



HELIOPOLIS Concrete Technology Centre

مركز هليوبوليس لتكنولوجيا الخرسانة
Design - Quality Control - Testing

Client : - Green Build Egypt
Subject : - Compliance of Chemical Admixture sample to ASTM C 494
Date : - 23rd February 2019
Our Ref. : - Tests/Admixtures/ASTMC494

Dear Sir,

Reference is made to the a/m subject. Please find attached, attachment 1, the testing results for the compliance, in terms of slump, time of setting and compressive strength of the submitted high range water reducing retarding chemical admixture sample, FLOWCRETE F.

According to the carried-out tests and available results up to age of testing, the supplied and tested chemical admixture sample, FLOWCRETE F, fulfills the ASTM C494: Type F requirements.

Best regards,

Consulting Eng.

Prof. Dr. Hossam Hassan



Attachments: -

- Att. 01: The testing results report, (No. of pages: 03- page).
Att. 02: The manufacturer data sheet, (No. of pages: 02- page).

The testing sample is delivered by the client



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Att. 1: The testing results report.
(No. of pages: 03- page)

Table 1: Concrete mixes proportions.

Concrete Mix	Constituent Materials Proportions						
	Cement (Kg/m³)	Free Water (L/m³)	Aggregate, (Kg/m³)			Chem. Admix. % weight of cement)	W/C Ratio
			Fine		Coarse II		
Control Mix	400	190	675	----	680	----	0.46
Mix with FLOWCRETE F	400	155	675	1.0%	680	1.0%	0.39

* OPC complies with CEM I cement to ESS: 4756-1/2005 – grade42.5N.

** Fine and coarse aggregate complies with ASTM C 33.



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Table 2: Testing results.

PROPERTY (Testing Standard)	RESULTS	
	Control Mix	Mix with FLOWCRETE F Admixture
1- Slump, mm (ASTM C 143)	105	100
2- Initial Time of Setting, hr. – min. (ASTM C 403)	04 - 15	05 - 00
3- Final Time of Setting, hr. – min. (ASTM C 403)	06 - 45	07 - 15
4- Cube Compressive Strength, kg/cm ²		
1-day	122	189
3-day	228	302
7-day	289	387
28-day	382	464



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Table 3: The ASTM requirements and the attained results compared to the control mix.

PROPERTY (ASTM Requirements: Compared to control Mix)	The effect of the chemical admixture on the concrete physical properties compared to the control mix (FLOWCRETE F)
1- Water Content, (Max. 88%)	82.0
2- Initial Time of Setting, Not more than 1.00hr earlier Nor 01:30 later)	+ 00 : 45
3- Final Time of Setting Not more than 1.00hr earlier Nor 01:30 later)	+00 : 30
4- Compressive Strength, (Min. %) 1-day: 140 3-day: 125 7-day: 115 28-day: 110	155 132 133 121

* Results shall be submitted after testing.

