

LENTON INTERLOK HY15LM

Nonmetallic, High-Strength Grout

Read and Understand These Instructions Fully Before Doing Any Work with HY15LM Grout

Refer to the LENTON Instruction Manual titled: LENTON INTERLOK Reinforcing Bar Splicing System or contact Pentair. Observe all warnings and cautions noted. Additional copies of instructions and application information are available at www.erico.pentair.com.

Materials and Equipment Needed for Proper Use and Installation:
To permit rapid and continuous work with HY15LM grout, it is recommended that all necessary tools and materials be as near to the work area as possible.

Required:
Power mixer (electric) 500 RPM min. Mixing bucket
Paddle / propeller mixing blade 4 & 100 oz (0.1 & 3 L) measuring containers
Trowel Pentair slump flow template
Additional (optional):
Commercial grout pump Plastic plugs for grout access holes

Preparation for Grout:
Before working with HY15LM grout, remove all debris, oil, dirt, and moisture from the areas and sleeves to be filled with grout. Make sure all panels and forms are securely anchored to prevent movement during pouring and curing.

To help ensure a quality structural connection, it is important to provide a routine quality control process during the mixing and installation of the grout. Refer to the LENTON INTERLOK product instruction manual or contact Pentair. Observe all warnings and cautions noted.

Grout Temperatures:
The standard working temperature range for the installation of the LENTON INTERLOK sleeve, reinforcing bar, and HY15LM is 32°F to 100°F (0°C to 38°C). However, it can be used in an extended temperature range of 20°F – 122°F (-7°C – 50°C) with special considerations and LENTON additives.

When grouting below 40°F (4°C), LENTON recommends following ACI Cold Weather instructions. This involves heating the panels after grouting to 50°F (10°C) to allow the grout to cure and gain strength.

Standard Mixing Instructions, 32°F to 100°F (0°C to 38°C):

1. Measure out 91.3 oz (2.7 L) of potable water for one 50 lb (22.7 kg) bag of dry grout (this is equivalent to 12% water by weight). Do not use less than 11% (84.5 oz or 2.5 L) or more than 13% (99.8 oz or 2.95 L) water by weight with one bag of HY15LM. When grouting below 40°F (4°C), water must be at least at 70°F (21°C).
2. Place the correct water amount in the mixing bucket.
3. With the mixer energized and spinning, carefully add HY15LM grout to the water in the bucket (avoid splashing) until the full 50 lb bag (22.7 kg) is empty.
4. After mixing for approximately one minute, stop the mixer and scrape dry grout from the sides and bottom of the bucket, repeat as needed.
5. Continue mixing until a homogeneous mix is obtained (total time of approximately 3 minutes).
6. Determine pumpability by performing the slump flow test as described later in these instructions. Properly mixed HY15LM will have a spread of 7" (178 mm) to 12" (305 mm) which will allow approximately 40 minutes of pumping at 100°F (38°C) and 50 minutes at 70°F (21°C). To obtain special LENTON additives for additional working time, contact LENTON customer service.
7. Once the mix is homogeneous with the proper flow, it is ready for filling the LENTON INTERLOK sleeves by pump or gravity fill.
8. For sustaining the flowability of the grout while filling the sleeves, mix the remaining grout in the bucket by running the mixer for 20 seconds every five to seven minutes.

NOTE: For use of the LENTON INTERLOK HY15LM Grout in extreme temperatures down to 20°F (-7°C) and up to 122°F (50°C), contact LENTON engineering.

!!MIXING CAUTION!!
If any of the conditions listed below occur while using the HY15LM grout, the batch must be discarded and a fresh batch must be made.

1. Under no conditions should HY15LM grout be retempered by adding additional water once initial set (stiffen) has started.
2. Do not add cement, sand, additives or admixtures to the HY15LM grout other than the LENTON grout additives for extreme temperatures.
3. No hand mixing is permitted. A proper sized power mixer must be used to mix the HY15LM grout.

Contact LENTON for a list of recommended power mixers and accessories.

Measuring Slump Flow with the Pentair Template Kit (LK430):
One Pentair Slump Flow Template kit is provided with each initial order of HY15LM grout. If additional kits are required, they can be purchased from Pentair. The Pentair Slump Flow Template is a modified slump test used to determine the fluidity of HY15LM grout. The slump flow test consists of a 2" (51 mm) diameter by 4" (102 mm) tall cylinder and a calibrated template. This test is to be completed within 2 minutes after completion of a batch mix and without interruption. The intent of this test is to determine the pumpability of the grout.

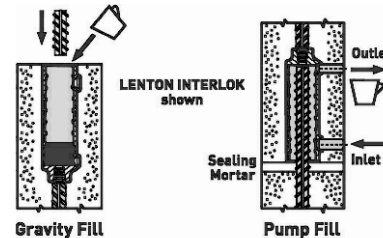
- To use the Pentair Slump Flow Template Kit:
Both the template and cylinder should be clean and dry prior to use.
1. Place the template on a flat level surface with the 4" (102 mm) long cylinder standing upright in the center of the circle.
 2. Fill the cylinder to the top with HY15LM grout. Slowly raise the cylinder vertically, allowing the grout to flow on to the center of the template.
 3. To determine the slump flow of the grout, note the flow diameter (spread) over the template. Read and/or measure the spread at several places, preferably 90° from each other. Average the readings to determine actual fluidity of grout.

It is recommended that a slump flow test be performed on every bag until one becomes familiar with the proper consistency of the HY15LM grout. Typical HY15LM flow will be between 7"-12" (180-305mm).

General Filling of LENTON INTERLOK Sleeve:
Grout placement should be continuous until the complete batch of grout is used. No sleeves should be left partially filled for an extended period of time. Enough grout should be on hand to ensure each sleeve is filled completely. Installation of HY15LM grout can take place in two ways:

Gravity Fill:
Pour HY15LM grout evenly into a vertical LENTON INTERLOK sleeve as shown. Refer to the product instruction manual for proper quantity of grout.

Pump Fill:
Ensure that the inlet and outlet ports are clear and free of obstructions. Place the nozzle of the grout pump into the inlet tube (lower) of the sleeve. Pressurize the grout until an even and free flow of grout is observed from the outlet tube (upper). Once the grout flow is free of air, place a plug in the outlet tube. Remove the pump nozzle carefully while slowly pumping to avoid leaving air pockets in the inlet tube. Upon removal of the pump nozzle, immediately plug the inlet tube to avoid grout loss from sleeve. Always pump from the bottom of the sleeve and vent from the top to avoid air entrapment within the LENTON INTERLOK sleeve.



!!BRACING CAUTION!!

The decision to remove bracing following grouting must be determined by the Structural Engineer of record. In order to ensure a quality structural connection, it is important that the grouted couplers in a precast panel or member be secured and undisturbed by movement, shock, or vibration until the HY15LM grout has reached a compressive strength of at least 3,000 psi (20.7 MPa). Typically this will occur after 8 hours at 68°F (20°C). However, this time will vary depending on the temperature and job site conditions. In cold weather, the curing time will be significantly lengthened. Therefore, the bracing time may need to be increased. It is strongly recommended that the compressive strength of the HY15LM grout be checked under job site curing conditions according to the relevant procedures outlined in ASTM C109 before proceeding with upper story erection.

Shelf Life and Storage:
HY15LM grout has a shelf life of 12 months from the date of manufacture as noted on each bag. The grout is to be stored in a cool, dry indoor environment to ensure shelf life and physical properties. Product that is damaged, exposed to wet conditions, or with a manufacturing date exceeding 12 months should be discarded. The manufacturing date can be referenced on each bag of HY15LM grout.

- WARNING:**
1. Pentair products shall be installed and used only as indicated in Pentair product instruction sheets and training materials. Instruction sheets are available at www.erico.pentair.com and from your Pentair customer service representative.
 2. Pentair products must never be used for a purpose other than the purpose for which they were designed or in a manner that exceeds specified load ratings.
 3. All instructions must be completely followed to ensure proper and safe installation and performance.
 4. Improper installation, misuse, misapplication or other failure to completely follow Pentair's instructions and warnings may cause product malfunction, property damage, serious bodily injury and/or death, and void your warranty.

- The customer is responsible for:
- a. Conformance to all governing codes.
 - b. The integrity of structures to which the products are attached, including their capability of safely accepting the loads imposed, as evaluated by a qualified engineer.
 - c. Using appropriate industry standard hardware as noted above.

SAFETY INSTRUCTIONS:
All governing codes and regulations and those required by the job site must be observed. Always use appropriate safety equipment such as eye protection, hard hat, and gloves as appropriate to the application.

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