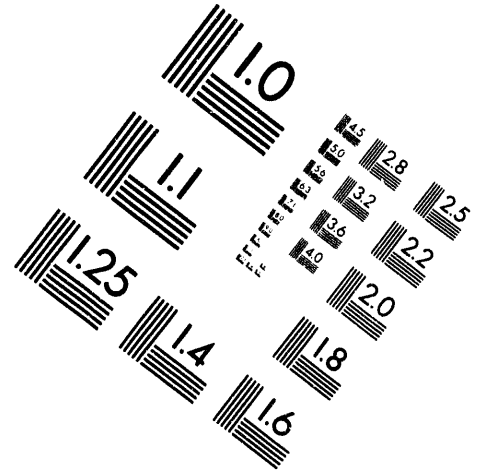
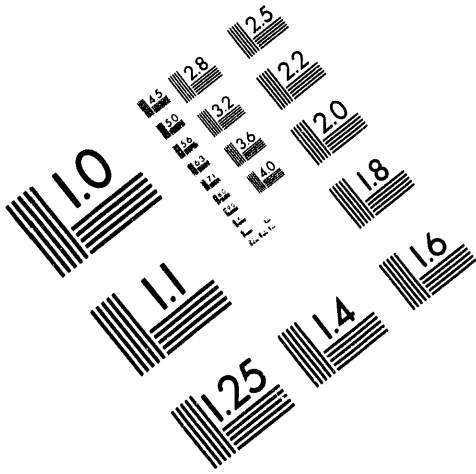




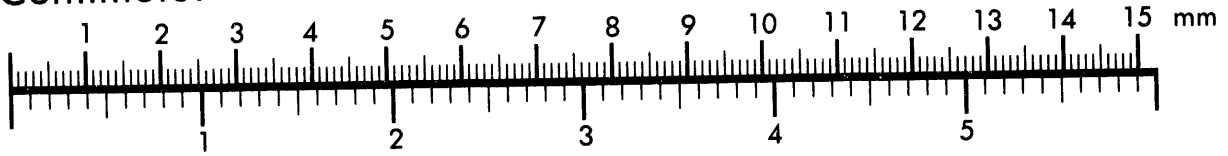
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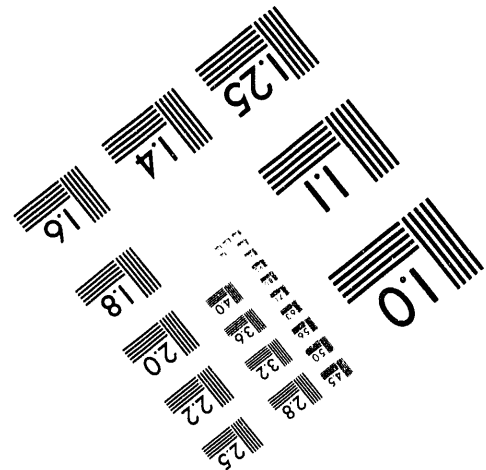
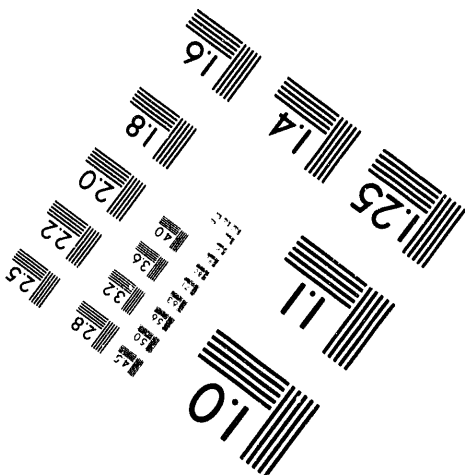
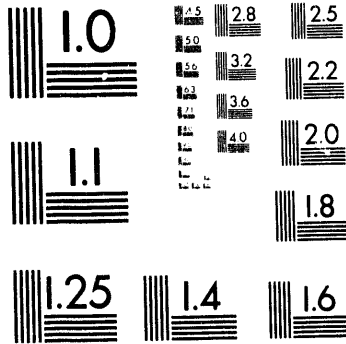
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REPORT ON PRODUCTION TEST NO. 313-58-M

Recovery of Lead Dipped Slugs



Introduction:

A number of slugs have been dipped in lead, then Al-Si and caustic. Laboratory experiments showed that the can and outer bonding layers could be removed by the standard caustic-nitrate treatment. The alloy layer was removed from several slugs by hot nitric acid without use of hydrofluoric acid. It was desired to extend the method to the plant process and to clean accumulated lead dipped pieces.

Summary:

Lead dipped slugs may be cleaned by the regular recovery process with a weight loss of about 0.03 lbs. per slug. Attempts to modify or shorten the procedure were not successful. Twenty-four (24) of the recovered slugs were canned satisfactorily.

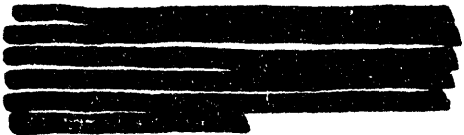
Details:

After mechanical removal of the end caps, all slugs were processed in the normal manner through the plant caustic-nitrate bath. No difficulty was encountered. The slugs were weighed at this point so that the losses reported would represent only the weight of alloy layer and base metal removed.

The alloy layer was removed from several small batches of slugs without hydrofluoric acid treatment by immersing them in hot 20% nitric acid for 15 minute periods until clean. The weight loss by this method varied up to 0.17 lbs. per slug and as many as five treatments were required. It was evident from the appearance of the slugs that some Al-Si had penetrated the lead and had formed an alloy layer which must be removed by hydrofluoric acid.

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MASTER

Reviewing Official: J. Banick
J. Banick, AED Class Officer

Date: 3/24/89



In an attempt to shorten the normal hydrofluoric acid time of one hour, 144 Class A slugs were treated for 30 minutes followed by 5 minutes in nitric acid. Thirty-nine (39) of the pieces had to be given a second treatment. The average weight loss was 0.08 lbs. per slug. Since repeated acid treatments are known to be damaging to the slugs, all subsequent work was done using the standard process.

Using "X" class slugs, 144 were cleaned with an average weight loss of 0.03 lbs. and 390 more were cleaned but not weighed. The weight loss for 144 C pieces averaged 0.02 lbs. per slug. Since the loss for bronze dipped production pieces is also about 0.02 lbs., it was concluded that the recovery process is capable of cleaning lead dipped slugs without modification.

Twenty-four (24) clean Z pieces recovered after lead dipping were canned in regular production. Wetting and canning were normal and #1 frost tests were obtained.

Data for this report were compiled and analyzed by T. G. Webber.

K. G. Jones, Chief Supervisor

L. D. Eubank
L. D. Eubank, Area Supervisor
Metallurgy

TGW
TGW/mb

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SUBJECT Technical Department Report on Production Test 313-58-M Recovery of Lead Dipped Slugs

To W. O. Simon FROM L. D. Eubank
For Ref. to Prod. Test see doc.

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