

## 12.0 Appendix. Single-Lap-Joint Mechanical Testing Check List

Sample ID's: 20150483 , 20150484 , 20150485 , 20150486 , 20150487Test date: 7/14/15 Test temperature: 23.8°C Test humidity 54%Testing facility and operator: msTest frame model and serial number: Instron 1123 SN: 5054Test frame calibration date: 9/10/14Load cell model and serial number: SN: 028

Load cell calibration date: \_\_\_\_\_

Crosshead speed: 1.3 mm/min (0.05 in/min), list other 1.27 mm/min

Nature of failure and other comments:

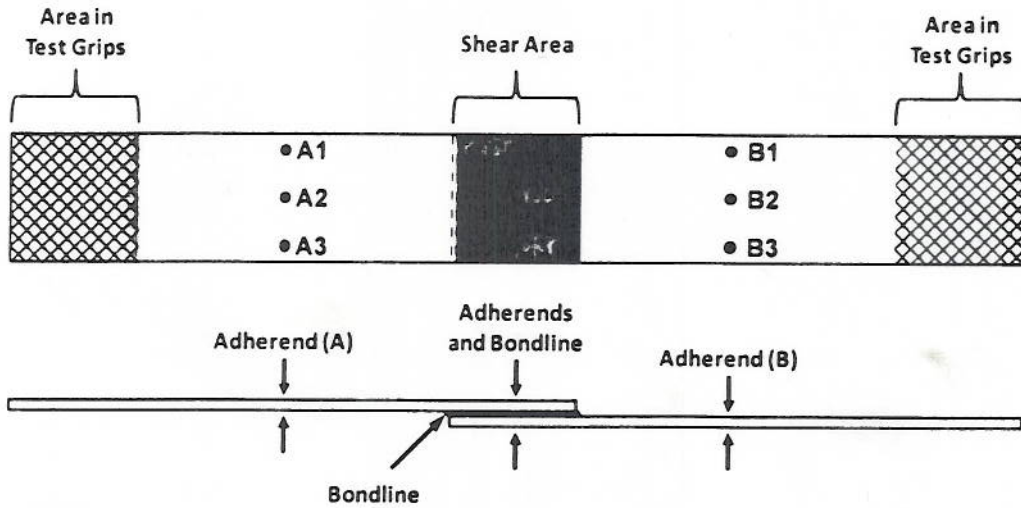
## 11.0 Appendix. Single-Lap-Joint Fabrication Check List

Sample ID's: 20150483, 20150484, 20150485, 20150486, 20150487Date: 6/25/15 @1630 Temperature: 74.1°F Humidity 52.9%Testing facility and operator: MSDAdhesive, type, and form: SciGrip SC7805Lot ID, manufacturer's code, expiration date: EX805A Lot: NC14H-007EX805B BLOCK Lot: NC14H-008 Date of Mfg: 8/27/2014Method of cleaning and preparing bonding surface: acetone wipe, 3M scotch brite  
(04801-D5530, A VFN, lot #: MD4D0205-4304), grit blast (60 grit Al<sub>2</sub>O<sub>3</sub>), N<sub>2</sub> blow off4000:14-JLS-035A (filled 11-13-14)dip 2 min, 30 sec DI rinse, N<sub>2</sub> blow off

## Adhesive preparation, application, and bonding conditions:

Two-component, 490 mL cartridge 10:1 mix ratio dispensed using  
Mixpac type DP 400-100 No. 2008-07153Tooling fixture and bonding pressure notes: aluminum fixture w/ 3 steel weightsAdhesive mixing to applied pressure time: <5 minsCure cycle: 91.5 hrs @ RTOven used (model and serial number): Thermo <sup>S/N</sup> 699020978 Model: 130DConditioning procedure: placed in test tube of DI water in oven @ 63°C for 14 daysComments: 1010 mild steelX-Bond 4000not wet

### 13.0 Appendix. Bondline Thickness Measurements



Aluminum grade: \_\_\_\_\_ Mfg. nominal thickness: \_\_\_\_\_ (mm – in)

Micrometer model, serial number, calibration date \_\_\_\_\_

Measurement units (circle) – mm or in

Sample ID	Adherend (A1)	Adherend (A2)	Adherend (A3)	Average (A)
20150483	.0613	.0613	.0612	.06127
Comments	Adherend (B1)	Adherend (B2)	Adherend (B3)	Average (B)
	.0621	.0621	.0619	.06203
	Adherends and Bondline (C1)	Adherends and Bondline (C2)	Adherends and Bondline (C3)	Average (C)
	.1524	.1511	.1504	.1513
				C – (A + B)
	Average bondline thickness			.02800

.06165

Sample ID	Adherend (A1)	Adherend (A2)	Adherend (A3)	Average (A)
20150484	.0613	.0613	.0612	.06127
Comments	Adherend (B1)	Adherend (B2)	Adherend (B3)	Average (B)
	.0621	.0619	.0619	.06203
	Adherends and Bondline (C1)	Adherends and Bondline (C2)	Adherends and Bondline (C3)	Average (C)
	.1527	.1519	.1525	.15237
				C - (A + B)
	Average bondline thickness			.02907

.06165

.06155

Sample ID	Adherend (A1)	Adherend (A2)	Adherend (A3)	Average (A)
26150485	.0615	.0613	.0610	.06127
Comments	Adherend (B1)	Adherend (B2)	Adherend (B3)	Average (B)
	.0619	.0619	.0618	.06183
	Adherends and Bondline (C1)	Adherends and Bondline (C2)	Adherends and Bondline (C3)	Average (C)
	.1535	.1530	.1527	.15307
				C - (A + B)
	Average bondline thickness			.02997



Sample ID	Adherend (A1)	Adherend (A2)	Adherend (A3)	Average (A)
20150486	.0611	.0611	.0611	.0611
Comments	Adherend (B1)	Adherend (B2)	Adherend (B3)	Average (B)
	.0618	.0619	.0619	.06187
	Adherends and Bondline (C1)	Adherends and Bondline (C2)	Adherends and Bondline (C3)	Average (C)
	.1575	.1575	.1573	.15743
				C - (A + B)
	Average bondline thickness			.02846

.06149

Sample ID	Adherend (A1)	Adherend (A2)	Adherend (A3)	Average (A)
20150487	.0613	.0613	.0618	.06147
Comments	Adherend (B1)	Adherend (B2)	Adherend (B3)	Average (B)
	.0618	.0619	.0620	.0619
	Adherends and Bondline (C1)	Adherends and Bondline (C2)	Adherends and Bondline (C3)	Average (C)
	.1574	.1507	.1505	.15087
				C - (A + B)
Average bondline thickness			.02750	

.06169