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Guide to Troubleshooting Concrete Mixture Issues as Influenced by Constitutive Materials, Jobsite Conditions, or Testing Practices

Reported by ACI Committee 211

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This guide describes adjustments that can be made to existing proportions for normal-density concrete with and without chemical admixtures, pozzolans, and slag. These adjustments are based on the performance of the concrete mixture as used in construction. The adjustments consider evaluation for placeability, consistency, strength, and durability. The procedures used in making these adjustments can be found in ACI 211.1. Adjustments to concrete mixture proportions or sources may require resubmittal to the design professional as detailed in ACI 301. This guide also provides information regarding jobsite conditions and testing practices that should be evaluated before adjustments are made to the mixture.

Keywords: admixtures; aggregates; cementitious materials; durability; fine aggregates; fly ash; metakaolin; mixture proportioning; pozzolans; quality; silica fume; slag; slag cement; slump tests; water-cementitious material ratio.

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