Comparison Chart for pull-off adhesion testers (ASTM D4541), using different pull-off instruments

Adhesion of a solvent-borne zinc-rich epoxy-primer was tested in function of its curing time. Every 12 hrs, 3 dollies were glued on (using cyano-acrylic glue) and pulled off after 1 hr. Three different adhesion testers (each 3 dollies) were used simultaneously on the same plate:

a) Elcometer 106 (Mechanical Spring-Load-type, Range 0 - 7 MPa / 0 - 1000 PSI)

b) Elcometer 106 (Mechanical Spring-Load-type, Range 0 - 14 MPa / 0 - 2000 PSI)

c) PAT Precision Adhesion Tester (Hydraulic type, Range 0 - 20 MPa / 0 - 2900 PSI)

The test-results CLEARLY indicate that adhesion-values are very much a function of the adhesion-test instrument being used!