

Specimen #: L1-09

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 / 2.5 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 (centre). 8.25 from edge x 10 cm from top right
133281	-6.5 kN	-65 kN	2 Hz	500 / 5000 cycles with hold of 1 sec	

- 1 manual PZT recording performed after specimen failure, but considering sensor failure, these measurements might not be useful.

Acoustic emission:

Wave-velocity longitudinal (along stiffener): 6321.07 m/s

Wave-velocity lateral (through stiffener): 3857.79 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	2580	2780	Bottom	Top
2	Right foot	570	785	Top	Bottom

*location as seen from stiffener side

FBG location:

Channel 1: Left foot from bottom

Channel 2: Right foot from bottom

Smartape is same smartape as the one used in L1-21.

Fatigue machine measurements:

10 V = 100 kN

10 V = 7.5 mm

Specimen #: L1-09

	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