UTELITE CORPORATION

Technical Information Sheet - MOISTURE

BATCH WEIGHT ADJUSTMENT OF LIGHTWEIGHT CONCRETE

Calculate the volume, per loose cubic foot, of the lightweight aggregate needed in the concrete mix design. This may be SSD or OD dependent on the design procedure. Calculation is achieved by dividing the design batch weight by the weight of the lightweight aggregate per cubic foot see example 1.

EXAMPLE 1
Lightweight aggregate SSD by design per yard = 950 lbs
Weight of LW aggregate SSD per cubic foot = 54 lbs.
950/54 = 17.59 loose cubic feet

This volume, 17.59 is the design factor for this mix design. Everyday prior to batching of the lightweight concrete, a loose unit weight is pulled. The weight of the material is then multiplied by the design factor. This is the adjusted batch weight for the lightweight material with the actual moisture content compensation included.

Calculated free moisture is removed from the batch water in the design to maintain the proper Water/Cement ratio of the mix design.

CALCULATING FREE vs. ABSORBED MOISTURES

Collect a small aggregate sample (16 oz. Cup) from the stockpile.
Weigh and document wet weight Documented wet =(A)
Dry to a consistent weight and document OD weight Documented dry weight =(B)
Calculate total moisture A-B = C C/B = Total moisture.

Collect a minimum of three small samples (16 oz. Cup) from the stockpile.
Weigh and document wet weight Documented wet weight = (D)
Using a towel or chamois, dry sample until surface color appears to be mottled .
Weigh and document towel dry (SSD) weight Documented SSD weight = (E)
Calculate the % of free moisture D-E = F F/E = % Free Moisture

*UTE*lize it !

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