

## **Chemical and Physical Properties of Some Types of Cement Available in Local Market**

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There is no doubt that the type and properties of cement extremely affect the general properties of produced concrete. Cement is one of the main ingredients of cement past phase in concrete. In present study chemical and physical properties of four types of Portland cement available in Iraqi local market were studied ,these types as follow : two types of ordinary Portland cement Kubaisa (Iraqi cement) and Ismnta (Jordanian cement) and the others of sulfate resisting cement Torab alsabia (Lebanese cement ) and Al-qaim (Iraqi cement). Chemical analysis of the four types of cement were conducted in Baghdad central laboratory in National Center for Constructional Laboratories and Researches (NCCLR) and Al-qaim factory laboratory .The physical tests were conducted in the concrete laboratory of Al\_anbar university-college of engineering including standard cement paste ,initial and final setting and compressive strength of cement mortars. The results indicate that the local cement (Kubaisa and Al-qaim) showed better performance than imported cement (Ismnta and Torab alsabia) in most tested chemical and physical properties. Kubaisa cement showed 34.1 % , 35.5 % higher compressive strength compared with Ismnta cement at 3 and 7 day respectively and lower loss on ignition and insoluble residue . The major compounds of Kubaisa cement were nearest to those in typical cement. For sulfate resisting cement, Al-qaim cement showed 13.3 % higher compressive strength at 7 day and lower percentage of C3A (1.95%). Torab alsabia cement exceeded the limits of Iraqi standard I.O.S No.5 1984.