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The Effect of Pozzolanic Addition on Expansive Portland Cement

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Abstract : Laboratory experiments were conducted to investigate the effects of local natural pozzolan in Nador (North of Morocco) on certain expansive cements containing a great content of f-CaO. The expansion was caused by high rate of free lime in cements. The reaction of natural pozzolan with f-CaO already existing in cement or liberated during the hydration process modifies some properties of these blended cements. In this study a portion of expansive cements was replaced by natural pozzolan, with three different dosages (15%, 25% and 35%). The results obtained of natural pozzolan on expansive cements exhibited much less expansion, and great reduction of heat of hydration. Moreover, we obtain satisfactory compressive strength values.

Keywords : natural pozzolan, expansive cements, free lime, blended cements.

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