

OFFICE MEMORANDUM



MICHIGAN
DEPARTMENT OF STATE HIGHWAYS

July 10, 1973

LAST COPY
DO NOT REMOVE FROM LIBRARY

To: L. T. Oehler
Engineer of Research

From: F. J. Bashore

Subject: "Resil-a-Post" Flexible Traffic Guide Post. Research Project 73
NM-352. Research Report No. R-868.

In a letter dated February 16, 1973, H. H. Cooper, Engineer of Traffic and Safety, requested that the Research Laboratory compare the material and physical properties of the subject post with those of a similar post called a "Safety Guide Traf-Flex Post." This latter product was evaluated in detail in the Traffic and Safety Division's Report No. TSD-TR-154-72.

A sample "Resil-a-Post" was obtained from the Traffic and Safety Division; at that time, however, a "Traf-Flex" post was unavailable from them, though they had made several installations of this product. Subsequently, we were able to obtain a sample from the manufacturer.

Both of these devices are designed to function in the same manner. Each consists of a post assembly and a base plate. The post assembly consists of the post proper, an upper cap, and a short hinge section--held to the post by an elastic shock cord--and threaded to affix to the base plate (Fig. 1). When subjected to impact, the post will deflect at the hinge, then spring back into place.

The materials and the physical properties of the two posts were compared and found to be quite similar. The base assemblies appeared to be identical except for their colors. The only significant differences were present in the tubular sections. The tubes were both cross-linked polyethylene, but of different densities. The Resil-a-Post was stiffer and stronger due to the fact that the wall was thicker and the higher density of the material provided a higher tensile strength and modulus. The yellow pigment dispersion was poorest in the Resil-a-Post; however, it was not good in the Traf-Flex post either. Better pigment dispersion would tend to protect the material from ultraviolet degradation and improve the post's weathering properties. A test result summary is attached.

While differences in strength and stiffness were found when comparing the two posts, these differences do not indicate which post would be superior in service.

TESTING AND RESEARCH DIVISION

Francis J. Bashore

Chemical Engineer
Materials Research Unit

FJB:bf

TEST RESULT SUMMARY

	Resil-a-Post (73 M-24)	Traf-Flex Post (73 M-25)
Material		
Cap	ABS	polyethylene
Post	polyethylene	polyethylene
Base	ABS	ABS
Color		
Cap	yellow	black
Post	yellow	yellow
Base	yellow	black
Dimensions		
Height, in.	38.5	28.2
Post diameter, in.	2.4	2.2
Post wall thickness, in.	0.17	0.11
Physical Properties (post only)		
Tensile stress at yield, psi	2,360	1,680
Tensile stress at rupture, psi	2,050	2,300
Tensile modulus, psi x 10 ⁵	0.495	0.241
Elongation at rupture, percent	130	565
Hardness, Shore D	53	46
Specific gravity	0.930	0.921

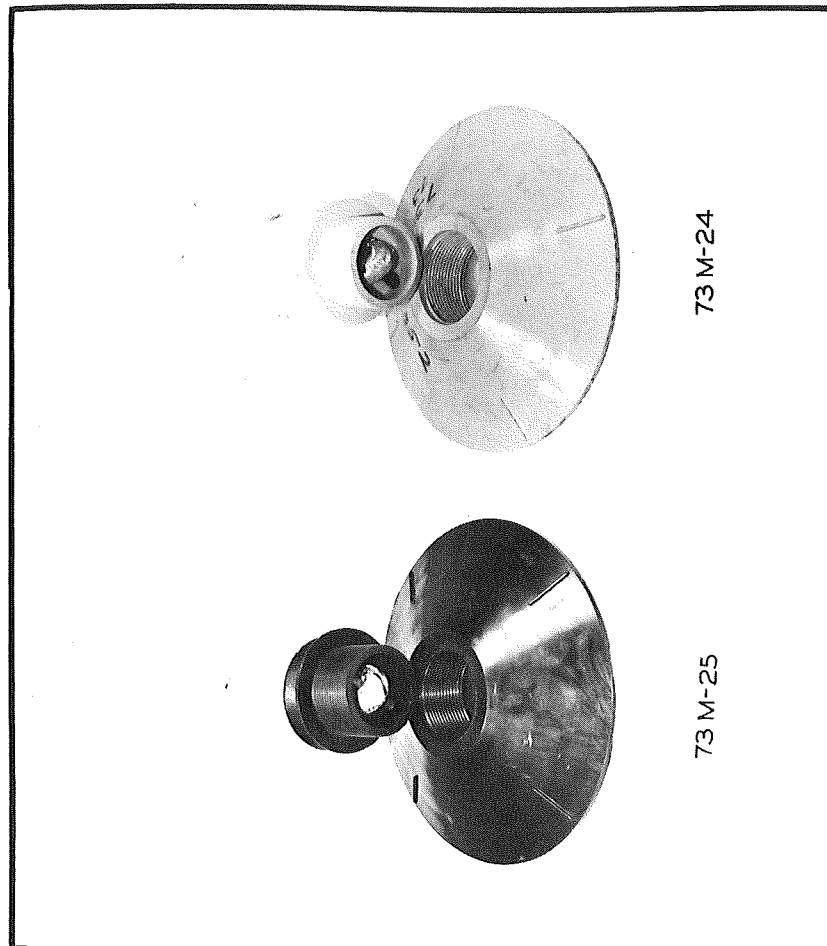
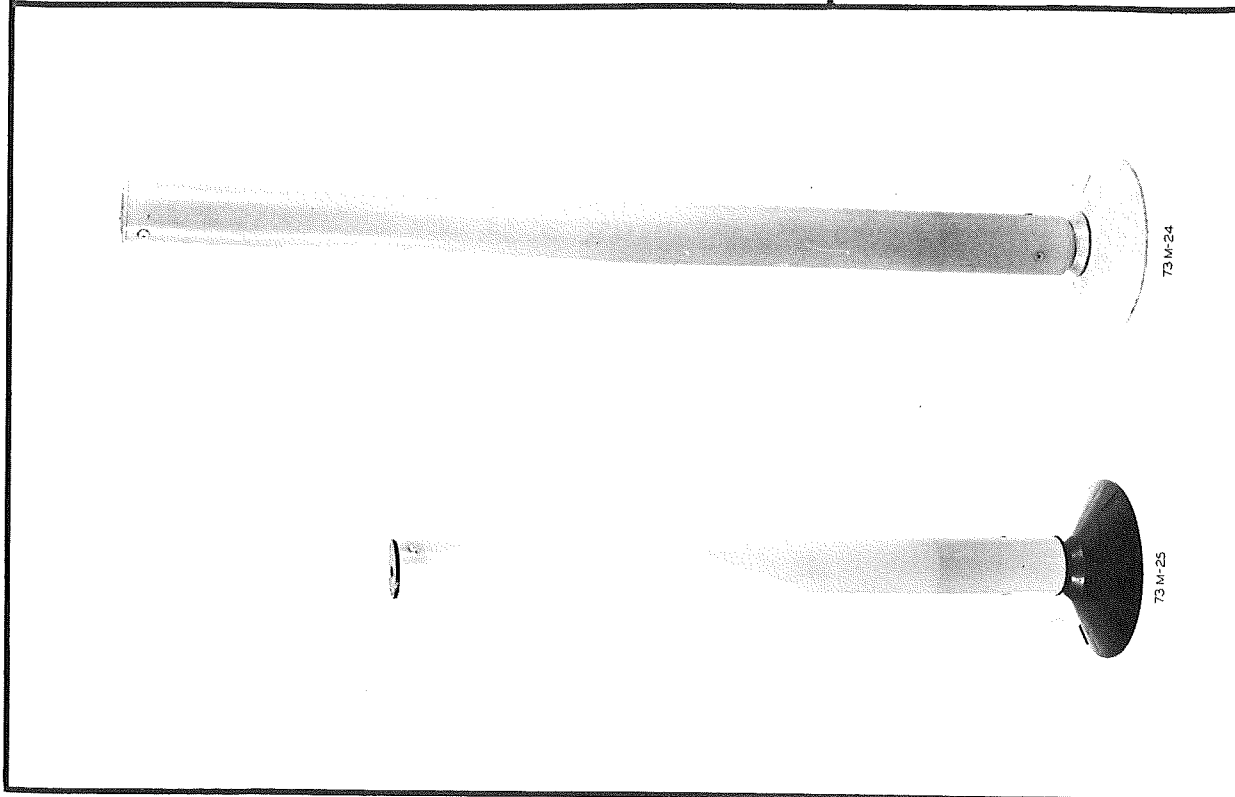


Figure 1. Traf-Flex (left post) and Resil-a-Post traffic guide posts. Upper photo shows the base, shock cord, and hinge assembly of each post.