

**Specimen #:** L1-05

**Measurements:**

SHM Technique	Measurement	Interval	Time of measure	Measuring rate
AE	Yes	Continuous	-	-
FBG	Yes	500	Continuous during QS	100 Hz
ODiSi B	Yes	500	Valley and peak	
Guided waves	Yes	5000	At 0 mm	
DIC	Yes	500	Continuous during QS	1 image / 2 sec
Monitor camera	Yes	500	Peak only	

**Applied loads:**

# of cycles	Min load	Max load	Frequency	Measurement interval	Comments
Impact	10 Joules				Location on stiffener (left stiffener). 5 cm from left edge x 8 cm from top
144969	-6.5 kN	-65 kN	2 Hz	500 / 000 cycles with hold of 1 sec	80800 cycles noted that PZT sensor 8 is broken

- 1 manual PZT recording performed after specimen failure, but considering sensor failure, these measurements might not be useful.
- PZT sensor 8 was noted to have failed at 80,800 cycles.

**Acoustic emission:**

Wave-velocity longitudinal (along stiffener): 6329.11 m/s

Wave-velocity lateral (through stiffener): 4212.45 m/s

Sensor #	X-location [mm]	Y-location [mm]
1	145	190
2	145	20
3	20	50
4	20	220

\* as seen from skin-side (from bottom left)

**ODiSi-B location:**

Sensor #	Location	Sensor start [mm]	Sensor end [mm]	Start location	End location
1	Left foot	4455	4650	Bottom	Top
2	Right foot	1060	1265	Top	Bottom

\*location as seen from stiffener side

FBG location:

Channel 1: Left foot from top

Channel 2: Right foot from bottom (top side does not work)

**Fatigue machine measurements:**

10 V = 100 kN

10 V = 7.5 mm

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	Skin length		Tab length	
	Left [mm]	Right [mm]	Top [mm]	Bottom [mm]
Without tabs	242	241	Left: 29	Left: 29
With tabs	300	300	Right: 30	Right: 29

Skin width		
Top [mm]	Middle [mm]	Bottom [mm]
165.5	165.5	165.5

Skin thickness					
Top-left [mm]	Middle-left [mm]	Bottom-left [mm]	Top-right [mm]	Middle-right [mm]	Bottom-right [mm]
1.83	1.81	1.81	1.83	1.83	1.83

Stiffener thickness			Stiffener length	
Top [mm]	Middle [mm]	Bottom [mm]	Left [mm]	Right [mm]
2.45	2.47	2.42	241	241.5