Structurally Sound. Highly Fluid.

SPEC MIX® Self Consolodating Grout (SCG) is a dry preblended grout specifically designed to be highly fluid without segregation of the constituents. SPEC MIX SCG is used to bond together adjacent masonry units, fill bond beams and occupy all areas around steel reinforcement in the cores of the masonry assembly without mechanical consolidation or reconsolidation. SPEC MIX SCG offers significant labor saving opportunities to the masonry contractor while providing enhanced performance over standard grout products and conventional grouting techniques. SPEC MIX SCG provides superior fluidity over conventional core fill grout with increased cohesion while offering excellent resistance to segregation of the fluid grout mix. Masonry cores can be easily and completely filled with no consolidation effort (mechanical vibration), and SPEC MIX SCG produces masonry cores without voids, even around heavily congested reinforcing steel and other obstructions. Using SPEC MIX SCG will ensure high structural integrity of both reinforced and un-reinforced masonry assemblies. Only the addition of water is needed to produce a self-consolidating grout with total quality control and consistency in every batch that is ready to use when it is needed.

MATERIALS USED
PORTLAND CEMENT
POZZOLANIC ADMIXTURES
PERFORMANCE ADMIXTURES
FINE AGGREGATE
COARSE AGGREGATE

HIGHER FLUIDITY LOWER WATER CONTENT
NO SEGREGATION OR SEPARATION
FILLS voidS COMPLETELY
FLOWS AROUND REINFORCEMENT
NO CONSOLIDATION OR RECONSOLIDATION REQUIRED
SIGNIFICANT LABOR SAVINGS
ON TIME WHEN YOU NEED GROUT
SPEC MIX Self Consolidating Grout (SCG) is designed to completely fill cores in masonry units at a higher rate of flow than standard masonry grout. All the constituents of SPEC MIX SCG are dispersed and suspended evenly throughout the masonry core; therefore, no mechanical consolidation or reconsolidation during or after placement at any lift height is required. Anytime structural reinforcement (core fill grout) is necessary, SPEC MIX SCG can be used to create a high quality structurally reinforced masonry assemblage.

**HOW SCG IS PRODUCED**

SPEC MIX SCG is a dry, preblended mix containing cementitious materials, special admixtures and dried aggregates formulated for superior fluidity and cohesion that meets compressive strength requirements of reinforced masonry construction in all types of grout applications. SPEC MIX SCG is manufactured with the finest raw materials available in each geographic region. SPEC MIX SCG is available in both coarse and fine formulations. Each mix produces high quality grout providing excellent compressive and shear bond strength, increased adhesion to masonry unit cores and reinforcement steel resulting in a unified structural masonry system. Packaged completely dry, SPEC MIX SCG eliminates the inconsistencies associated with field-proportioned grouts while offering the contractor the flexibility to mix as little or as much grout as required, when needed. The SPEC MIX manufacturing process first extracts the moisture from the aggregate, since wet aggregate directly affects the quality and consistency of core fill grout. The specified mix design is entered into the computer batching system where each of the ingredients is weighed separately. A digital print out displaying proper proportions of each batch may be kept as a permanent record. Next, the product is completely preblended and packaged in the appropriate size bag. Each SPEC MIX manufacturer certifies that SPEC MIX SCG products are designed to meet ASTM property requirements for core fill grout. SPEC MIX SCG is accepted for all types of masonry construction with submittals available upon request.

**HOW SCG IS USED**

SPEC MIX SCG products are dry, preblended products that are used primarily for grouting masonry cores. Due to the high fluidity of SPEC MIX SCG, cells that are to be filled should be cross-webbed with mortar at the core of the CMU. This will prevent leakage into adjacent cells that do not require core fill grout. Like ordinary grout, SPEC MIX SCG should be installed in accordance with the provisions of the local building code, ICC, MSJC, and The American Concrete Institute's requirements and specifications ACI 530/530.1 Building Code Requirements for Masonry Structures. SPEC MIX SCG may be used in both low-lift and high-lift applications. Special consideration should be used in selecting the type of grout used for a particular application. (See ACI 530-05 table 1.16.1) SPEC MIX SCG may be placed by hand or by mechanical delivery. Always check project specifications and structural notes to ensure proper product selection has been made. SPEC MIX SCG should be discarded after 30 minutes from the time of initial mixing. SPEC MIX products are custom packaged to project specification. Handle and store products according to SPEC MIX recommendations; they must be kept dry, covered and protected from weather and other damage.
Engineering Data

Our Engineers focus on superior product performance through constant research and use of advanced technology to develop innovative materials for better masonry wall systems. Following that protocol, SPEC MIX SCG is specifically engineered to create a highly fluid, cohesive, masonry grout. Unlike standard core fill grout, SPEC MIX SCG is a homogeneous product that eliminates the need for mechanical consolidation or reconsolidation because it evenly disperses and suspends the specialty graded aggregates in the mix. SPEC MIX SCG is formulated with the newest generation of water reducing and viscosity modifying admixtures to achieve the properties reported below. The aggregate gradations have been optimized to meet ACI gradation 1 or 2 and ASTM C404 requirements. The tested data shown below was performed by the National Concrete Masonry Association (NCMA) laboratories.

TYPICAL AGGREGATE GRADATION DATA

AGGREGATE GRADATION PLAYS A CRUCIAL ROLE IN THE GROUT PROPERTIES, ESPECIALLY FLUIDITY AND PUMPABILITY. SPEC MIX SCG MIXES CONTAIN SPECIALY BLENDED AND PROPERLY GRADED AGGREGATES TO ACHIEVE THE DESIRED SCG PROPERTIES MORE EFFICIENTLY. SPEC MIX ENGINEERS HAVE CAREFULLY PROPORTIONED COARSE AND FINE AGGREGATES RESULTING IN OPTIMAL SELF CONSOLIDATING GROUT MIX DESIGNS THAT MAXIMIZE PERFORMANCE. THE RESULTING COMBINED AGGREGATE GRADATIONS OF EACH MIX FALL IN BETWEEN THE MINIMUM AND MAXIMUM SIEVE SIZES ALLOWED UNDER ASTM C404 GRADATION 1 FOR FINE SCG AND ACI 580R GRADATION 2 FOR COARSE SCG.

![Graph showing gradation for ASTM C404 Gradation 1 and ACI 580R Gradation 2](image)

TYPICAL PRODUCT TEST DATA

<table>
<thead>
<tr>
<th>PROPERTIES</th>
<th>COARSE SCG</th>
<th>FINE SCG</th>
</tr>
</thead>
<tbody>
<tr>
<td>COMpressive STRENGTH (ASTM C 1019), 28-DAY*</td>
<td>3000 TO 5000 PSI</td>
<td>3000 TO 5000 PSI</td>
</tr>
<tr>
<td>SLUMP FLOW (ASTM C 1011), INCHES</td>
<td>2&quot; TO 30&quot;</td>
<td>2&quot; TO 30&quot;</td>
</tr>
<tr>
<td>T-20</td>
<td>2 TO 5 SECONDS</td>
<td>2 TO 5 SECONDS</td>
</tr>
<tr>
<td>VISUAL STABILITY INDEX (VSI)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

GROUT SELECTION & LIFT HEIGHT REQUIREMENTS

<table>
<thead>
<tr>
<th>GROUT TYPE*</th>
<th>MINIMUM WIDTH OF GROUT SPACE, 1/2 IN. (MM)</th>
<th>MAXIMUM GROUT POUR HEIGHT FT (M)</th>
<th>MINIMUM GROUT SPACE DIMENSIONS FOR GROUTING CELLS OF HOLLOW UNITS, 1/4 IN. X 1/4 IN. (MM X MM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FINE</td>
<td>1/8 (19.1)</td>
<td>1 (30.5)</td>
<td>1 1/2 X 2 (38.3 X 50.8)</td>
</tr>
<tr>
<td>FINE</td>
<td>2 (50.8)</td>
<td>5 (152)</td>
<td>2 X 3 (60.9 X 76.2)</td>
</tr>
<tr>
<td>FINE</td>
<td>2 1/2 (63.5)</td>
<td>12 (3.66)</td>
<td>2 1/2 X 3 (63.5 X 76.2)</td>
</tr>
<tr>
<td>FINE</td>
<td>3 (76.2)</td>
<td>24 (7.32)</td>
<td>3 X 3 (76.2 X 76.2)</td>
</tr>
<tr>
<td>COARSE</td>
<td>1 1/2 (38.1)</td>
<td>1 (30.5)</td>
<td>1 1/2 X 2 (38.1 X 50.8)</td>
</tr>
<tr>
<td>COARSE</td>
<td>2 (50.8)</td>
<td>5 (152)</td>
<td>2 X 3 (60.9 X 76.2)</td>
</tr>
<tr>
<td>COARSE</td>
<td>2 1/2 (63.5)</td>
<td>12 (3.66)</td>
<td>2 1/2 X 3 (63.5 X 76.2)</td>
</tr>
<tr>
<td>COARSE</td>
<td>3 (76.2)</td>
<td>24 (7.32)</td>
<td>3 X 3 (76.2 X 76.2)</td>
</tr>
</tbody>
</table>

* FINE AND COARSE GROUTS ARE DEFINED IN ASTM C 476.

** FOR GROUTING BETWEEN MASONRY PRODUCTS.

† GROUT SPACE DIMENSIONS IS THE CLEAR DISTANCE BETWEEN ANY MASONRY PROTRUSION AND SHALL BE INCREASED BY THE ELASTICITY OF THE MASONRY BEND WITHIN THE CROSS SECTION OF THE GROUT SPACE.

†† AREA OF VERTICAL REINFORCEMENT SHALL NOT EXCEED 1/4% OF AREA OF THE GROUT SPACE.

SCG Use Guidelines

GROUT LIFT HEIGHT REQUIREMENTS

WHERE THE FOLLOWING CONDITIONS ARE MET, PLACE GROUT IN LIFTS NOT EXCEEDING 12.67 FT:

1. CLEAN OUTS ARE REQUIRED FOR LIFTS EXCEEDING 5 FEET.
2. THE MASONRY HAS CURED FOR AT LEAST 4 HOURS.
3. THE SPEC MIX SCG GROUT SLUMP FLOW IS MAINTAINED BETWEEN 22 AND 30 IN.
4. NO INTERMEDIATE REIN FORCED BOND SLABS ARE PLACED BETWEEN THE TOP AND BOTTOM OF THE FOUR HEIGHT.
5. SPEC MIX SCG CAN BE POURED IN ALL LIFTS NOT EXCEEDING 12.67 FT.

MSJC SPECIFICATION FOR MASONRY CONSTRUCTION SECTION 3.5 E CONSOLIDATION

CONVENTIONAL GROUTS NEED TO BE CONSOLIDATED AT THE TIME OF PLACEMENT ACCORDING TO THE FOLLOWING:

1. CONSOLIDATE GROUT POURS 12 IN, OR LESS IN HEIGHT BY MECHANICAL VIBRATION OR BY PUDDLING.
2. CONSOLIDATE POURS EXCEEDING 12 IN, IN HEIGHT BY MECHANICAL VIBRATION, AND RECONSOLIDATE BY MECHANICAL VIBRATION AFTER INITIAL WATER LOSS AND SETTLEMENT HAS OCCURRED.

SCG MIXES NEED NOT BE CONSOLIDATED NOR RECONSOLIDATED. SEE TABLE AT LEFT FOR GROUT LIFT MAXIMUMS.

![Diagram showing low and high lifts](image)
Field Testing and Handling

Sampling and testing SPEC MIX SCG in accordance with applicable ASTM standards should be performed to ensure that the proper consistency is achieved. Slump flow, T-20, and the VSI of the SPEC MIX SCG should be checked first following the instructions indicated below. Casting prisms from the sample should be conducted according to the instructions in the "Casting SCG Prisms" section below. Procedures for curing and testing the specimens for compressive strength should follow modified ASTM C1019 specifications as outlined below under "Casting Spec Mix SCG Prisms." On the job site, SPEC MIX SCG should be discarded after 30 minutes from initial mixing to ensure product quality and performance. SPEC MIX SCG must be kept dry, covered, and protected from weather and other damage at all times. Visit www.specmix.com for further information and a video demonstration of testing procedures.

FIELD TESTING FOR SLUMP FLOW, T-20 & VISUAL STABILITY INDEX (VSI):

Testing the plastic properties of SPEC MIX SGC requires the following tools:
1. SLUMP CONE
2. SCG SLUMP-FLOW TARGET
3. TAPE MEASURE
4. STOP WATCH OR TIMER (IN SECONDS)

There are three tests conducted in the field to measure the plastic properties of SPEC MIX SCG: Slump Flow, T-20 and Visual Stability Index (VSI).

SLUMP FLOW is the measurement of the fluidity of the grout mix. The slump flow is measured in accordance with ASTM C1611. It is tested using an inverted slump cone filled with SPEC MIX SCG and then released on a level, surface containing the SPEC MIX Slump Flow Target. The spread (diameter) of the slump flow is measured once it stops moving. SPEC MIX SCG mixes are specially formulated to produce a cohesive material with a flow of between 22 and 30 inches with no segregation. If the slump flow is not in the 22 – 30 inch range, it is likely that the water or dry SPEC MIX SCG material needs to be adjusted to either increase or reduce fluidity.

T-20 is the next test which is performed during the slump flow procedure. T-20 is the time, in seconds, in which the slump flow reaches a diameter of 20 inches. The T-20 measurement is an indicator of the relative viscosity of the SPEC MIX SCG. T-20 values should be between 2 and 5 seconds. If the T-20 is not in the 2 – 5 seconds range, it is likely that the water or dry SPEC MIX SCG material needs to be adjusted to either increase or reduce fluidity.

VISUAL STABILITY INDEX (VSI) is an indication of the stability and/or resistance to segregation of the fluid SCG mixture or material. The VSI of fresh SPEC MIX SCG is visually estimated by observing the SPEC MIX SCG for signs of segregation and bleeding. VSI observations can be made during the slump flow test and are recorded as a value between 0 and 3. Segregation can be identified as a halo of paste along the perimeter of the SPEC MIX SCG slump flow sample. Bleed water can be identified by water pooling at the surface or edges of the SCG sample. Correctly mixed SPEC MIX SCG shows a VSI of 0. If the VSI is above 1, it is likely that the water or dry SPEC MIX SCG material content needs to be adjusted to improve stability.

<table>
<thead>
<tr>
<th>VSI - 0</th>
<th>VSI - 1</th>
<th>VSI - 2</th>
<th>VSI - 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>NO BLEED WATER, NO MATERIAL SEGREGATION</td>
<td>SLIGHT BLEED WATER, NO MATERIAL SEGREGATION</td>
<td>BLEED WATER PRESENT, SLIGHT MATERIAL SEGREGATION</td>
<td>SIGNIFICANT BLEED WATER PRESENT, MATERIAL SEGREGATION</td>
</tr>
</tbody>
</table>

CASTING SPEC MIX SCG PRISMS

In comparison to casting normal grout prisms, note the following:
1. PRIOR TO CASTING THE GROUT PRISMS, THE SLUMP FLOW, T-20 AND VSI TESTS MUST BE COMPLETED.
2. POUR SPEC MIX SCG INTO THE MOLD IN ONE LIFT, NOT MULTIPLE LIFTS.
3. SPEC MIX SCG SHOULD NOT BE ROODED IN THE Grout MOLD.

PHOTOS 1-4 SHOW THE SLUMP FLOW TEST BEING PERFORMED PER ASTM C1611 FOLLOWED BY PHOTO 5 WHERE SCG PRISMS ARE MADE PER ASTM C1019 MODIFIED.

- FILLING AN INVERTED SLUMP CONE WITH SPEC MIX SCG IN ONE LIFT AND RAISING 6'-12'.
- MEASURING THE TIME IT TAKES FOR THE SCG TO REACH 20 (T-20).
- MEASURING THE DIAMETER OF THE SCG.
- RECORDING THE FINAL SLUMP FLOW MEASUREMENT AND CHECKING THE VSI.
- PREPARING THE SCG CMU MOLDS PER ASTM C1019. NOTE THAT MOLDS ARE BEING FILLED IN A SINGLE LIFT.
DO NOT ROOD SPECIMENS.
SPEC MIX

SELF CONSOLIDATING GROUT

IS MIXED ON SITE, WHERE AND WHEN IT IS NEEDED. SITE MIXING AND PLACING SPEC MIX SCG CAPTURES THE ADDITIONAL BENEFIT OF "FLUIDITY RETENTION" — THE SPEC MIX SCG RETAINS ITS HIGH FLOW AND STABILITY CHARACTERISTICS BECAUSE IT IS FRESHLY PLACED IMMEDIATELY AFTER COMPLETION OF MIXING. MIXING SPEC MIX SCG ON SITE WITH THE SPEC MIX SILO SYSTEM ELIMINATES LENGTHY TRANSPORTATION ROUTES AND DELAYS THAT ADVERSELY AFFECT THE PROPERTIES OF ANY SELF CONSOLIDATING MIX. ON SITE USE OF SPEC MIX SCG IN A DRY, PREBLENDED STATE WITH THE WIDE ARRAY OF SPEC MIX SILO DELIVERY SYSTEMS ENSURES THAT EACH AND EVERY GROUT PROJECT MEETS AND EXCEEDS ENGINEERING SPECIFICATIONS AND CONTRACTOR NEEDS.
MIXING INSTRUCTIONS
Mixing SPEC MIX SCG from our silo system and bulk bags as well as 80 or 94 pound bags is slightly different compared to standard masonry grout. Since SCG is completely dry, preblended with aggregates and admixtures, the following steps are required:

- A mechanical batch mixer is strongly recommended. Only hand-mix upon the written approval of the project specifier or engineer.
- Always use clean, potable water.
- Start by adding 80 percent of the estimated water content required. The optimal amount of mixing water necessary is predetermined by SPEC MIX's engineers and is available from your local SPEC MIX representative.
- Mix SCG for at least 2 minutes once all the ingredients are added. Note: due to unique chemistry of the specialized admixtures in SCG, these materials need approximately two minutes to activate.
- After two minutes of initial mixing and the mix appears fluid and consistent, temper the SCG with water as needed to achieve optimal fluidity without segregation. Total mix times are between 3 to 5 minutes and should be consistent from batch to batch. Water/SCG ratios should also be consistent.

Although a visual test of the cementitious paste and aggregates will indicate when a homogenous mix is achieved, it is imperative to perform a slump-flow test and a visual stability index (VSI) assessment to ensure the mix is ready for installation. See the Field Testing and Handling section on the previous page which lists the equipment required and procedures to conduct a proper slump-flow test.

Visit www.specmix.com for additional information as well as a video demonstration of mixing procedures.

SIZES AND EQUIPMENT
SPEC MIX SCG is custom packaged to meet Project specifications. SPEC MIX SCG mixes are available in 80 pound and 94 pound (36 kg or 42.6 kg) packages for easy hand loading or 3,000 pound (1362 kg) reusable bulk bags for use with the various patented SPEC MIX silo systems. Once the bulk bags of SPEC MIX SCG mix are delivered to the project site, the portable silo is loaded with a job-site forklift and the product is dispensed into the mixer as needed. Just add water, mix 3 – 5 minutes and the SPEC MIX SCG is ready for installation. As much or as little material can be mixed to suit project needs.

WARRANTY
Seller warrants that its Product will conform to and perform in accordance with the product specfications. The foregoing warranty is in lieu of all other warranties, express 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 for bodily injury, Seller's liability to the Buyer or any third party, arising out of the purchase of the Product from the Seller by Buyer shall not exceed the total amount billed and billable to the Buyer for the product hereunder.

LIMITATIONS
SPEC MIX SCG should be installed in accordance with the provisions of the local building codes and applicable ASTM standards. Good construction practices ensure durable, functional, watertight construction.

AVAILABILITY
SPEC MIX SCG, as well as the patented SPEC MIX silo delivery system, is available through a network of over 47 nationally licensed manufacturers with local distribution to every major market. Contact SPEC MIX, Inc at 888.773.2649 for more information or visit www.specmix.com to locate your local manufacturer.

PRECAUTIONS
For best results, use a batch type mixer for 3 – 5 minutes. Maintain uniform water/cement ratios and mix times. Hand mixing of the grout should be permitted only with the written approval of the specifier who should outline hand-mixing procedures. Grout should be cured for a minimum of 28 days. The preblended product must be kept dry, covered and protected from weather and other damage. Safety glasses and a dust mask are recommended when handling any grout mixture containing silica. The cementitious materials mixed onsite are alkaline in nature and, on contact with water, are irritating to eyes and skin. In case of eye contact, flood eyes repeatedly with clean water and see a physician immediately. Do not rub eyes. Wash hands thoroughly after handling or before eating. Do not take internally. Keep out of reach of children. MSDS sheets are available from your local representative or call 1.888.773.2649 or 1.908.SPEC MIX.