



CONTRACTOR'S ALERT – 2020.2

GROUT MIX DESIGN AND PLACEMENT TIME



GROUT MIX DESIGN

Ready-mix concrete suppliers also provide transit-mixed grout. Unfortunately, grout is a small portion of business for these companies, so when they generate grout mix designs based on a strength requirement; it is often based on a concrete mix which limits the amount of water in the mix. Their computers substitute water reducing admixtures, which can work against a good grout mix design.

Water is a friend of masonry grout. Water allows easy flow into restricted cells or cavities, and excess water is rapidly absorbed by the masonry units (integral water repellent units may act differently). A 'normal' grout mix will have a Water/Cement ratio between 0.65 and 0.80. There are two code references that stipulate a high grout slump.

Specification for Masonry Structures (TMS 602-16)

2.6 B.2 *Unless otherwise required, mix grout other than self-consolidating grout to a consistency that has a slump between 8 and 11 in. (203 and 279 mm).*

Standard Specification for Grout for Masonry (ASTM C476-19)

4.2.1.2 Specified Compressive Strength... *The grout shall be mixed to a slump of 8 to 11 in. (200 to 280 mm) as determined by Test Method C143/C143M and shall have a minimum compressive strength of 2000 psi (14 MPa) at 28 days.*

Tip: Carefully review grout mix designs for adequate water content and slump that can be adjusted to a range of 8 and 11 inches at the jobsite. Never accept traditional grout mixes containing water reducing or plasticizing admixtures unless specific approval has been granted by the enforcement agency.

Tip: Do not accept grout mix designs based on concrete references.

PLACEMENT TIME

The perception is that grout must be placed within 1½ hours after the introduction of water, which is not exactly what the code states when using transit-mixed grout. The code states:

3.5 A *Placing time—Place grout within 1½ hr from introducing water in the mixture and prior to initial set.*

But there are two more significant provisions in Article 3.5 A:

3.5 A.2. *For ready-mix grout:*

a. Addition of water is permitted at the time of discharge to adjust slump.

b. Discard ready-mixed grout that does not meet the specified slump without adding water, other than the water that was added at the time of discharge.

The time limitation is waived as long as the ready-mixed grout meets the specified slump.

Note the last sentence in Article 3.5 A.2.b extending the placement time when appropriate.

Tip: If needed, add water to achieve maximum permissible slump before placing grout. This needs to be coordinated with the mix design allowances and will maximize the unloading time. Read project specifications carefully for more restrictive provisions and take exception, if necessary, prior to grouting operations.

Industry Representatives

	<p>John Chrysler Masonry Institute of America (310) 257-9000 jc@masonryinstitute.org</p>		<p>Kurt Siggard Concrete Masonry Association of CA & NV (916) 722-1700 kurt@cmacn.org</p>		<p>Rod Haraga Masonry Institute of Hawaii (808) 782-8661 rharaga.mih@gmail.com</p>
---	---	---	---	---	---