



SPECSHOT SHOTCRETE

1-888-SPECMIX

DIVISION **03**
SHOTCRETE PRODUCTS



High Strength. High Performance.

SPEC MIX® SPECSHOT 5000 MS and MSA are preblended, high early strength, cement-based products designed to be used for wet or dry process applications, such as, underground work, tunneling or any other project where high-performance shotcrete is to be installed on vertical, overhead or horizontal surfaces. They can be custom designed and packaged

MATERIALS USED

PORTLAND CEMENT
FLY ASH
SILICA FUME
FIBERS (EITHER STEEL OR SYNTHETIC)
AGGREGATES
SPECIAL CHEMICAL ADMIXTURES

to meet specific properties and/or project requirements. These preblended shotcrete mixtures are specially formulated to produce a cohesive and fast-setting material with good shooting, adhesion and strength characteristics. SPECSHOT 5000 MSA is an air-entrained shotcrete mixture.

SPECSHOT 5000 MS and MSA are produced under strict manufacturing standards and complete quality control measures are implemented with each batch. A digital printout displaying the proper proportions per batch may be kept as a permanent record. Each SPEC MIX® manufacturer certifies that SPEC MIX® shotcrete products are designed to meet the project specifications and applicable ASTM and ACI standards.



TOTAL QUALITY CONTROL WITH EVERY BAG
REDUCED LABOR COSTS AND STORAGE SPACE
CONSISTENCY BATCH TO BATCH
GREAT ADHESION CHARACTERISTICS
UP TO 18 INCH THICK LAYERS WITH ONE PASS
LESS REBOUND
EXCELLENT DURABILITY AND STRENGTH
TRANSIT TIME IS NOT A CONCERN FOR DEEP MINING

INSTALLATION/APPLICATION

SPEC MIX® SPECSHOT 5000 MS and MSA are dry preblended products that may be used in either wet or dry processes. If predampening is not feasible, a SPEC MIX® representative should be contacted prior to project setup. Shotcrete should be installed in accordance with the provisions of the national or local building code and The American Concrete Institute's recommended practices (ACI 506R-90, "Guide to Shotcrete"). Shotcrete products should be applied only by an experienced, certified nozzleman.

When combining water with the shotcrete mixture, either during mixing for wet process application or at the nozzle for dry process applications, use clean, potable water.

Once the water is combined with the shotcrete mixture, all of the batched SPECSHOT 5000 MS or MSA should be installed before a loss of consistency is experienced. This time period may be shorter in hot weather conditions. Dry conditions may cause the shotcrete to harden more rapidly. Prior to application of the shotcrete, the substrate should be cleaned and evenly moistened, but not saturated.

Although SPECSHOT 5000 MS and MSA shotcrete reduces rebound, some rebound is to be expected. Do not incorporate rebound material back into the applied shotcrete.

Once the shotcrete is applied, a variety of finishing techniques can be used to achieve the desired surface texture. After the desired finish is achieved, provide sufficient moisture to permit continuous hydration of the cementitious materials for optimum curing.

SIZES AND EQUIPMENT

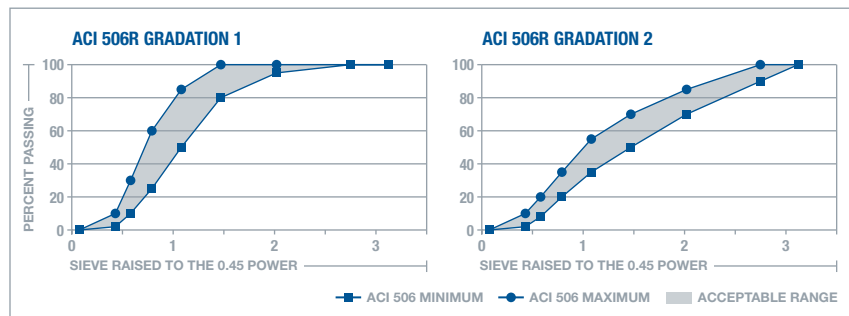
SPEC MIX® shotcrete mixes are available in 80 lb. (36 kg.) or 94 lb. (42kg.) packages for easy hand loading or in 3000 lb. (1362 kg.) reusable bulk bags to be used with the various patented SPEC MIX® silo systems. When using the silo system, once the bulk bags of shotcrete mix are delivered to the project site, the portable silo is loaded with a jobsite forklift and the product is dispensed into the shotcrete machine as needed. Just add water at the nozzle and the shotcrete is ready to shoot.

WARRANTY

Seller warrants that its Product will conform to and perform in accordance with the product specifications. The foregoing warranty is in lieu of all other warranties, expressed or implied, including, but not limited to, those concerning merchantability and fitness for a particular purpose. Because of the difficulty in ascertaining and measuring damages hereunder, it is agreed that, except for claims from bodily injury, Seller's liability to the Buyer or any third party, arising out of the purchase of the Product from the Seller by

TYPICAL AGGREGATE GRADATION DATA

AGGREGATE GRADATION PLAYS A CRUCIAL ROLE IN THE PERFORMANCE OF SHOTCRETE. THE MAJORITY OF THE SPEC MIX MANUFACTURING FACILITIES PRODUCING SPECSHOT NATIONWIDE ARE ABLE TO PROVIDE COMBINED AGGREGATE GRADATIONS THAT MEET ACI 506R GRADATION NUMBERS FOR 1, 2 OR 3 AS SPECIFIED IN TABLE 2.1. WHERE LOCAL MATERIALS DO NOT MEET THE COMBINED AGGREGATE GRADATION REQUIREMENTS, PRECONSTRUCTION TESTING CAN BE PERFORMED TO SHOW COMPLIANCE TO PROJECT SPECIFICATIONS.



TYPICAL PRODUCT DATA

	SPECSHOT 5000 MS	SPECSHOT 5000 MSA
COMPRESSIVE STRENGTH (ASTM C 42)		
1-DAY	2790 PSI	3200 PSI
3-DAY	4670 PSI	4920 PSI
7-DAY	6020 PSI	5760 PSI
28-DAY	6080 PSI	6050 PSI
56-DAY	7510 PSI	7280 PSI
FLEXURAL STRENGTH (ASTM C 78)		
28-DAY	990 PSI	840 PSI
HARDENED AIR CONTENT (ASTM C 457)	-	6.0%
SPACING FACTOR	-	200 µm
RAPID CHLORIDE PERMEABILITY (ASTM C 1202) IN COULUMBS	514 (VERY LOW)	210 (VERY LOW)
VOLUME OF PERMEABLE VOIDS (ASTM C 642)	9.4%	9.0%
RAPID FREEZE/THAW (ASTM C 666) DURABILITY FACTOR	99	100

DATA WAS COMPILED FROM IN-HOUSE LABORATORY AND FIELD TRIALS AND REPRESENTS ACHIEVABLE RESULTS. ACTUAL RESULTS MAY VARY DUE TO WORKMANSHIP, REGIONAL MATERIAL VARIATIONS, AND JOBSITE CONDITIONS.

APPLICABLE STANDARDS: ASTM AND ACI

ASTM C 1116 STANDARD SPECIFICATION FOR FIBER-REINFORCED CONCRETE AND SHOTCRETE; ASTM C 42 STANDARD METHOD FOR OBTAINING AND TESTING DRILLED CORES AND SAWED BEAMS OF CONCRETE; ASTM C 78 STANDARD TEST METHOD FOR FLEXURAL STRENGTH OF CONCRETE [USING SIMPLE BEAM WITH 3RD POINT LOADING]; ASTM C 642 STANDARD TEST METHOD FOR DENSITY, ABSORPTION, AND VOIDS IN HARDENED CONCRETE; ASTM C 666 STANDARD TEST METHOD FOR RESISTANCE OF CONCRETE TO RAPID FREEZING AND THAWING; ASTM C 1202 STANDARD TEST METHOD FOR ELECTRICAL INDICATION OF CONCRETE'S ABILITY TO RESIST CHLORIDE ION PENETRATION; ACI 506 SPECIFICATION FOR SHOTCRETE

Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

LIMITATIONS

Since variation in properties of shotcrete-making materials can be significant, trial shoots using test panels must be performed to verify the properties of each mixture. Properly mixed and installed shotcrete requires little to no maintenance.

WARNING

This product contains greater than 0.1% crystalline silica. Avoid breathing dust; use a NIOSH-approved dust respirator and use only with adequate ventilation to keep dust levels below permissible levels. Also contains cementitious materials. Injurious to eyes. Contact

with freshly mixed product can cause severe burns. Avoid eye contact or prolonged contact with skin. Wash thoroughly after handling. In case of eye contact, flush with plenty of water for 15 minutes. Consult a physician. Keep out of the reach of children.

TECHNICAL SUPPORT

- CONTACT YOUR LOCAL SPEC MIX® MANUFACTURER
- VISIT WWW.SPECMIX.COM
- CONTACT SPEC MIX®, INC.
PHONE: 888-SPEC-MIX FAX: 888-FAX-SPEC