

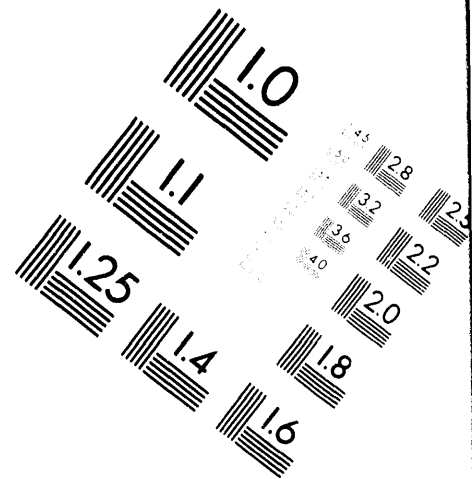
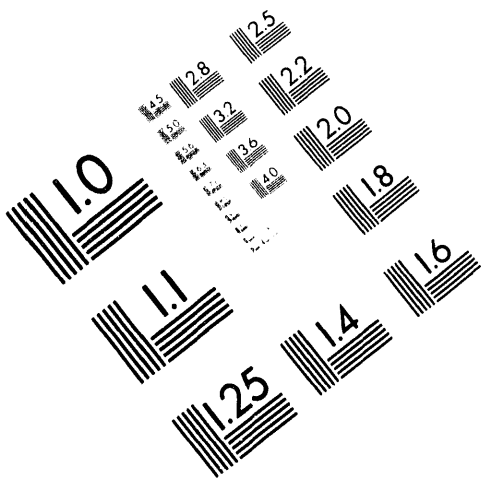


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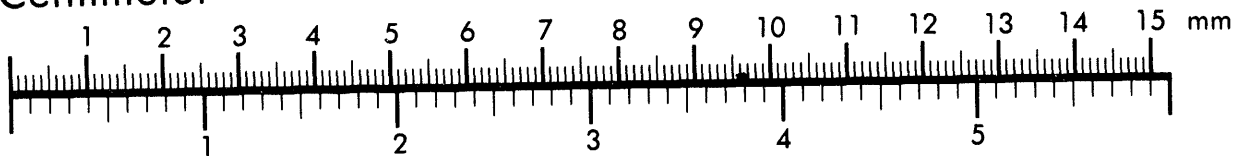
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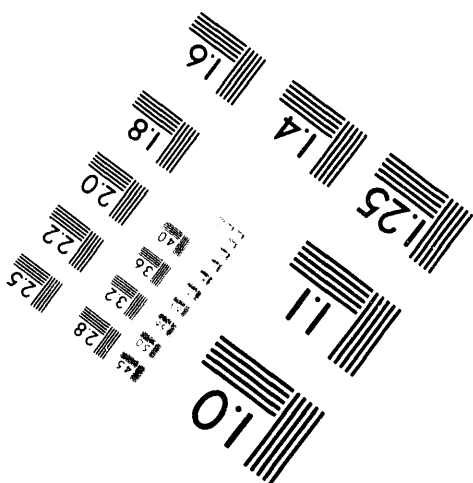
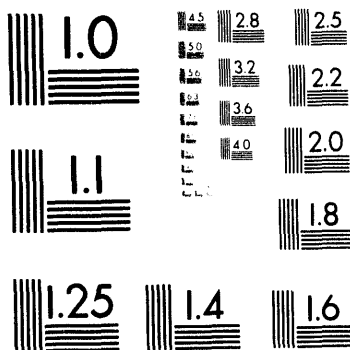
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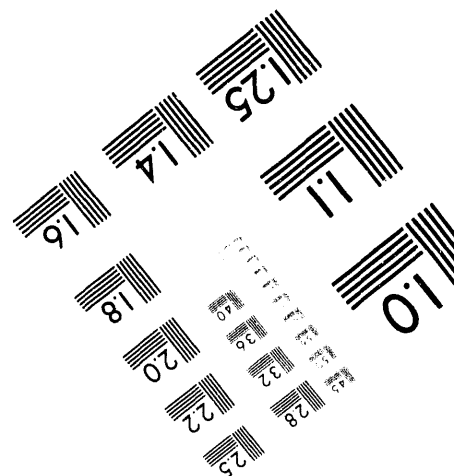
Centimeter



Inches



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May 20, 1951

L. E. Leitz
Process Engineering Unit
PROCESS TECHNOLOGY SUB-SECTION

COMPRESSIVE TESTING OF IRRADIATED SLUGS

A ram and slug holding cradle were used to test the compressive strength of irradiated mixing and I&E slugs.

The piece was placed inside a small section of process tubing and then positioned in the holding cradle. The pump was actuated causing the cylinder ram to contact the slug and push it against a stationary support. After the slug was supported between these two points, the cradle was removed and pressure was applied to the ram in 500 pound increments. Following each pressure increase, the tubing was moved along the length of the slug with hand tongs to determine if the slug had been deformed to the point of sticking. Preliminary tests, using unirradiated slugs, indicated that a force of 31,500 pounds was sufficient for sticking both the mixing and I&E slugs.

six I&E slugs exposed to 704 Mrd/T were selected from tube 2464 C for testing. The following results were obtained:

<u>Slug No.</u>	<u>Pressure at which Slug Stuck</u>	<u>Pressure Applied Slug Did Not Stick</u>
1	45,500	
10		40,000
15	42,000	
20	31,500	
25		40,000
32		43,000

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L. B. Leitz

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May 20, 1977

Thirteen mixing slugs were selected for testing. The following results were obtained:

<u>Slug Identification No.</u>	<u>Tube Number</u>	<u>Exposure</u>	<u>Pressure Sticks</u>
AM030	3057-C	064 MLD/T	26,000 pounds
AM033	3050-C	654 MLD/T	26,000 pounds
AM030	3191-C	702 MLD/T	30,000 pounds
AM030	4108-C	765 MLD/T	29,500 pounds
AM0400	416-C	767 MLD/T	31,000 pounds
AM0400	4204-C	713 MLD/T	31,500 pounds
AM0400	2755-C	762 MLD/T	26,500 pounds
AM0400	0574-C	646 MLD/T	31,500 pounds
AM0400	4283-C	719 MLD/T	25,000 pounds
AM050	4282-C	725 MLD/T	24,000 pounds
AM0400	3871-C	716 MLD/T	24,000 pounds
AM0400	2753-C	705 MLD/T	27,000 pounds
AM0400	2453-C	712 MLD/T	27,500 pounds

The mixing portion of the slugs did not collapse on the unirradiated or irradiated test pieces. The weld juncture mushroomed which resulted in sticking.

The compressive test equipment has been stored and is available for future tests.

HP Bobish
Component Testing Unit
Research & Engineering Section

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