

# Effect of cure profile on adhesion and Vr for CE3103WLV

Sharona Sente, Cindy Doumen  
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## ECCOBOND CE3103WLV cure profile

- ECCOBOND CE3103WLV is curable:
  - 3min @150°C (TDS cure)
  - 20min @ 110°C
  - 40min@ 90°C
  - 70min @ 80°C

# ECCOBOND CE3103WLV - Die shear strength

- ❖ Products: ECCOBOND CE3103WLV
- ❖ Cure: 10min@150°C/ 35min@110°C/ 120min@90°C
- ❖ Test: die shear test with DAGE Series 4000 Bondtester
- ❖ Measurement: die shear strength of the materials was measured.
- ❖ Method/set up parameters:
  - Die: 80 \* 80 mil Si die
  - Substrate: Ag/Cu LF
  - Test speed: 350 um/s

- Test temp: RT
- Test load: 100kg cartridge
- Shear height: 0.0 um

10min @150°C		35min @110°C		120min @90°C	
TestNr	Force (kg)	TestNr	Force (kg)	TestNr	Force (kg)
1	12,8	1	11,93	1	11,63
2	12,1	2	11,05	2	7,43
3	13,81	3	12,81	3	8,63
4	11,71	4	9,33	4	8,58
5	15,19	5	11,55	5	11,2
6	11,37	6	9,15	6	11,15
7	9,21	7	10,59	7	12,19
8	13,68	8	10,76	8	9,61
9	16,29	9	11,98	9	12,69
10	15,8	10	9,81	10	7,99
11	13,28	11	9,78	11	7,67
12	11,93	12	8,41	12	7,14
13	14,29	13	10,99	13	8,06
14	13,19	14	10,64	14	10,44
15	14,96	15	11,77	15	7,55
16	8,04	16	11,45	16	9,25
17	5,99	17	10,73	17	9,26
		18	10,76		
Mean	12,57	19	9,11	Mean	9,44
StDv	2,8			StDv	1,8
		Mean	10,66		
		StDv	1,2		

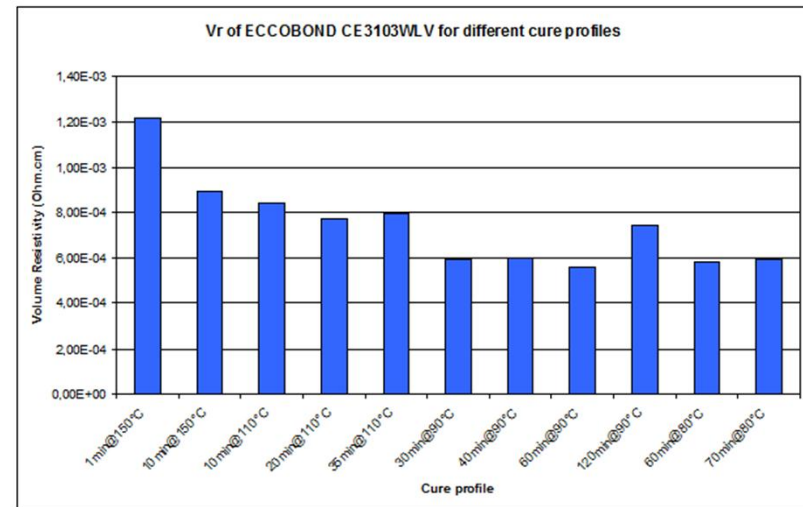
- Die shear strength remains more or less the same for the tested cure schedules.
- A cohesive failure was observed for this ECA.
- Cure at lower temperatures is possible but this increases the cure time considerably if good adhesion needs to be obtained.



# ECCOBOND CE3103WLV – Volume resistivity

- ❖ Product: ECCOBOND CE3103WLV
- ❖ Cure: different cure profiles
- ❖ Testdevice: Fluke Auto 2wire
- ❖ Measurement: Volume resistivity at different cure profiles

	Width (mm)	Thickness (mm)	Resistance (Ohm)	Volume Resistivity (Ohm.cm)	Average (Ohm.cm)
<b>Cure: 1min@150°C</b>					
	6.03	0.09	1.07	1.08E-03	
	5.90	0.10	1.28	1.35E-03	
	6.51	0.09	1.10	1.23E-03	1.22E-03
<b>Cure: 10min@150°C</b>					
	5.57	0.09	1.09	9.85E-04	
	5.48	0.10	0.98	9.74E-04	
	5.16	0.10	0.99	9.46E-04	
	4.93	0.08	1.13	8.64E-04	
	4.73	0.09	1.12	8.66E-04	
	5.79	0.08	0.82	7.21E-04	8.93E-04
<b>Cure: 10min@110°C</b>					
	7.21	0.08	0.82	8.32E-04	
	5.80	0.09	0.96	8.97E-04	
	6.43	0.09	0.78	7.99E-04	8.42E-04
<b>Cure: 20min@110°C</b>					
	6.36	0.09	0.79	8.00E-04	
	5.25	0.07	0.98	7.05E-04	
	5.84	0.09	0.89	8.19E-04	7.75E-04
<b>Cure: 30min@90°C</b>					
	6.22	0.08	0.62	5.92E-04	
	6.81	0.08	0.62	6.12E-04	
	6.53	0.08	0.63	5.72E-04	5.92E-04
<b>Cure: 40min@90°C</b>					
	6.01	0.09	0.63	6.59E-04	
	5.19	0.09	0.67	5.60E-04	
	5.28	0.10	0.60	5.77E-04	5.99E-04
<b>Cure: 60min@90°C</b>					
	6.03	0.08	0.67	6.01E-04	
	6.85	0.07	0.65	5.41E-04	
	6.50	0.07	0.67	5.48E-04	5.63E-04
<b>Cure: 60min@80°C</b>					
	4.67	0.09	0.81	6.02E-04	
	5.28	0.07	0.81	5.86E-04	
	4.86	0.07	0.84	5.61E-04	5.83E-04
<b>Cure: 70min@80°C</b>					
	5.50	0.10	0.61	5.98E-04	
	5.57	0.08	0.63	5.45E-04	
	5.39	0.10	0.66	6.38E-04	5.94E-04



- Except for the 1min@150°C cure, volume resistivity performance of ECCOBOND CE3103WLV remains more or less constant at lower curing profiles. The material has a good conductivity in the 10-3/10-4 Ohm.cm range

