



KUT PLAST R

Water Reducing And Retarding Admixture

ADM – 03 – 0104

DESCRIPTION

KUT PLAST R is supplied as a brown chloride free liquid based on a hydroxycarboxylic acid derivative, which instantly disperses in water.

When added to concrete mix **KUT PLAST R** causes the cement particles, which normally tend to agglomerate, to disperse more efficiently exposing a larger surface area and enabling the water content to perform more efficiently. This effect is used either to improve workability or increase ultimate strengths, and facilitates a reduction in the cement content.

The retarding properties of **KUT PLAST R** are also beneficial in concrete where high cement content or high temperatures are involved, Cold joints in continuous concrete pours are avoided and the use of lower cement content mixes will reduce heat of hydration.

USES

KUT PLAST R is a plasticising retarding admixture which is used to increase the workability and / or strength of concrete of a given cement content whilst increasing its initial and final setting time.

KUT PLAST R is particularly suitable for cohesive and cement rich mixes. For lean mixes and mixes which are prone to segregation **KUT PLAST 220** may prove to be more suitable.

ADVANTAGES

Large Pours : Set retardation allows extra placing time for larger pours or at elevated temperatures.

Ease of Placement : Increased workability facilitates placing and compaction.

Increased Ultimate Strengths : High strengths without increase in cement content or reduction in workability.

Cement Saving : Strength specifications and workability can be maintained with less cement.

STANDARDS

KUT PLAST R complies with **BS 5075: Part 1:1982** and with **ASTM C-494 Type D**.

TYPICAL PROPERTIES

Chloride content : Nil

Specific Gravity : 1.12 at 20° C.

Air entrainment : **KUT PLAST R** acts as a mild air detrainer.

Compatibility : **KUT PLAST R** is generally compatible with other **ASPEC** admixtures but it is recommended that all admixtures be added to concrete separately. **KUT PLAST R** can be used with all types of Portland cements. For advice on special cements consult **ASPEC** Technical Department.

Setting time : Initial and final set times will be related to cement type and ambient temperature,

SLUMP RETENTION

Table 1 gives typical results for the following **KUT PLAST R** mix :

OP cement	305 kg/m ³
Sand (washed)	650 kg/m ³
20-5 mm gravel	1210 kg/m ³
Ambient temperature	20° C

Table 1:

KUT PLAST R Add/50 kg OPC	Temp, °C	Maintenance of slump					
		0	1hr.	2hrs.	3hrs.	4hrs.	
		mm	mm	mm	mm	mm	
--	20	80	70	45	20	-	
0.21	20	170	130	100	80	50	
--	35	80	30	-	-	-	
0.21	35	180	110	80	60	30	

COMPRESSIVE STRENGTH AND RETARDATION

Table 2 gives typical results for compressive strength and retardation for the same mix as used for table 1.

Table 2:

0.5 N/mm ² BS 5075 Initial set hrs	3.5 N/mm ² BS 5075 Final set		27.6 N/mm ² ASTM C 403 Final set		Comp. Strength N/mm ²		
	ASTM C403 initial set hrs	hrs	Final set hrs	W/C	3days	7days	28days
Nil	4	5	6	0.65	20	27	37
0.14	6	7	9	0.60	24	34	45
0.21	7	8	11	0.56	27	37	48
0.28	9	10	12	0.56	28	38	48



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INSTRUCTIONS FOR USE

Dosage : The dosage of **KUT PLAST R** normally varies between 0.14 to 0.28 litres per 50kg cement, depending on the retardation required. Reference should be made to Table 1 and site trial carried out to establish the precise dosage level required.

Dispensing : The correct quantity of **KUT PLAST R** should be measured by means of a recommended dispenser. The company's Technical Department should be consulted regarding suitable equipment and its installation. The measured quantity of **KUT PLAST R** should be added directly to the mixer and best results are obtained if added at the same time with mixing water.

Curing : It is essential to prevent concrete which has been retarded from drying out. Normal curing methods such as water spray, wet hessian or a curing membrane of the **KUT CURE** type should be used.

TECHNICAL SUPPORT

"**ASPEC**" provides technical support service on mix design, admixture selection, evaluation of trials, dispensing equipment etc. Please contact the Technical department in these cases.

Cleaning : Spillages of **KUT PLAST R** can be removed with water.

Overdosing : An overdose of **KUT PLAST R** will result in increased retardation. Double dosing of the maximum recommended dose will result in a retardation of several days.

PACKAGING

KUT PLAST R is supplied in 20 and 210 litres drums.

Storage : **KUT PLAST R** should be protected from extremes of temperature. Should the material become frozen, it must be completely thawed and thoroughly mixed before use. **KUT PLAST R** has a minimum shelf life of 12 months. Provided the temperature is within the range of 5° C to 30° C. If the temperature is exceeded in any respect, advice should be sought from the supplier.

PRECAUTIONS

HEALTH AND SAFETY

KUT PLAST R must not be ingested. It is mildly alkaline and prolonged contact with the skin must be avoided. Splashes to the skin should be washed with water. Any splashes to eyes should immediately be flushed with clean water and medical advice should be sought

Fire : **KUT PLAST R** is non-flammable.

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