



September 25, 2013

Via Email: dan@contegointernational.com

Mr. Danny French
Contego International, Inc.
7991 W 1400 North
Silver Lake, IN 46982-9676

SUBJECT: Results of Tensile Adhesion Testing; KTA-Tator, Inc. Project No. 330624-R1-1

Dear Mr. French:

In accordance with your email authorization dated September 19, 2013, KTA-Tator, Inc. (KTA) has performed tensile adhesion testing on one coated steel panel. This report describes the testing procedures employed and contains the results of the investigation.

SAMPLES

One unlabeled coated steel panel measuring 4" x 8" was received from Contego International, Inc. by the KTA Laboratory on September 13, 2013. This sample was designated as Sample KTA-1 by KTA. It should be noted that at no time did KTA personnel witness the preparation of the sample.

TENSILE ADHESION

Tensile adhesion was measured in accordance with ASTM D4541-09e1, "Pull-Off Strength of Coatings Using Portable Adhesion Testers," Annex A3, "Self-Alignment Adhesion Tester Type IV." The testing surface was wiped clean and abraded gently using fine sandpaper. Pull stubs with an abraded test surface were attached to the coating using a two component epoxy adhesive (Araldite 2011), which was allowed to cure for a minimum of 24 hours at ambient laboratory conditions ($70 \pm 2^\circ\text{F}$ and $50 \pm 5\%$ relative humidity). The pull-stubs were then detached using a self-alignment adhesion tester employing the F-4 piston (range: 200 – 2000 psi). The force (in psi) required to remove each pull-stub was recorded along with the location of break and approximate percentage of each. The location of break is defined as adhesive (a split between layers), cohesive (within a layer), or glue failure (coating strength exceeds glue strength). The results of the testing can be found in Table 1, "Results of Tensile Adhesion Testing."

Table 1 – Results of Tensile Adhesion Testing

Sample ID	Pull Stub ID	Pull-Off Strength (psi)	Location of Break	Average Pull-Off Strength (psi)
KTA-1	A	651.6	100% adhesive between white layers	631.1
	B	631.1	50% cohesive in white layer	
			25% adhesive between red primer and white layer	
			10% adhesive between white layers	
C	610.7	100% adhesive between white layers		

If you have any questions or comments regarding this report, please contact me by telephone at 412-788-1300, extension 239, or by email cstewart@kta.com.

Sincerely,

KTA-TATOR, INC.



Chrissy M. Stewart
Chemist

CMS/RNR:jsc
JN330624-R1-1
CIN: 301762

R1 – A revision was issued at the client’s request to change the reporting format.

(330624-R1-1 Contego.doc)

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