

# OFFICE MEMORANDUM

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MICHIGAN

STATE HIGHWAY DEPARTMENT

April 16, 1965

To: W. W. McLaughlin  
Testing & Research Engineer

From: E. A. Finney

**Subject:** Laboratory Test Results on Safe-Ray Glass Beads (High Intensity) for Pavement marking. Research Project 47 G-36(18b). Research Report No. 512.

Subject glass beads were referred to Research Laboratory Division for evaluation by your letter of November 3, 1964 approving prior requests by J. E. Meyer and H. H. Cooper. Sample number 64 MR-186.

H. H. Cooper's letter to you dated March 25, 1965 inquired on progress of evaluation of the Safe-Ray beads, and of two other items.

The Laboratory plan of evaluation of the Safe-Ray beads covers the following:

1. Evaluate beads by standard laboratory tests covering gradation, imperfections, intensity, etc., which tests have been completed as given in attached results.
2. Evaluate beads in paint stripes to be applied in forthcoming 1965 performance or field tests and reported therewith.

You may wish to discuss this subject at forthcoming Spring meeting of Traffic Control Devices Committee.

OFFICE OF TESTING AND RESEARCH

E. A. Finney, Director  
Research Laboratory Division

EAF:AJP:nl

Attachment

cc: H. H. Cooper  
H. J. Rathfoot

MICHIGAN  
 STATE HIGHWAY DEPARTMENT  
 Office of Testing and Research  
 Research Laboratory Division  
 735 East Saginaw Street  
 Lansing, Michigan

Project	ROAD MAINTENANCE
Laboratory No.	64 MR-186
Date	April 14, 1965

**REPORT OF TEST**

Report on sample of SAFE-RAY GLASS BEADS FOR PAVEMENT MARKING (Experimental High Intensity)  
 Date sampled \_\_\_\_\_ Date received September 15, 1964  
 Source of material Flex-O-Lite Corporation, St. Louis, Missouri  
 Sampled from Producer's Stock Quantity represented \_\_\_\_\_  
 Submitted by R. Reed, manufacturer's representative, through H. H. Cooper  
 Intended use Pavement Marking Specification MSHD

**TEST RESULTS**

Color	Satisfactory		
Imperfections, percent:	3.3		
Gradation:	Sieve No.	Percent Passing	MSHD Type 3 beads Avg. results
	30	99.7	
	40	91.8	
	70	75.9	
	230	1.7	
Specific Intensity, cp/fc/sq. ft.	1.46 *	1.68 **	1.00
Chemical Stability Specific Intensity after refluxing	1.46 *	1.52 **	0.85
Free Flow Treatment (Immersion Test)	Not present		
Index of Refraction - Values depend on gradation, + 50 mesh	1.90+		1.51
	- 50 mesh	1.51+	
Specific Gravity	2.71		2.50

NOTE: (\*) Based on a value of 0.55 for white paint backing, using same weight as Type III beads.  
 (\*\*) Using same volume as MSHD Type III Glass Beads.

REMARKS: Tested for information in accordance with J. E. Meyer's request of November 2, 1964.

cc: File  
 H. H. Cooper  
 H. J. Rathfoot

Signed W.W. McLaughlin