

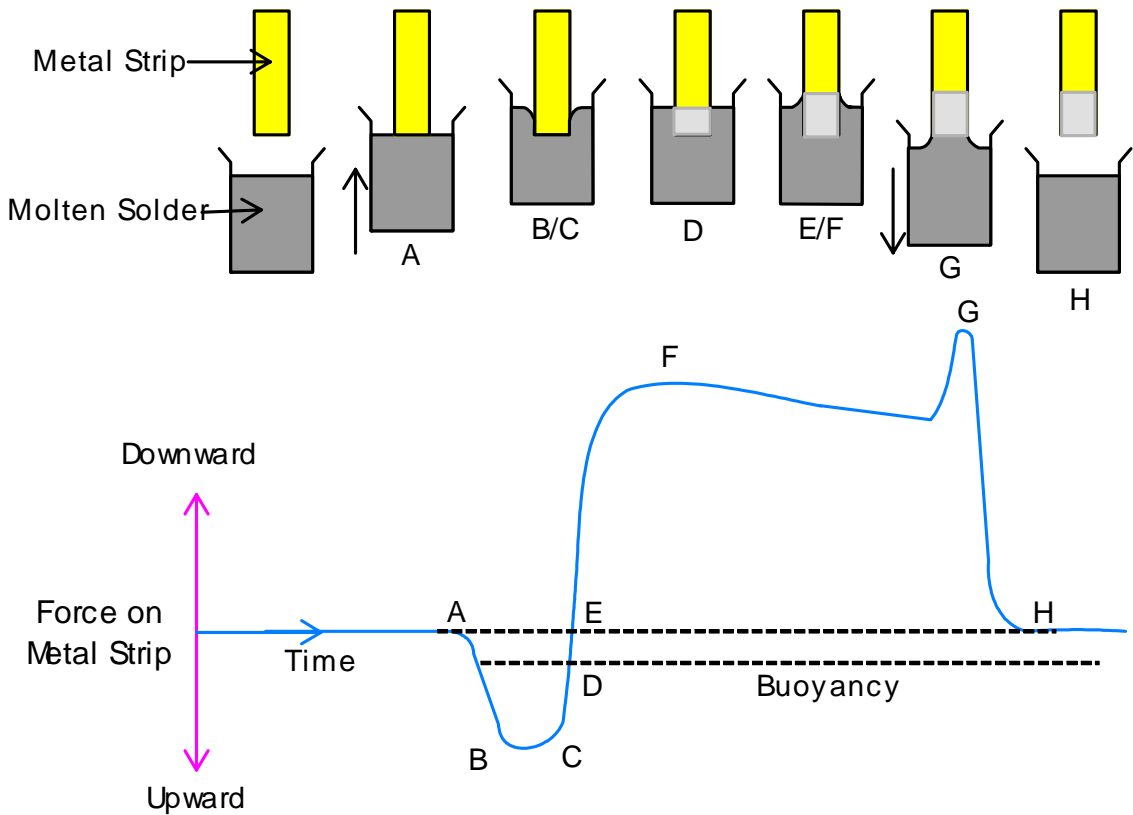


THE SOLDERABILITY TEST

SOLDERABILITY TESTER

The solderability tester measures the interfacial force between molten solder and the specimen being soldered, in essence, measuring the ability of the solder to flow on a surface. A common definition of solderability is "the ability of a metal to be wetted by molten solder". The solderability test is unique in that it permits the simultaneous evaluation of base metal, solder, and flux to determine the effect of these factors in the soldering process. Two of the factors are held constant while the third is the variable.

In the test, a fluxed metal strip specimen is held above the molten solder and connected to a load cell. The solder pot is raised to immerse the specimen to a preset depth below the solder for a set period of time. The load cell measures the weight change as solder draws up the test specimen. The weight difference is converted to wetting force by an on-line computer analysis. The solder pot then is lowered at the end of the immersion cycle, pulling the specimen out of the solder. To evaluate the results, the height of the curve within the immersion time of the solderability test dip is measured in terms of wetting force. The wetting force is a measure of the extent of solder flow. Greater solder flow will result in better soldering.





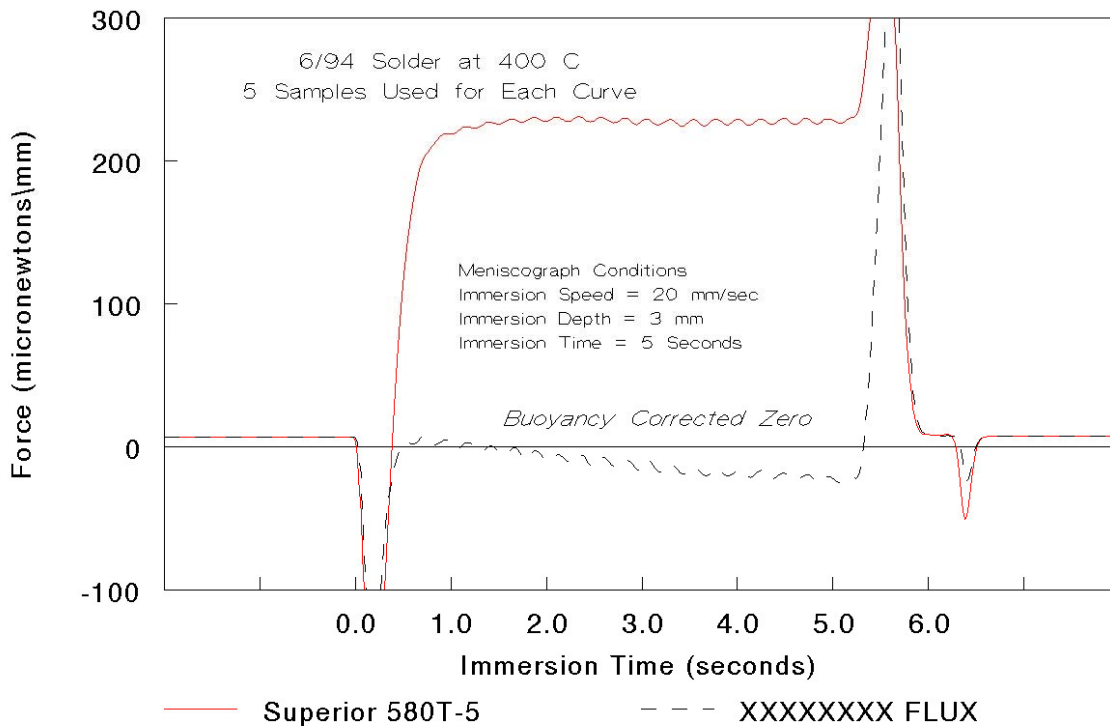
THE SOLDERABILITY TEST

FLUX COMPARISONS

The Solderability Tester can be used to compare fluxes by holding the other variables (solder, temperature, and base material) for soldering constant and changing the fluxes.

Performance problems at a heater manufacturer were shown to be related to the flux "XXXXXXXXX" when compared to the flux Superior 580T-5.

Solderability Test Superior Flux vs. XXXXXXXX Flux on Brass



CKW
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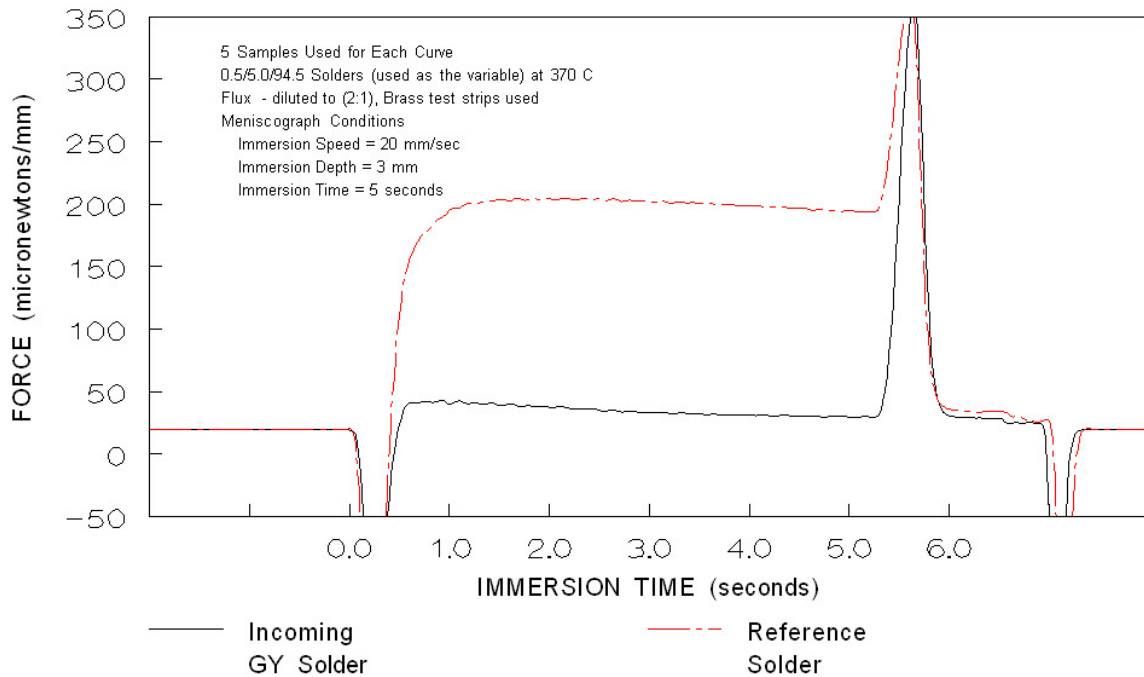
THE SOLDERABILITY TEST

SOLDER COMPARISONS

The Solderability Tester can be used to compare solders by holding the other variables (flux, temperature, and base material) for soldering constant and changing the solder.

In the example below, solder used for a radiator tube mill soldering process was found to be the culprit in failing performance. A further detailed analysis of the solder proved that the cause of the solder's poor performance was the presence of 0.1% arsenic in the solder which killed solder wetting.

Solderability Test Rejected GY Solder



WFA
02/22/91



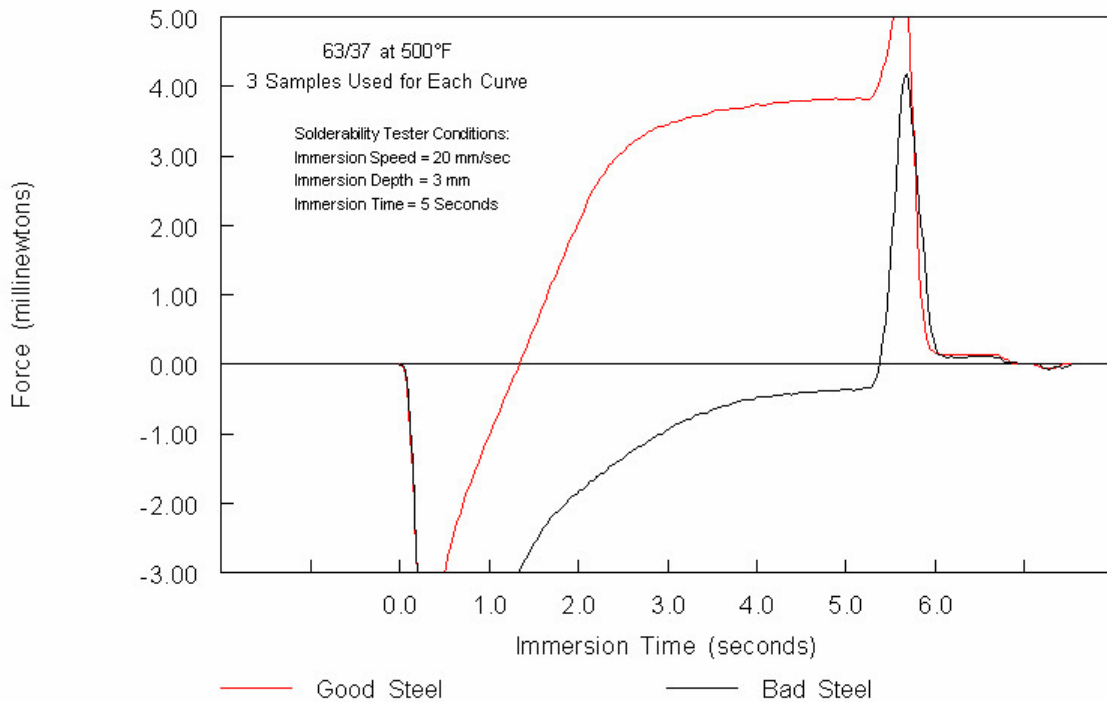
THE SOLDERABILITY TEST

MATERIAL COMPARISONS

The Solderability Tester can be used to compare base material by holding the other variables (flux, solder, and temperature) for soldering constant and changing the base material.

In the example below, a steel material that has apparent poor solderability in production was compared to good material from an earlier lot. By using the solderability tester to prove the differences the customer was able to go back to their supplier with proof that the suspect material was really poor in terms of solderability.

Solderability Test Good vs Bad Steel



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