



TESTING  
No. 1001




Jefferson House  
5 Washington Centre  
Broadway  
Salford  
Manchester M5 2UW  
Telephone 061 876 0277  
Telex 727566  
Fax 061 876 0279

COMPARATIVE TESTING OF TWO PART

EPOXY RESIN COMPOUNDS

J. Wallace & D. Swindells

Client : E. Wood Ltd  
MIS Ref : NW 13355  
Date : 25th November 1991

*J. Wallace* 

COMPARATIVE TESTING OF TWO PART EPOXY RESIN COMPOUNDS

FROM E. WOOD LTD AND BELZONA

1. E. WOOD RESIN - THORTEX CERAMI TECH CR

This two part epoxy resin compound consists of an activator and base which had the following batch numbers.

Activator - 4621 (0.625 kg)  
Base - 5132 (2.375 kg)

Manufacturers instructions on labels of tins says to use them in the above ratio. We used 50 g of base and 13.5 g of activator for these tests.

A. Tensile Shear Adhesion Test

50.4 g of base weighed into paper cup, 13.4 g of activator weighed into another cup and then poured onto base and mixed using a palet knife.

Preparation of panels - Ten steel panels measuring 10 x 2.5 cm were sand blasted using G34 grit and then left in solvent overnight. Next day the panels were removed from solvent and dried with paper towel.

Coating of panels - An area of approximately 0.5 in<sup>2</sup> of the panel (5 panels coated) with Cerami Tech CR using a palet knife. Two panels were then pressed together (one coated) and two bulldog clips held them together overnight. Bulldog clips removed next day. Pair of samples labelled Cerami Tech CR Shear Adhesion No 1-5.

B. Taber Abrasion Test

Preparation of panels - Same as for tensile shear adhesion except 50.1 g of base and 13.5 g of activator used. Again steel panels used but this time they were approximately 10x 10 cm.

Coating of panels - The steel panel was placed onto a polypropylene sheet, drawn around in pencil. Plate removed and area inside square coated using a palet knife. Panel (grit blasted) was placed over square and pressed down using plastic film and a weight put on top.

C. Intercoat Adhesion Test

Prepared same as before except 50.1 g of base and 13.6 g of activator used.

Steel plate (grit blasted 26.5 x 43 cm used for this test.

Half the plate was coated with Cerami Tech CR using a paintbrush.

2. BELZONA RESIN - SUPERGLIDE

This two part epoxy resin compound consisted of a base and a solidifier which had the following batch numbers.

Solidifier - 28976G1 4/91  
Base - 29084GI 3/91

Manufacturers instructions - 100 g of base, 70 g of solidifier.

We used 50 g base and 35 g of solidifier.

A. Tensile Shear Adhesion Test

50.7 g of base, 35.7 g of solidifier

Same as for E. Wood samples

B. Taber Abrasion Test

Same mixture used for this as for tensile shear adhesion above.

Same as for E. Wood samples

C. Intercoat Adhesion Test

Same mixture used for this as for Tensile & Taber tests above. same method as for E. Wood samples.

NEXT DAY

Two more Taber Abrasion panels coated exactly the same as before except:

For Cerami Tech CR 100.2 g of base and 27.6 g of activator used  
For Belzona 50.2 g of base and 35.3 g of solidifier used.

The above two mixtures were used for applying another coat to the intercoat adhesion test panels. The same method as before was used except this time 5 aluminium dies were placed onto the new coat of resin and pressed down. The dies had been grit blasted with G34 grit.

E.Wood & Belzona

Tensile shear adhesion test results

( Rate of applied load = 3.5KN per minute )

BELZONA SUPERGLIDE

Sample No	Width cm	Overlap cm	Shear area cm <sup>2</sup>	Failing load (KN)	Failing load Kg/cm <sup>2</sup>	% Adhesive failure
1	2.59	1.49	3.86	8.12	214.5	30-40
2	2.59	1.54	3.99	8.48	216.7	30-40
3	2.59	1.50	3.89	8.64	226.5	10-20
4	2.59	1.63	4.22	8.68	209.7	50-60
5	2.59	1.61	4.17	8.08	197.6	10-20

Average = 213.0 kg/cm<sup>2</sup>

CERAMI - TECH CR

Sample No	Width cm	Overlap cm	Shear area cm <sup>2</sup>	Failing load (KN)	Failing load Kg/cm <sup>2</sup>	% Adhesive failure
1	2.58	1.56	4.02	8.05	204.2	40-50
2	2.57	1.61	4.14	8.52	209.8	50-60
3	2.58	1.73	4.46	7.88	180.2	50-60
4	2.59	1.38	3.57	7.15	204.2	30-40
5	2.58	1.39	3.57	7.96	227.4	30-40

Average = 205.2 kg/cm<sup>2</sup>

E. WOOD & BELZONA

TABER ABRASION RESULTS

Sample ID	Weight loss per 1000 turns (1000 g load)
Thorex Cerami Tech CR	783 mg
Belzona Superglide	780 mg

E.Wood & Belzona

Pull Off Test Results

Thortex Cerami Tech CR

Sample No	Pull off load Kg/cm <sup>2</sup>
1	70
2	80
3	80
4	80
5	75

Average = 77 Kg/cm<sup>2</sup>

Belzona Superglide

Sample No	Pull off load Kg/cm
1	60
2	50
3	50
4	60
5	60

Average = 56 Kg/cm<sup>2</sup>