



# KUT PERFOAM

## Admixture For Light Weight Concrete With Perlite

ADM – 21 - 0104

### DESCRIPTION

**KUT PERFOAM** is a colourless to brown liquid concentrate instantly miscible in water. **KUT PERFOAM** is used to produce light weight concrete mixes mainly in conjunction with Perlite type light weight aggregates / fillers.

### USES

- Masonry wall insulation, underfloor insulation.
- Light weight Perlite concrete.
- Insulating plasters.
- Light weight blocks.
- Roof deck insulation.
- Aerated normal concrete containing upto 25% air can be produced.

### ADVANTAGES

- Provides improved workability, reduced segregation and entrains air.
- Easy to use even in cold weather.
- Maybe used with all types of portland cement.
- Excellent stability over a wide range of temperature and water quality.
- Give excellent strength and thermal insulation when used in combination with Perlite.

### APPLICABLE STANDARDS

**ASTM C - 495** Test for compressive strength of light weight insulating concrete.

### TYPICAL PROPERTIES

- **Appearance** : Translucent, light brown liquid.
- **Specific Gravity** : 1.02 at 20°C.
- **Water Solubility** : Infinite.
- **pH 1% Solution** : pH = 7 - 9.
- **Freezing Point** : 3°C to 5°C. Recovers after freezing.
- **Chloride Content** : Nil to **BS 5075**.
- **Shelf Life** : In excess of 2 years.

### MIX RATIO

Typical mix batches with Perlite are shown below.

### Important Note

All proposed mix designs and expected properties are dependent on the dry bulk density of the Perlite or other light weight aggregates used. Any variation in the bulk density will effect the expected physical properties. In all such cases the tolerance limits allowable for

1. Wet Density
  2. Compressive Strength
  3. Oven Dry Density &
  4. Thermal Conductivity
- should be at least  $\pm 20\%$  of expected value

### Table I - Proposed Mix Designs

The proposed mix designs are formulated using light weight aggregates (Perlite) with a bulk density of 150 to 160 kg./m<sup>3</sup>.

	Cement / Perlite By Vol.	Cement kg.	Perlite m <sup>3</sup>	Water ltrs.	KUT PERFOAM ltrs.
a.	1 : 4	376	1.0	300	1.0
b.	1 : 5	301	1.0	290	1.0
c.	1 : 6	252	1.0	270	1.0
d.	1 : 8	188	1.0	270	1.0
	Sand m <sup>3</sup>	Cement M <sup>3</sup>	Perlite m <sup>3</sup>	Water ltrs.	KUT PERFOAM ltrs.
e.	2.2	1	3	1510	1.0
f.	2.0	1	3	1080	1.0
g.	2.5	1	1.6	1240	1.0
h.	2.1	1	1.1	1050	1.0



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## Table II - Expected Physical Properties

The expected physical properties have been measured using light weight aggregates (Perlite) with a bulk density of 150 to 160 kg./m<sup>3</sup>.

	Compressive Strength kN/m <sup>2</sup>	Oven Dry Kg./m <sup>3</sup>	Dry Density kg./m <sup>3</sup>	Thermal Conductivity W/M <sup>2</sup> K	Wet Density kg./m <sup>3</sup>
A	2413 - 3447	576±80	540±80	0.10 - 0.11	888±80
B	1585 - 2344	488±80	440±80	0.09 - 0.10	728±80
C	965 - 1378	432±80	390±80	0.08 - 0.09	649±80
D	552 - 661	352±80	340±80	0.07 - 0.08	584±80
E	5520 - 6210	---	1040±120	---	1312±120
F	6210 - 8280	---	1200±120	---	1280±120
G	7590 -- 8970	---	1312±120	---	1568±120
H	15670 - 17250	---	1408±120	---	1660±120

The above batch involved the use of a Pre-foaming solution of 1 part of **KUT PERFOAM** with 20 parts of water.

## INSTRUCTIONS FOR USE

Charge all Perlite into the concrete mixer. Charge 90% of required water. Mix for 1 to 3 minutes ensuring complete wetting and absorption of water by perlite. Prepare a solution of **KUT PERFOAM** in the remaining 10% water. Add this solution to the mixed wet perlite. Mix upto 3 minutes. Check for development of foam. If not, redose 50% as extra of **KUT PERFOAM** and mix for 2 minutes. Then add complete quantity of cement to this mix. Mix for 2 minutes. Wait for 1 minute. Again mix for 1 minute. Wait for 1 minute. Finally mix for 2 minutes. Check the wet density. If less than required then mix for more time. Ensure that the concrete is homogeneous, workable and pourable.

Alternatively a foam of **KUT PERFOAM** can be used to get better results.

## Important

The performance of concrete admixture is dependent on local conditions and on the quality of the other materials in the mix. Hence it is strongly recommended that the site trials are conducted.

## PACKAGING

**KUT PERFOAM** is supplied in 20 litre plastic carbuoys.

## PRECAUTIONS

**KUT PERFOAM** is essentially harmless. Easily washes off in water.

**Fire:** **KUT PERFOAM** is non - flammable.

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