Insulite for Thermal Insulation

Description
Insulite is lightweight, white to grayish white in color, fire resistant and non-combustible.

Specification
Conforming to (ASTM C-332, group 1).
Thermal conductivity of 0.04 to 0.06 W / m-o K.
Granule size of 0.15 to 4.75 mm.
Density of 100 to 120 kg / m3.

Uses of Insulite
Insulite is commonly used in construction and industry as a thermal insulation, lightweight insulating concrete, sloped to drain roof insulation, light weight insulated blocks, sound insulation, under floor insulation, cultured stone production, paints filler (rough finish), ground pipe insulation

Materials for lightweight insulating concrete
- **Insulite** - Lightweight Insulating Aggregate,
- **Cement**: Portland Cement, BS 12, 1978 and/or ASTM C150, type I, II, III
- **Air Entraining Agent, (A.E.A.)**: ASTM C-260 or as recommended by Saudi Perlite Ind., it is used to improve workability, control of water content and thermal insulation value. It reduces density, increase yield, contribute to insulating factor and the resistance to water absorption. Excess A.E.A. reduces strength. The correct quantity and even distribution of A.E.A. is essential.
- **Water**: clean water free from deleterious substances.

Proposed Mix Designs:

	Cement	انسولايت INSULITE The Best Thermal Insulation	Water	A.E.A
	50 kg. bag	100 ltrs. bag	ltrs	Ltrs
A	7.5	10 bags	300	4.1
B	6	10 bags	290	4.1
C	5	10 bags	270	4.1
D	4	10 bags	270	4.1

Physical Properties

	Compressive Strength	Dry Density	Wet Density	Thermal Conductivity*	Coefficient of Thermal Expansion
	kg/cm^2	kg/m^3	kg/m^3	W / m-^{o} K	unit /unit^{o}C
A	25 to 30	544 - 640	808 +/- 32	0.10 - 0.11	6.1 X 10^6
B	16 to 29	448 - 544	728 +/- 32	0.09 - 0.10	5.5 X 10^6
C	10 to 14	384 - 448	648 +/- 32	0.08 - 0.09	4.8 X 10^6
D	6 to 9	320 - 384	584 +/- 32	0.07 - 0.08	4.3 X 10^6

Recommendations:

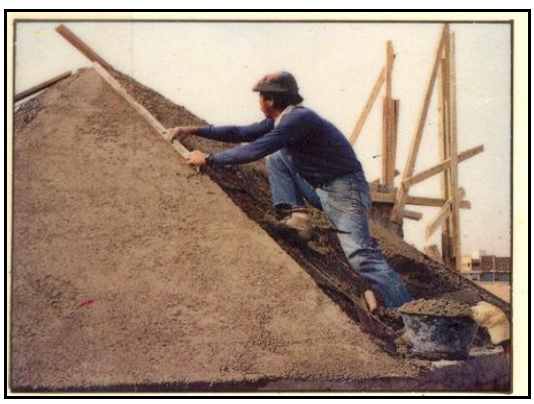
Mix A - it is used where intermediate thermal and strength properties are required or nail holding are more important than insulating value. E.g.: Floor fills certain lightweight structural roof designs. Floor fills shall have a topping of sand and pea gravel concrete or other suitable wearing surface.

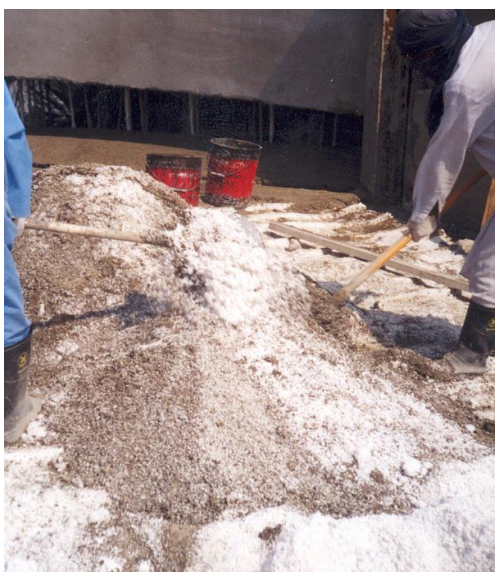
Mix B & C - offers an ideal balance of low dead load weight, adequate compressive and indentation strengths with good insulating value. It is used for lightweight roof constructions. Insulite concrete is placed over galvanized metal forms, paperbacked wire mesh, metal lath, form boards or other suitable forming materials. Used as permanent sloped to screed insulation over in-situ and pre-cast concrete roof decks complying the requirements of bonded roofing materials.

Mix D – is used for insulation and lightness are paramount considerations, where insulite concrete service does not require compressive strength. E.g.: Roof slab screed for insulation, floor fills, sloped to drain screed insulation.

Test and Approvals:

Perlite roof deck insulation systems have been tested and approved by Underwriters Laboratories, Factory Mutual and Code Authorities. Factory Mutual rates the system as non-combustible, which is a superior rating to their Class 1. U.L. Design P 920 successfully achieved the first 2-hour rating for any system of this kind under full-scale fire conditions. Systems over galvanized steel form units meet the criteria for U.L. Class 90 Wind Uplift Resistance as well as F.M. I-60 and I-90





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