



Technical Information

MIXING & PLACING GUIDELINES FOR BASIC SHOTCRETE MIXES

Storage: Bring material to 70° - 90° F at least 72 hours prior to use. Store in a cool, dry area under cover.

Water:

1. Water must be clean, fresh, potable.
2. Refer to the data sheet for the correct amount of mixing water.

Mixing:

1. All tools and equipment must be clean, especially mixers.
2. Refractory paddle mixer, vertical shaft turbine mixer or other high intensity mixer should be used. A concrete mixing truck can be used if properly cleaned out.

Sequence:

1. Dry mix for 30 seconds
2. Add 2/3 of the total water
3. Mix two-three minutes
4. Add additional remaining water
5. Mix seven more minutes after final water is added
6. Recommended wet mix temperature is 60-100°F
7. Hose or slick pipe must be lubricated prior to pumping.

Additions:

1. Metal fibers can be added slowly during wet mixing.

Working Time:

1. 20 to 60 minutes after mixing at correct water level , at 70°F mix temperature

Pumps:

1. Swing tube (S Valve) type or ball valve pump
2. With metal fiber additions use swing tube (S Valve) type

Flow Test:

1. A special flow test is available to determine proper consistency.

Finish/Cure:

1. 1. Don't overwork or excessively trowel the surface. A smooth surface inhibits moisture removal during drying.

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2. The installed material should be raised to 300oF immediately. Do not hold at a temperature below a furnace shell temperature of 250oF unless excessive steaming is evident.
3. Hold at 300° F for one hour per inch of lining thickness (minimum of 6 hours).
4. Water must be removed as soon as possible to minimize hydration of the MgO grain.

Bulkheads/Forms:

1. Bulkheads may be necessary in some shotcrete installations.
2. Bulkheads must be sturdy and securely anchored to prevent shifting or lifting and joints must be sealed tight.
3. Steel bulkheads are preferred. When wooden bulkheads are used; presoak or seal to prevent water loss from the castable. Do not burn out wooden bulkheads.
4. Forms should be coated with a parting material. Forms should be heated in cold weather because a cold form will draw heat from the mix and may make form removal difficult.