Technical Bulletin
Concrete Slumps

The Concrete Floor Contractors Association of Ontario was founded in 1971 to represent the concrete finishing industry.

Technical Bulletins are designed to provide state of the art information to owners, specifiers and contractors to both improve quality and reduce problems.

We hope that this information will assist you in this goal.

If you have any questions, or comments, please feel free to contact us at 905-582-9825 or by e-mail at info@concretefloors.ca

The Best Floors Start With Our Finish !

Concrete Floor Contractors Association

Background

The relative workability of concrete is normally defined by its "slump" when compared to a fixed height cone as per CSA A23.2 test method 5C. Concrete slump is commonly adjusted by increasing or reducing the unit water content of the concrete mix. The slump may also be increased through the addition of a plasticizing admixture.

Concerns:

Concrete slumps are a source of argument on most projects. In order for concrete to be placed, consolidated and screeded to a defined elevation efficiently, the slump of the concrete cannot be either too dry or too wet. Too low a slump creates significant handling, consolidation and screeding problems. Too wet a slump can cause mix segregation and an reduction in the ability to maintain a desired floor elevation.

Concrete standards typically call for the measurement of the concrete slump at the discharge point off the concrete truck chute rather than at the point of placement. In particular, concrete needs to be designed to retain its workability through pumping to the point of placement.

CSA A23.1 permits the modification of concrete slumps through controlled on-site water addition to defined limits. Uncontrolled and excessive water addition causes a reduction in all concrete properties and an increase in drying shrinkage.

Recommendations:

Specified slumps for pumping applications should be "at the point of concrete placement".

Initial slumps for all floors should have a "water" slump of 60 +/- 20 mm and a final "plasticized" slump of 125mm +/- 30 mm.

The purchaser of the concrete is responsible to ensure that the above slumps are provided and maintained during concrete placement (see Position Statement on Concrete Purchasing).

Further References:

- CSA A23.1 Concrete materials and Methods of Concrete Construction
- ACI 302 Guide for Concrete Floor and Slab Construction