

TABLE I

CHEMICAL COMPOSITION OF A LOCAL CEMENT

CEMENT - Type I JACAPRATHAN A.S.T.M. Designation C 150-75

1. Chemical Composition	Percent
Silicon Dioxide (SiO ₂).....	21.52
Aluminium Oxide (Al ₂ O ₃).....	4.95
Ferric Oxide (Fe ₂ O ₃).....	3.57
Calcium Oxide (CaO).....	64.43
Magnesium Oxide (MgO).....	1.81
Sulfur Trioxide (SO ₃).....	2.36
Free Lime (CaO).....	0.72
Loss on Ignition.....	0.67
Insoluble Residue.....	0.15
Total Alkalies.....	0.64
Tricalcium Silicate (C ₃ S).....	53.11
Tricalcium Aluminate (C ₃ A).....	7.08
Dicalcium Silicate (C ₂ S).....	21.72
Tetra Calcium aluminoferrite (C ₄ AF).....	10.84
2. Specific Surface	
(Blaine) Sq. Cm. per Gram:.....	2984

TABLE II

CHEMICAL CONTAMINENTS PRESENT IN AGGREGATES AND WATER

<u>Total Acid Soluble Sulphates (as SO₃)</u>	
	<u>% by weight</u>
Coarse aggregate	0.02 - 2.65
Fine aggregate	0.05 - 3.51
Water	up to - 0.04
<u>Total Acid Soluble Chlorides (as NaCl)</u>	
Coarse aggregate	0.04 - 0.54
Fine aggregate	0.04 - 1.60
Water	up to - 0.16

These figures are dependent on the location, quarry and the depth of the deposit. The concentrations are found to increase as the aggregate size decreases.

Note: Suggested maximum salt contents for concretes in the Middle East is 4.0% and 0.5% by weight of cement for sulphates and chlorides respectively.

GRADATION CURVES FOR EAST COAST SAUDI ARABIAN
COARSE AND FINE AGGREGATES

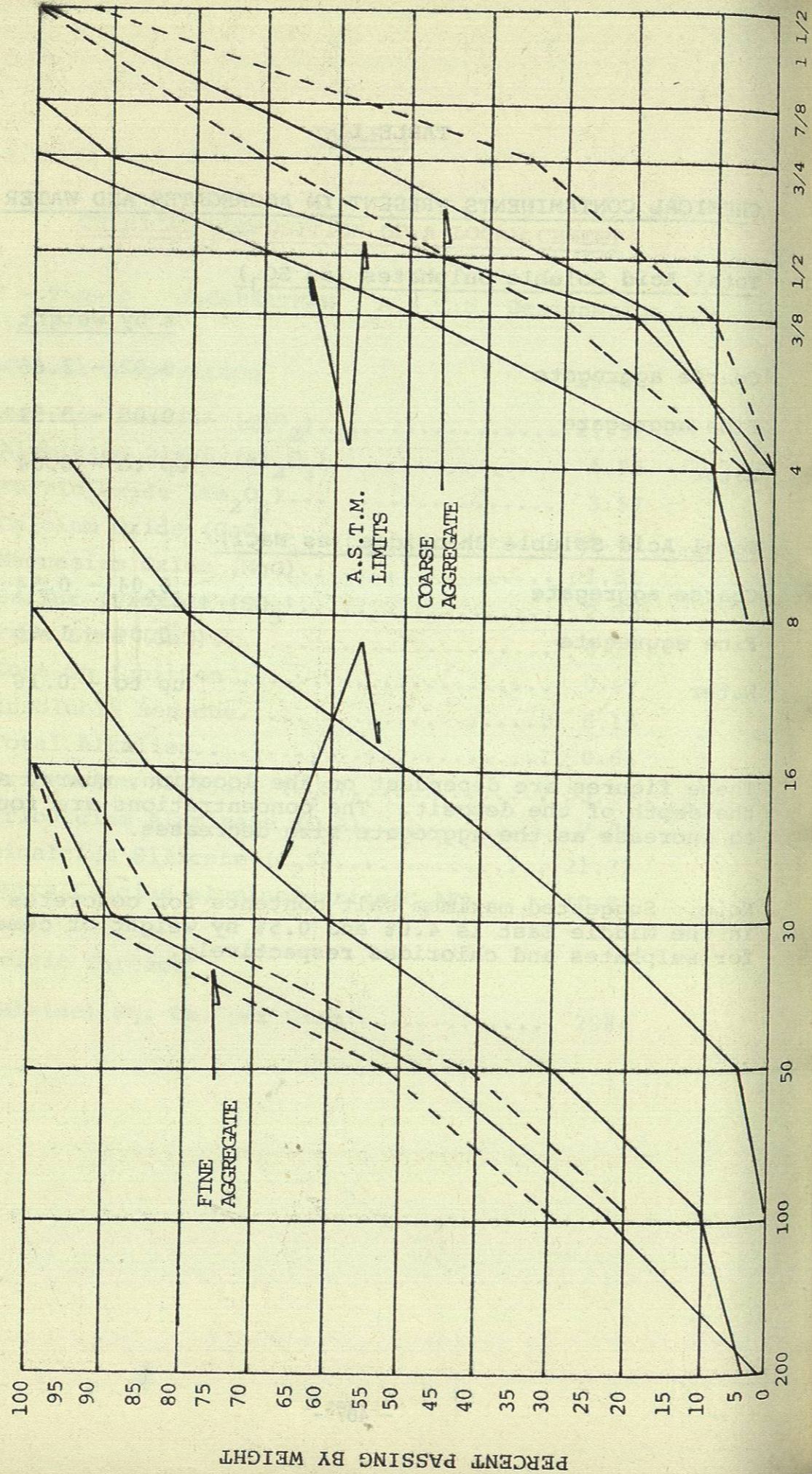


FIG. II
EFFECT OF VARIATION IN TEMPERATURE ON SLUMP LOSS

