

Daracem 50[®] and Daracem 55

Compressive Strength Comparison

Introduction

An evaluation was performed to document the performance of Daracem[®] 50 and Daracem 55 manufactured by GCP Advanced Technologies Construction Products. The two products meet the requirements of ASTM C494, Type A water-reducing admixtures with finishing enhancing qualities.

Concrete mixes were fabricated using three (3) different cements, two Type I and one Type I/II. Both products were added at dosage rates of 196, 391 and 587 mL/100 kg of cement (3, 6 and 9 oz/100 lbs of cement) respectively. Total water content was adjusted to maintain a consistent slump. Concrete mixes were monitored for initial setting time and compressive strength at 1, 7 and 28 days. All mixes were non-air-entrained.

Improved compressive strength is the most important benefit of using a water reducer. Daracem 50 and 55 both offer substantial strength gain.

Compressive Strength of Concrete Containing Daracem 50 and Daracem 55

Dosage Rate, mL/100 kg (oz/100 lbs)		Compressive Strength, MPa (psi)											
		1 Day		7 Day				28 Day					
		Daracem 50		Daracem 55		Daracem 50		Daracem 55		Daracem 50		Daracem 55	
0	(0)	9	(1370)	9	(1370)	27	(3940)	27	(3940)	36	(5290)	36	(5290)
196	(3.0)	11	(1580)	10	(1470)	29	(4270)	29	(4180)	39	(5630)	38	(5580)
391	(6.0)	13	(1860)	12	(1700)	33	(4800)	33	(4720)	41	(5920)	41	(5890)
587	(9.0)	13	(1950)	13	(1870)	35	(5110)	35	(5090)	42	(6120)	42	(6140)

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GCP Applied Technologies Inc., 62 Whittemore Avenue, Cambridge, MA 02140 USA.

In Canada, 294 Clements Road, West, Ajax, Ontario, Canada L1S 3C6.

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