



GROUT POUR & LIFT LIMITS

International Masonry Institute

The James Brice House
42 East Street
Annapolis, MD 21401
phone 410.280.1305
fax 301.261.2855
toll free 800.803.0295
www.imiweb.org

Masonry Hotline

800.IMI.0988 (800.464.0988)
masonryquestions@imiweb.org

Training Hotline

800.JOBS.IMI (800.562.7464)
training@imiweb.org

Following these tips on grouting and reinforcement to enhance the structural capabilities of masonry allows for taller, thinner walls, even in high wind and seismic zones. Achieving these structural goals takes careful detailing and proper construction practices in the field, but it also makes reinforced masonry more affordable than ever.

Note: This guide applies to traditional grout (not SCG) and only to grouting for CMU and Brick units.

The MSJC Masonry Code and Specifications, Building Code Requirements and Specification for Masonry Structures and Commentaries (TMS 402/ACI 530/ASCE 5, TMS 602/ACI 530.1/ASCE 6), spells out these practices, including requirements for grout lifts and grout pours. A grout lift is the amount of grout placed in a single continuous operation. A grout pour is the entire height of masonry to be grouted before more courses of masonry are constructed. A grout pour can consist of one or more lifts placed in succession.

Grout Pour Heights

Grout pour height is limited by the MSJC Code and Specification and is a function of the type of grout used (fine or coarse) and the grout space dimensions. Once the maximum pour height is established using the MSJC table, a decision to use cleanouts will help determine the maximum pour height.

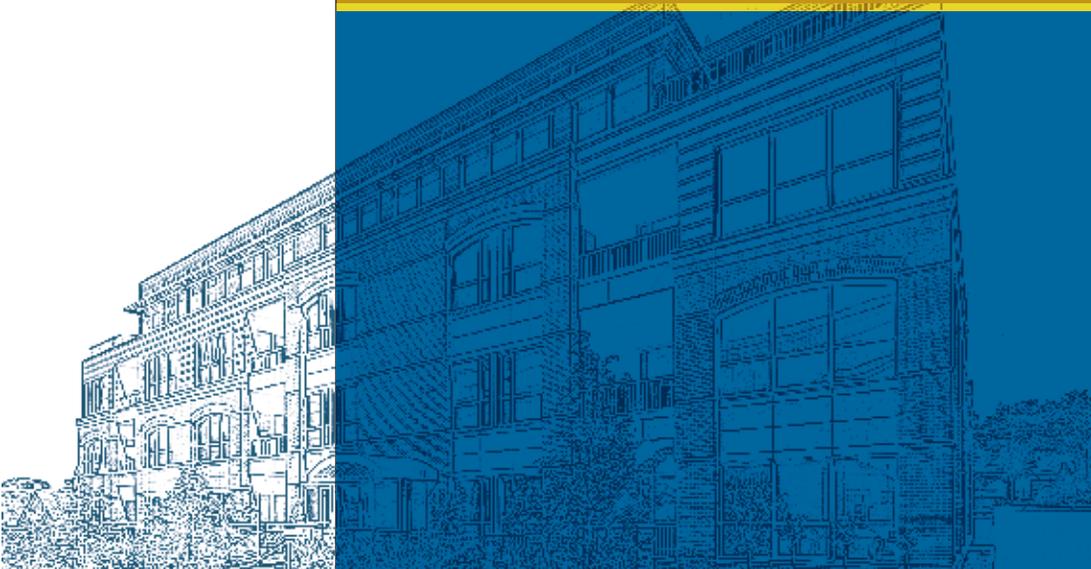
Cleanouts are required in the bottom course for each pour height greater than five feet. For low-lift grouting (a widely used industry term which is not found in the code), masonry pour height is limited to a maximum of five feet before grout is placed and cleanouts are not required.

When cleanouts are provided, the masonry pour can be built to story height or full-wall height (up to 24 feet under certain conditions) before grout is placed in lifts. The typical industry term for this is high-lift grouting.

Notice that while the industry terms are *low-lift* and *high-lift* grouting, they actually relate to the *pour* height. To help alleviate the confusion between lifts and pours, the MSJC does not use either term, and instead focuses on cleanouts in the pour.

Grout Lift Heights

Under the following conditions, MSJC provisions permit grout to be placed in lifts not exceeding 12.67 feet. Conditions that must be met are:



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- The masonry has cured for at least four hours
- The grout has a slump of 10 to 11 inches
- There are no intermediate horizontal reinforced bond beams between the top and bottom of the pour height

If these conditions are met but intermediate bond beams are present within the pour, then the lift is limited to the bottom of the bond beam, but cannot exceed 12.67 feet.

Regardless of other conditions, if the masonry has not cured for at least four hours before grouting or if the grout has a slump less than 10 inches, grout lifts cannot exceed five feet.

Demonstration Panel Option

The MSJC Code and Specifications allows for other grout placement techniques, including lifts higher than 12.67 feet, with construction of panels that successfully demonstrate the proposed alternative.