions.

Physical Properties	
Color	Light concrete gray
Working time @ 70°F (21°C)	1 hour minimum
Water requirements/bag	3.0 to 3.25 qt (2.8 to 3.0L)

ASTM C191 Vicat Method Set Time	
Initial	**Final**
3 hours 56 min	5 hours

ASTM C109 Compressive Strength (average of three 2" cubes)				
	1 day	**3 day**	**7 day**	**28 day**
psi	4310	5420	6720	8630
MPa	29.72	37.37	46.33	59.50

ASTM C39 Compressive Strength Extended 50% with 3/8" silica gravel average of 3 cylinders				
	1 day	**3 day**	**7 day**	**28 day**
psi	3520	4890	6210	7360
MPa	24.27	33.72	42.82	50.74

ASTM C78 Flexural Strength Extended with 50% 3/8" gravel 3"x3" x 11" beams average of 3 tests			
	3 day	7 day	28 day
psi	570	650	700
MPa	3.93	4.48	4.83

ASTM C157 Shrinkage Test 1"x1"x11.25" prism effective length of 10" Air cured 50% Relative Humidity % total Shrinkage at x days						
1 day	**2 day**	**3 day**	**7 day**	**14 day**	**21 day**	**28 day**
0.12	0.059	0.059	0.096	0.126	0.136	0.142

Slant Shear Bond Strength ASTM 1042 with bonding slurry mixture. Avg of three 3" diameter cylinders			
	1 Day	**7 day**	**28 day**
psi	920	1130	1410
MPa	6.34	7.79	9.72

ChemMasters®
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Estimating Guide Extension values are estimated			
Bags	**Water**	**Extension/ stone**	**Yield**
1	3 quarts	None	0.42 ft^3
1	3 quarts	35 lbs	0.60 ft^3
64	48 gal	None	1 yd^3
45	33.75 gal	1575 lbs	1 yd^3

Freeze Thaw Durability NYS DOT Test Method 502 3P	
% loss after 50 cycles	1.7

DIRECTIONS

Surface Preparation: If using **ChemMix** as replacement concrete, area to be repaired must be free of all dust, dirt, loose concrete, oil, grease, old asphalt, curing and sealing compounds, form release agents, efflorescence, or other contaminants that might interfere with adequate bond. Square cut perimeter of holes to a minimum depth of one inch (2.5 cm), undercutting to sound concrete when possible.

Exposed reinforcing steel (NACE 3 Standard SSPC SP6) must be cleaned to a bright metal removing all rust or signs of oxidation. Chip out concrete behind or under rebar to a depth of 3/4" (1.9 cm). Coat any exposed steel with **Polyweld EPX^{CI}** or other corrosion inhibiting bonding agent as specified and allow to dry. Immediately prior to placement of **ChemMix** remove any remaining dust or dirt with vacuum or oil free compressed air. Saturate the prepared area with clean, potable water to the point of rejection. Remove any puddles or standing water immediately before placing mortar so that concrete is in a Saturated Surface Dry (SSD) condition. If using **ChemMix** to build a new area, follow all normal surface preparation procedures for concrete placement including compacting the substrate, forming the area, addressing drainage issues, etc. Apply form release agent to forms and allow to dry.

Mixing: Condition the dry mortar and clean potable mix water to 65° to 75°F (18° to 24°C). Do not add additional water or re-temper after initial mixing procedure. When mixing one bag use a variable speed drill with a jiffler paddle. For multiple bags or deeper pours use a mortar mixer. Refer to Estimating Guide for water requirements and yield. For deeper pours add up to 35 lbs. of clean stone to the mix. Add **ChemMix** to the mixing vessel and continue mixing for approximately 3 minutes to achieve a lump free consistency. Do not over mix. Add up to 1/2 pint of additional water per bag to adjust to the desired finishing consistency. Over watering causes excessive shrinkage and lower strengths. In exterior applications, check the air content of the mix prior to pouring. If the air content is under 3% add up to 1/2 ounce of chemical air entraining agent per bag to get the air content up to 6%.

APPLICATION: Scrub a mortar bond coat into the repair area being sure to fill all voids and pores. Do not allow bond coat to dry before placement of mortar. Poor substrate conditions may require the use of a chemical bonding agent. Compact mortar firmly into repair area filling all voids and air pockets paying special attention to spaces beneath any reinforcing steel. Vibrators are recommended for deeper pours or where reinforcing steel is used. Finish the same as ready-mix concrete with floats, trowels, or brooms.

CURING: ChemMix continues to gain strength as long as it is damp. Apply a curing compound that meets ASTM C309 or ASTM C1315 such as **Polyseal**, **Polyseal A**, or **PolysealWB** as soon as all bleed water has dissipated and application will not mar the surface. Call ChemMasters' Technical Service Department for recommendations regarding other curing methods. Light foot traffic may be allowed in approximately 24 hours. **Extreme Temperature Application**: Temperatures above 80°F (26.7°C) - Cool the substrate with cool clean potable water. Prior to mixing keep material in cool, dry area, and use cold water for mixing. Temperatures below 50°F (10°C) - Keep material warm and use lukewarm water to speed set time.

LIMITATIONS

- Do not apply to frozen or frosted surfaces. Warm sustrate to a minimum of 40°F (4°C) prior to application
- Do not apply if ambient or substrate temperatures are below 40°F (4°C).

STORAGE

Store between 40° and 90°F (4° and 32°C) in unopened bags on pallets in a dry area. Shelf life of properly stored material is one year from date of manufacture.

Precautions: Danger

Harmful if swallowed. Causes severe skin burns and eye damage. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer. May cause damage to organs through prolonged or repeated exposure if inhaled. Precautionary Statements: Do not breathe dust/fume/gas/mist/vapours/spray. Wash hands and skin thoroughly after handling. Do not eat, drink or smoke when using this product. Use only in a well-ventilated area. Contaminated work clothing should not be allowed out of the workplace. Wear protective gloves/protective clothing/eye protection/face protection.

All label precautions and the safety Data Sheet must be fully understood before using this product.
Keep out of the reach of children.

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