

Clarification on Minimum Cement Content when using Xypex Admix

In response to claims for the need to have a minimum cement content in concrete mixes when using Xypex Admix, we are pleased to be able to provide the following.

There is no reference to cement contents or mix design requirements in the Xypex Specification and/or the Xypex Product Data Sheets. There is a specified dosage rate for Xypex Admix C-1000NF (no fines grade) of 0.8% - 1.0% by weight of total cementitious of the concrete mix design. The Xypex Specification references applicable standards for the jurisdictions in which the material is to be used. The specifying engineer shall be aware of the requirements of that standard. Typically the requirements for Exposure Classification and Design for Durability will determine design of concrete strength and concrete cover over reinforcement, as well as design and placement of reinforcement steel to achieve the level of crack control for the service conditions/location of the project.

Permeability testing conducted on Xypex treated samples, using test apparatus modelled after test apparatus described in the Corps. of Engineers Test No. CRD-C 48-73 determined that concrete samples with strength as low as 2000 psi (13.8 MPa) have been able to resist a 405 foot (123.4 metre) pressure head – the maximum working capacity of the apparatus. The Xypex Chemical treatment sealed the concrete and eliminated all measurable leakage of water. It was decided to use 2000 psi concrete due to its expected higher permeability and therefore expedited test results.

In regard to dosage rates for Xypex Admix, Section 2.02 B. of the Xypex Specification states “under normal conditions the crystalline waterproofing powder (“No Fines” grade) shall be added to the concrete mix at the rate of 0.8% - 1.0% by weight of total cementitious material. For enhanced chemical protection or meeting specific project requirements, consult with the manufacturer or its authorised representative to determine appropriate dosage rates”. In some instances the dose rate can be increased to 1.2% by weight of total cementitious to achieve increased durability of the concrete elements, particularly when exposed to aggressive environmental conditions.