



TECHNICAL BULLETIN AD-04

SET RETARDING ADMIXTURES

EUCLID CHEMICAL

Lignin Based Retarder, Standard Retarder Technology, and Hydration Control Admixture Comparison

Euclid Chemical’s Set Retarding admixtures can help extend the working time of concrete by slowing down the hydration process of cement. Figure 1 shows a typical cement hydration reaction of Portland cement paste, with and without a Euclid Chemical Type D admixture. Euclid Chemical’s Set Retarding admixtures prolong the dormant period allowing increased workability and slump life. Figures 2 and 3 show the comparative dosage information for Euclid’s Lignin Based Retarder, Standard Retarder Technology, and Hydration Control Admixtures over a range of given temperatures.

Figure 1. Use of retarding admixtures prolonging dormant period (working time)

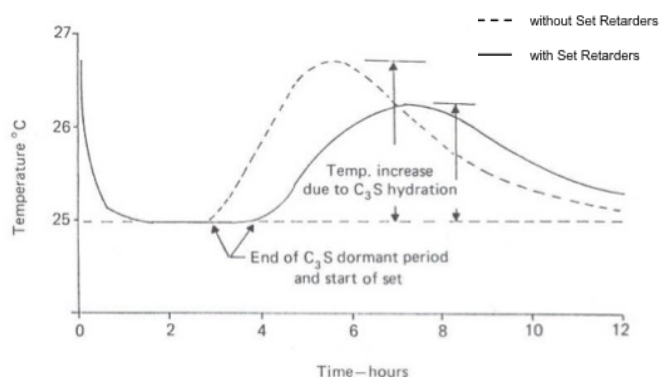


Figure 2. Set Retardation Admixture Dosage Graph

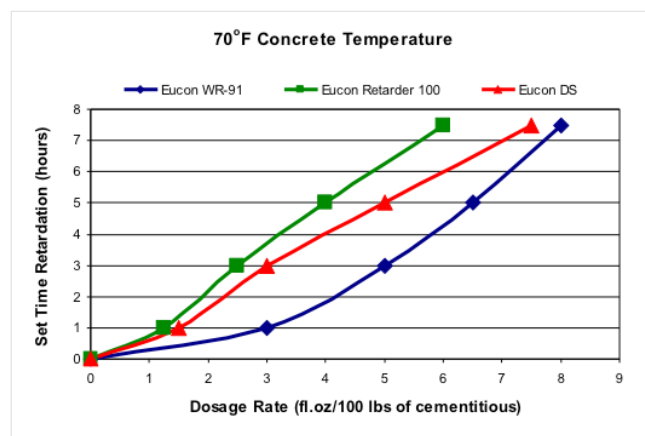


Figure 3. Set Retardation Admixture Dosage Chart

Concrete Temperatures and admixture dosing requirements (oz/cwt)									
	50 - 60 °F			70 - 85 °F			> 85 °F		
Additional Working Time / Retardation (hours)	Eucon WR-91	Eucon Retarder 100 Eucon NR	Eucon DS Eucon WO	Eucon WR-91	Eucon Retarder 100 Eucon NR	Eucon DS Eucon Stasis	Eucon WR-91	Eucon Retarder 100 Eucon NR	Eucon DS Eucon WO
< 1:30	1.0 - 2.0	NA	NA	2.0 - 4.0	1.0 - 1.5	1.0 - 2.0	4.0 - 6.0	2.5 - 3.0	3.0 - 5.0
2 - 4	2.0 - 3.0	1.0 - 2.5	1.0 - 1.5	4.0 - 6.0	2.0 - 3.0	2.0 - 4.0	6.0 - 7.0	3.0 - 5.0	5.0 - 6.0
4 - 6	3.0 - 5.0	2.5 - 3.0	2.0 - 3.0	6.0 - 7.0	3.0 - 5.0	4.0 - 6.0	7.0 - 9.0	5.0 - 7.0	6.0 - 8.0
6 - 9	5.0 - 7.0	3.0 - 4.0	3.0 - 5.0	7.0 - 9.0	5.0 - 7.0	6.0 - 9.0	9.0 - 10.0	7.0 - 8.0	8.0 - 9.0
9 - 13	7.0 - 9.0	4.0 - 5.0	5.0 - 7.0	9.0 - 10.0	7.0 - 8.0	9.0 - 10.0	NA	8.0 - 9.0	9.0 - 10.0
> 13	> 9.0	> 5.0	> 7.0	> 10.0	> 8.0	> 10	NA	> 9.0	> 12.0

This chart is to be used as a general guideline and may vary depending upon the particular concrete mix design, cement type and placement conditions. Please contact your local Euclid Chemical Sales Representative for more information.