

OUTLINE DRAFT - NOT FOR PUBLICATION

TOWARDS PERFORMANCE CLASSIFICATION OF SLURRY SEAL SYSTEMS

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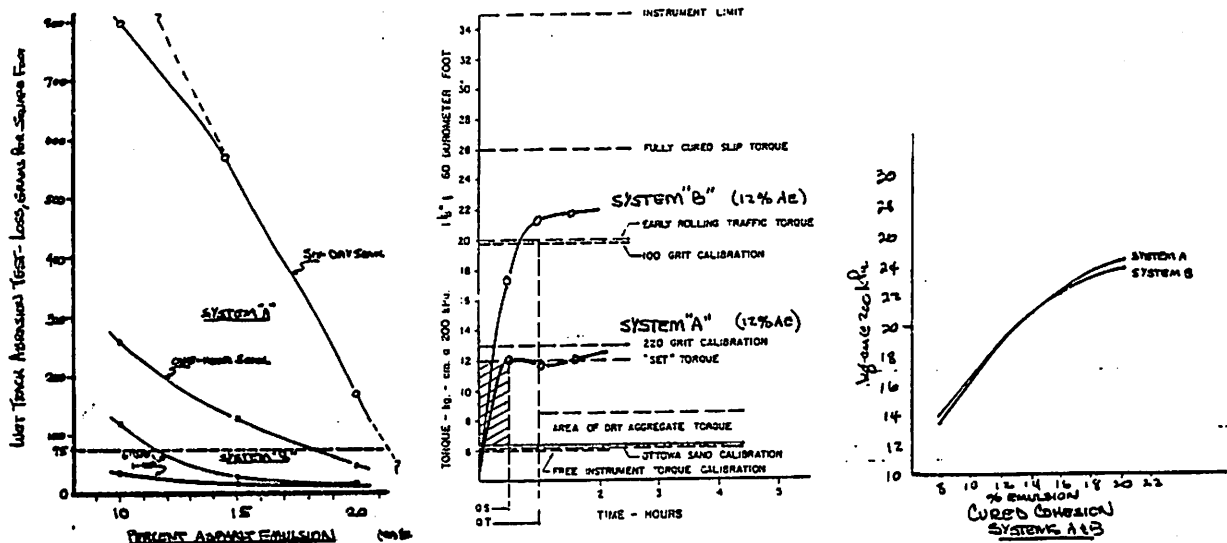


FIGURE 9. COHESION TESTER TORQUE LEVELS

WHILE PERFORMING SLURRY DESIGN CLIENT WORK IN OUR POLYMAC ALPHA LABORATORY OVER THE PAST FOUR YEARS, WE HAVE NOTED VERY LARGE DIFFERENCES IN THE LABORATORY RESULTS FROM MANY DIFFERENT MATERIALS SOURCES. THESE RESULTS SEEM TO GENERALLY FIT INTO TWO CATEGORIES, (A) THE COMMON OR ORDINARY COMMODITY CATEGORY, AND (B) THE EXCELLENT OR PERFORMANCE CATEGORY.

TO ILLUSTRATE THESE TWO CATEGORIES, "A" AND "B" LAB SPECIMENS WERE PREPARED AND TESTED IN ACCORDANCE WITH ISSA AND ASTM PROCEDURES. BOTH "A" AND "B" WERE IDENTICAL IN EVERY RESPECT EXCEPT FOR THE EMULSIFIER USED. BOTH AGGREGATE AND ASPHALT CEMENT WERE OF THE VERY BEST QUALITY. ONLY THE EMULSIFIERS VARIED. BOTH EMULSIONS WERE LABELED "CQS-1H."

TRIAL MIXES. BOTH "A" AND "B" REQUIRED 1/2 TO 1 1/2% PORTLAND CEMENT TO REDUCE TACKINESS AND TO IMPROVE WORKABILITY. SYSTEM "A" REQUIRED 50% MORE MIX WATER THAN SYSTEM "B" TO PRODUCE EQUIVALENT CONSISTENCIES.

MIX TIMES WERE ALL 2+ MINUTES.

SPLIT CONSISTENCIES SHOWED NO EVIDENCE OF BITUMEN OR FINES FLOTATION OR SEGREGATION.

BOILING WATER ADHESION WAS NOT REQUIRED BY THE CLIENTS' SPECIFICATIONS BUT THE RESULTS WERE:

SYSTEM A - 0% COATING
SYSTEM B - 100% COATING

WET TRACK ABRASION TEST (WTAT) RESULTS SHOWED:

	<u>SYSTEM A - GRAMS LOSS</u>		<u>SYSTEM B - GRAMS LOSS</u>	
	<u>1-HR SOAK</u>	<u>6-DAY SOAK</u>	<u>1-HR SOAK</u>	<u>6-DAY SOAK</u>
10% AE	259.5	794.5	33.4	120.6
15% AE	128.5	576.8	17.8	27.5
20% AE	56.5	170.3	15.3	17.4

WET COHESION TEST RESULTS:

	<u>30'</u>	<u>60'</u>	<u>90'</u>	
SYSTEM A	12.0	11.8	12.1	(SS-SC)
SYSTEM B	17.5	21.3	21.7	(QS-QT)

60C CURED COHESION TESTS

SYSTEM A & SYSTEM B - NO DIFFERENCE

MINI-WTAT (UNDER DEVELOPMENT)

	SYSTEM A GRAMS		SYSTEM B GRAMS	
	<u>1-HR SOAK</u>	<u>6-DAY SOAK</u>	<u>1-HR SOAK</u>	<u>6-DAY SOAK</u>
15% AE	3.2	12.7	1.2	3.4

IT BECOMES QUITE OBVIOUS THAT WE ARE DEALING WITH TWO ENTIRELY DIFFERENT SYSTEMS HERE -- AND OVER THE WORLD.

OUR CONVENTIONAL METHOD OF WTAT DESIGN WILL REQUIRE TOO MUCH EMULSION FOR SYSTEM "A" WHILE SYSTEM "B" UNDER OUR DESIGN TECHNIQUES WOULD PROBABLY REQUIRE ONLY ABOUT 50% LESS EMULSION THAN SYSTEM "A".

PUT ANOTHER WAY, SYSTEM "A" WILL REQUIRE 100% MORE EMULSION THAN SYSTEM "B"

WHAT IS GOING ON HERE?

AT OUR 1985 ORLANDO MEETING, WE SUGGESTED A SYSTEM EVALUATION NUMBER OR SEN WHICH IS SIMPLY THE MINIMUM WTAT VALUE, SAY 9% OR 18%. USE OF THIS EVALUATION SYSTEM WOULD ALLOW PERFORMANCE CLASSIFICATION OF OUR EMULSION-AGGREGATE SYSTEMS.

WE SUGGEST HERE THAT A FULL STUDY AND REVIEW OF OUR DESIGN METHODS ARE IN ORDER AND THAT INTERESTED PARTIES MEET DURING THE COMING YEAR, PERHAPS IN EUROPE, TO DISCUSS THIS SPECIAL PROBLEM.

COMMENTS AND SENSE OF THE GROUP.