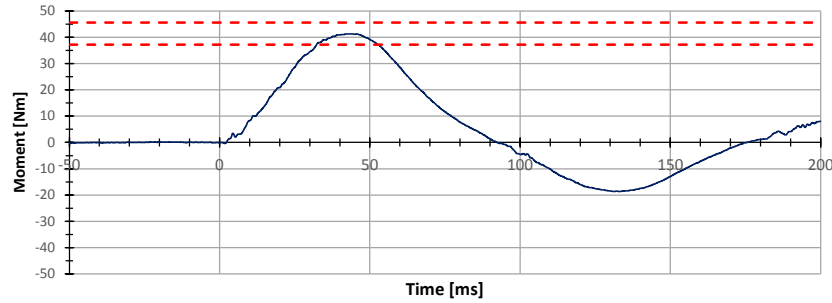


THOR 50th Neck Torsion Left Test  
 Test Date: 2020/07/16

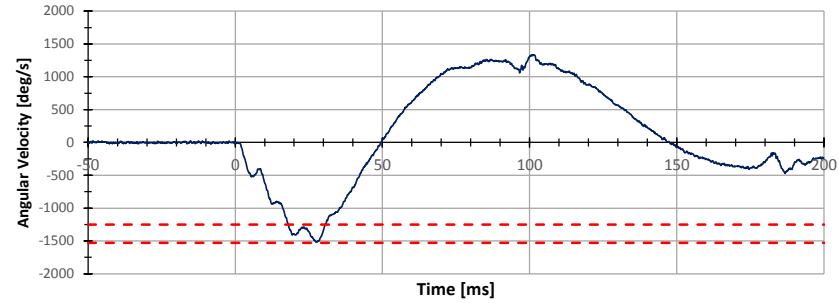
Test Parameter	min	Max	Unit	Result	Pass/Fail
Temperature	20.6	22.2	°C	21.4	Pass
Humidity	10	70	%	50.0	Pass
Impact Velocity	4.95	5.05	m/s	5.00	Pass
Peak Upper Neck Mz	37.3	45.6	Nm	41.3	Pass
Peak Neck Fixture Rotation	-52.7	-43.1	deg	-51.3	Pass
First Peak Upper Neck Angular Velocity $\omega_z$ (relative to earth)	-1529	-1251	deg/s	-1517	Pass

Test Parameter	min	Max	Unit	Result	Pass/Fail
Pendulum velocity at 10ms	1.71	2.09	m/s	1.90	Pass
Pendulum velocity at 15ms	2.57	3.14	m/s	2.91	Pass
Pendulum velocity at 20ms	3.46	4.23	m/s	3.90	Pass
Pendulum velocity at 25ms	4.27	5.22	m/s	4.80	Pass

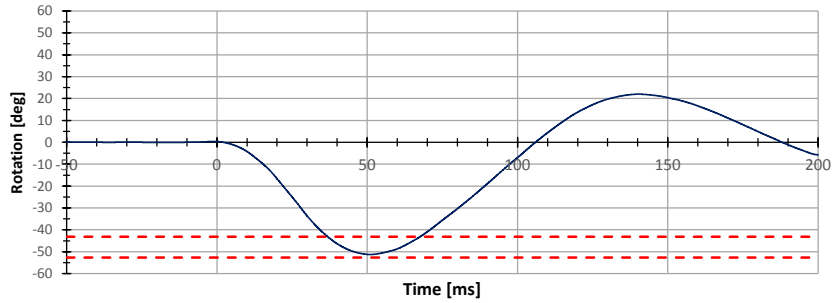
Upper Neck Moment Z-axis



Upper Neck Angular Velocity



Neck Fixture Rotation



Pendulum Velocity Change

