

Application Report

Peel Testing to ASTM F-88 with the In-Spec™ 2200




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Problem Statement

Flexible medical packaging must be tested to ensure the integrity of seams and/ or welds. Failure of these joints could result in loss of sterilization, with obvious undesirable consequences. ASTM F-88 is a standard designed to ensure consistent testing of such items. This application note highlights the use of the In-Spec™ 2200 to test flexible packaging samples to ASTM F-88.

Peel Testing

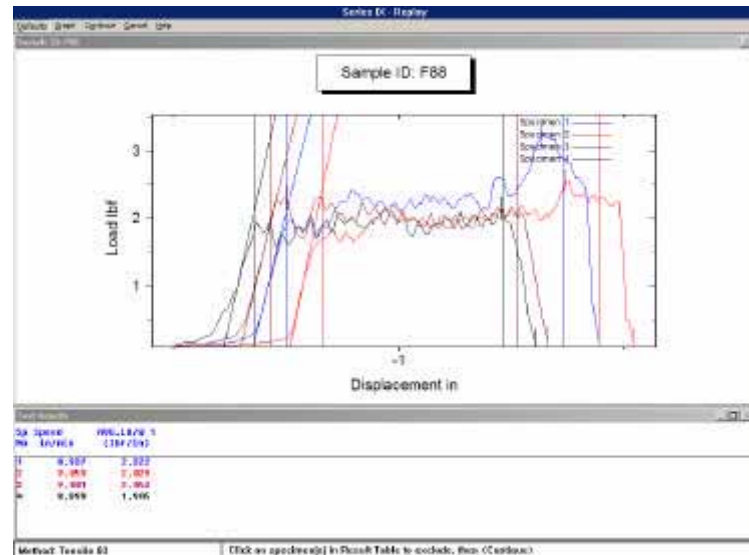
The In-Spec 2200 benchtop tester can be configured horizontally (figure 1) or vertically (figure 3) to perform peel tests at speeds up to 10 in/ min. The distance between the clamps prior to testing is typically just under two inches.

Each of the samples is cut so as to fit completely into the one inch grip faces and span the grip spacing - approximately four inches overall. The samples are typically one inch in width. For samples that contain two materials (e.g. paper and plastic), the plastic is inserted in the moving grip (towards the body of the machine).

For situations requiring a high degree of mobility, such as testing in the field, at vendor sites, or near the production line, a handheld tester is an ideal solution (figure 5).



▲ **Figure 1: Overall view of the In-Spec 2200 benchtop for ASTM F-88. Configured with laptop and Series IX™ software**



▲ **Figure 2: Series IX run-time screen with typical peel test results**

Results and Data

There are two ways to collect and analyze data with the In-Spec™ 2200: one is with a HandSpring™ Visor (figure 3), and the other is with a laptop computer with Instron®'s popular Series IX™ software (figure 1).

The Visor PDA presents a real time graph to the user, along with the ability to save the data and transfer it to Windows® Excel™ for off-line analysis. The graph in figure 4 is an example of this kind of data.

Series IX on the other hand, includes hundreds of calculations, including those required for immediate calculation of peel testing results. A typical run-time screen for peel testing is shown in figure 2. The graph shows the portion of the curve over which the load is averaged, and the numerical results are listed below the graph.

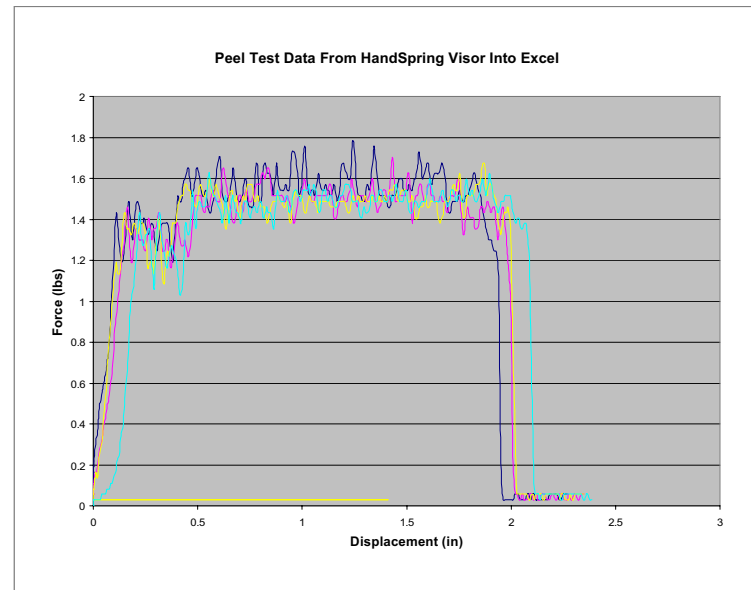
Both methods provide an automated, flexible, cost-effective and efficient way to collect and analyze the peel testing data for laboratory, on-line, or near-line quality assurance peel testing.



▲ Figure 3: In-Spec 2200 benchtop system with PDA, configured vertically



▲ Figure 5: The In-Spec 2200 handheld for applications requiring maximum mobility



▲ Figure 4: Peel test data downloaded from PDA and graphed in Excel