

Simulation of Fully extended LM-14-8-FM-500LB tests

Date: Friday, November 07, 2014
Designer: Christopher Thauer
Study name: 75 mph
Analysis type: Static

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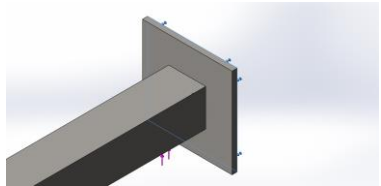
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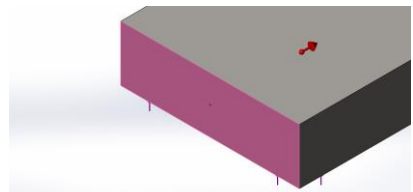
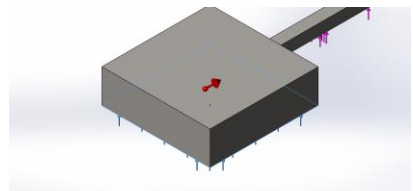
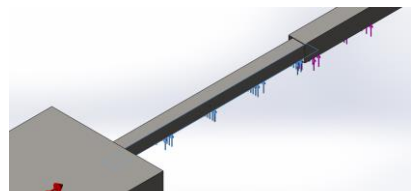
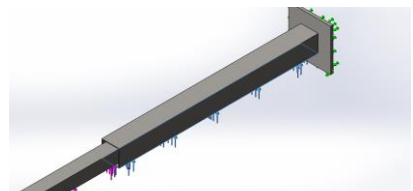
Description

The results of a 75 mph wind force on the fully LM-14-8-FM-500LB light mast.



Loads and Fixtures

Fixture name	Fixture Image	Fixture Details		
Fixed-1		Entities: 1 face(s) Type: Fixed Geometry		
Resultant Forces				
Components	X	Y	Z	Resultant
Reaction force(N)	-6.53125	-2943.62	45577.5	45672.5
Reaction Moment(N·m)	0	0	0	0

Load name	Load Image	Load Details
Gravity-1		Reference: Face< 1 > Values: 0 0 -9.81 Units: SI
Force-1		Entities: 1 face(s) Type: Apply normal force Value: 460.8 lbf
Force-2		Entities: 1 face(s) Type: Apply normal force Value: 88 lbf
Force-3		Entities: 1 face(s) Type: Apply normal force Value: 112 lbf

Resultant Forces

Reaction Forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	-6.53125	-2943.62	45577.5	45672.5

Reaction Moments

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N·m	0	0	0	0

Beams

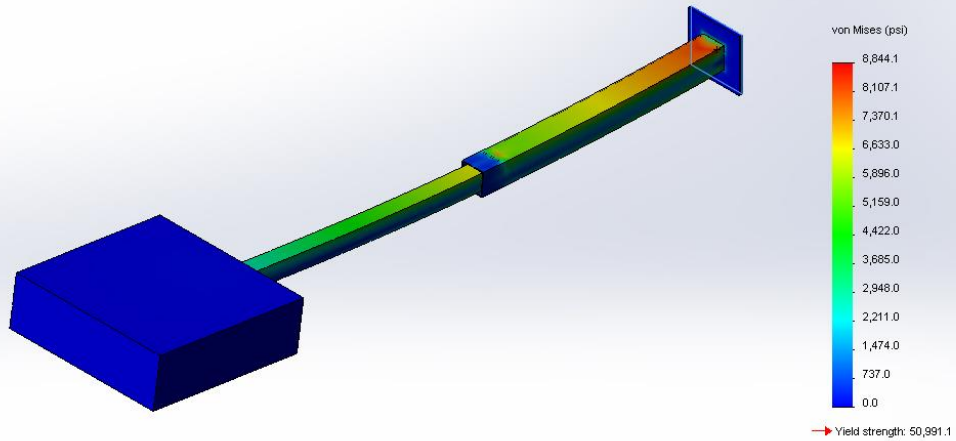
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Study Results

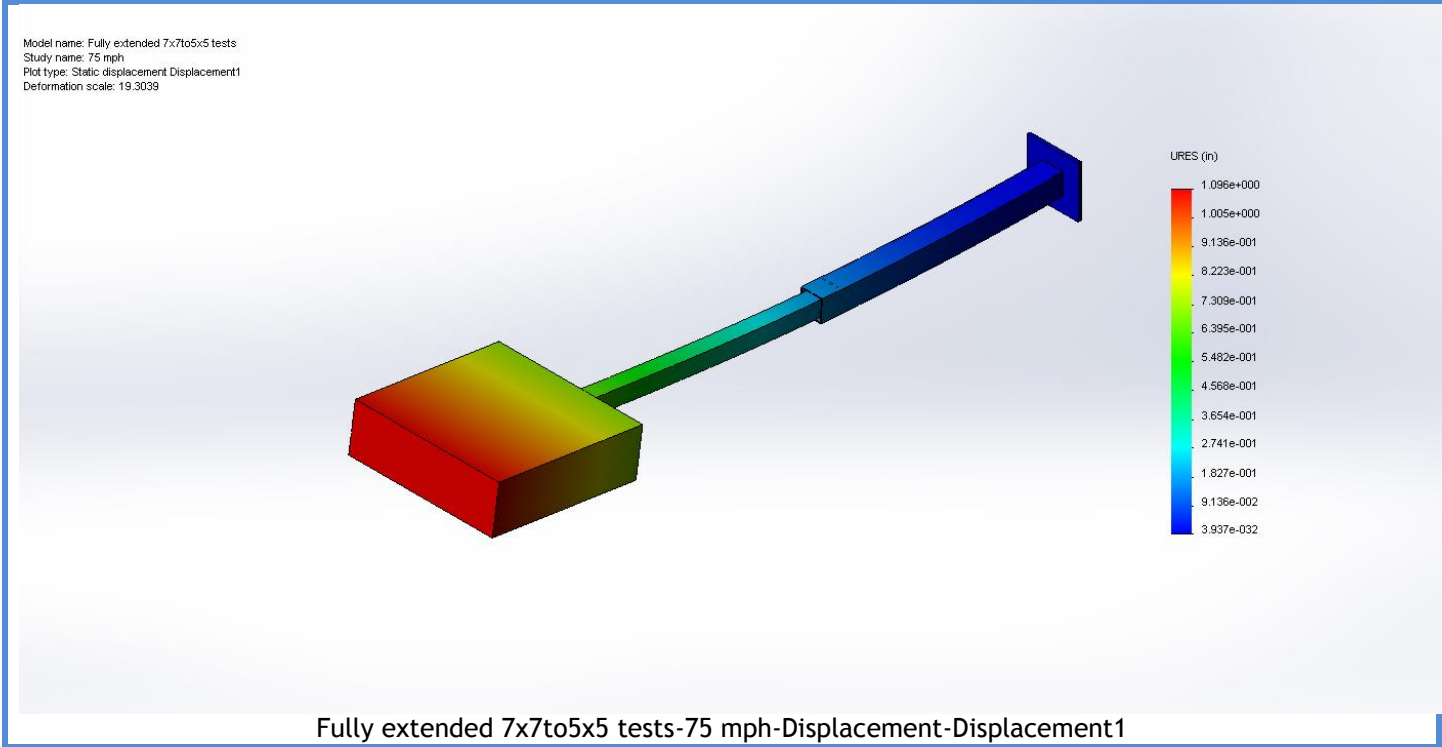
Name	Type	Min	Max
Stress1	VON: von Mises Stress	0.0181936 psi Node: 9834	8844.06 psi Node: 12953

Model name: Fully extended 7x7to5x5 tests
Study name: 75 mph
Plot type: Static nodal stress Stress1
Deformation scale: 19.3039

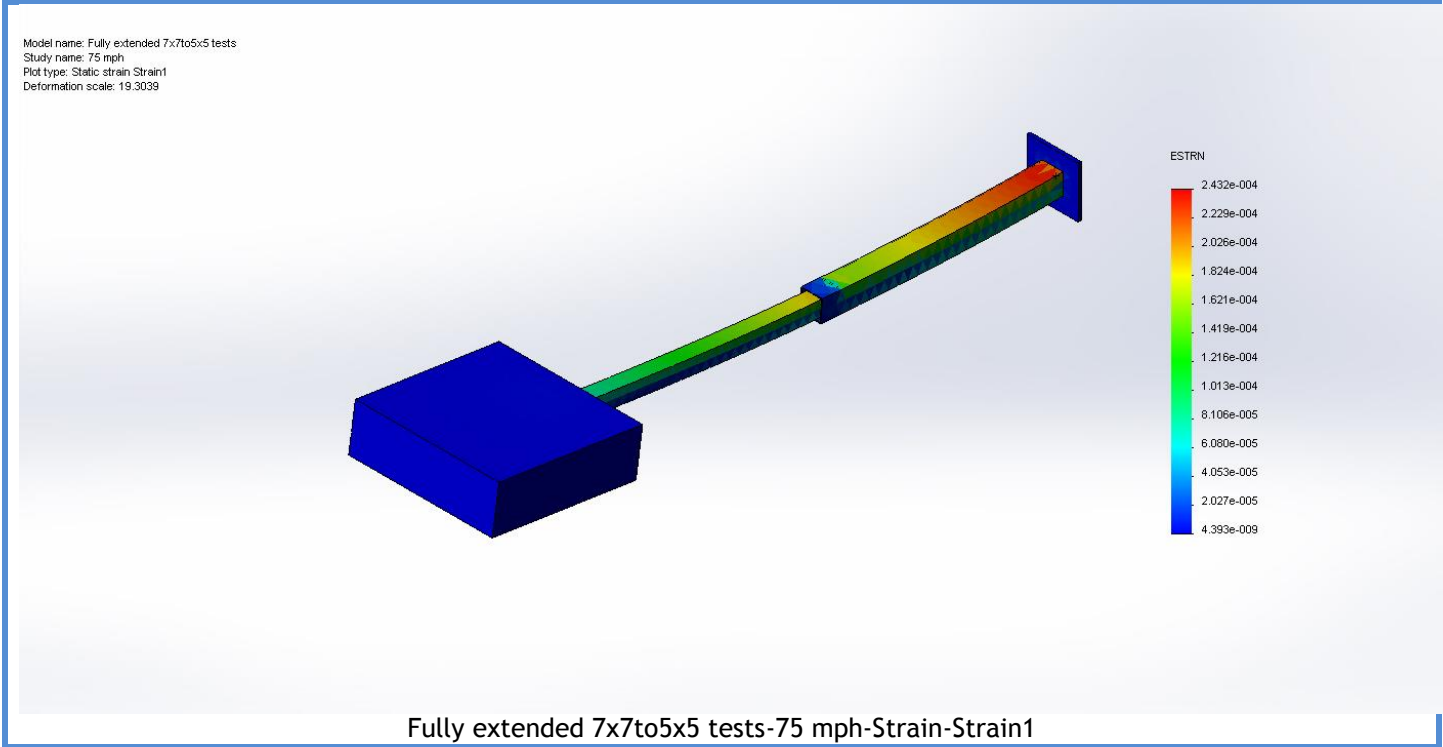


Fully extended 7x7to5x5 tests-75 mph-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0 in Node: 13449	1.09635 in Node: 2497

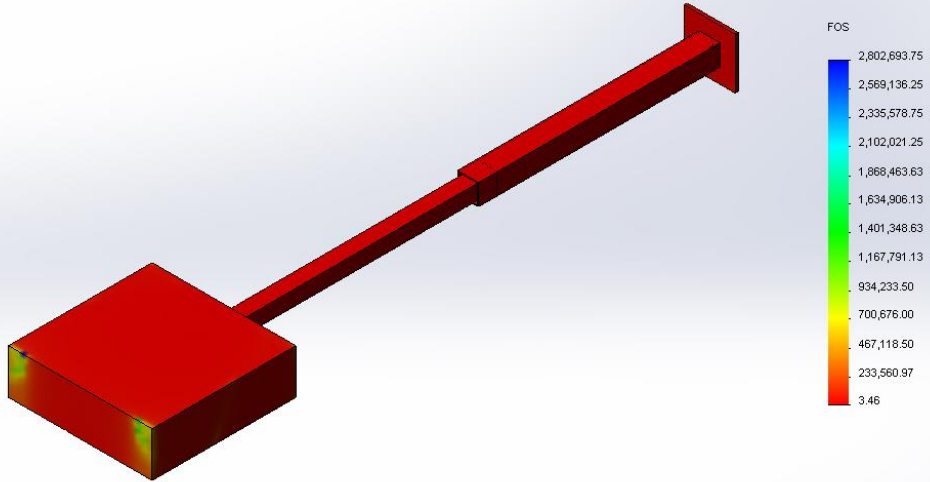


Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	4.39312e-009 Element: 3274	0.000243175 Element: 8063

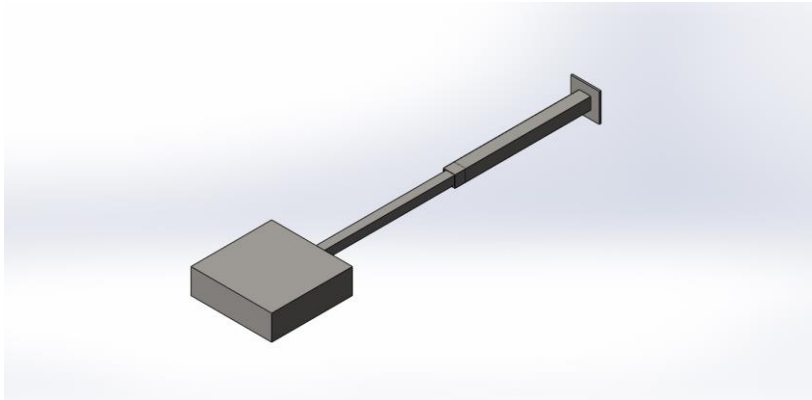


Name	Type	Min	Max
Factor of Safety1	Automatic	3.45734 Node: 1903	2.80269e+006 Node: 9834

Model name: Fully extended 7x7to5x5 tests
Study name: 75 mph
Plot type: Factor of Safety Factor of Safety1
Criterion: Automatic
Factor of safety distribution: Min FOS = 3.5



Fully extended 7x7to5x5 tests-75 mph-Factor of Safety-Factor of Safety1



Simulation of a fully extended LM-14-8-FM-500LB light mast.

Date: Friday, November 07, 2014
Designer: Christopher Thauer
Study name: 125 mph
Analysis type: Static

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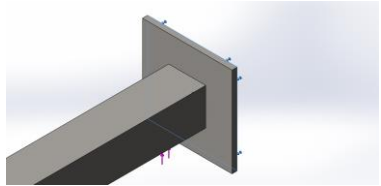
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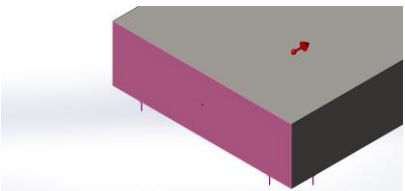
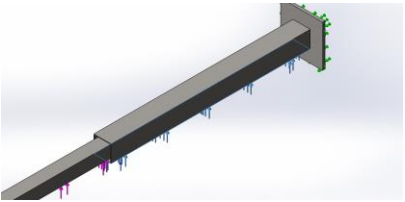
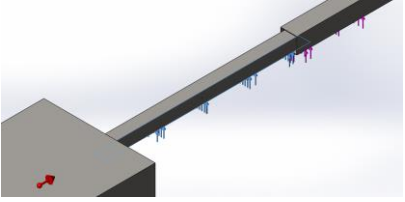
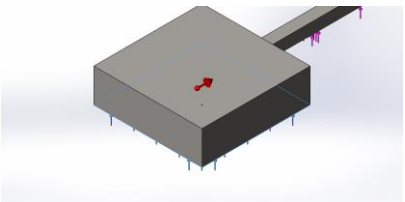
Description

The results of a 125 mph wind force on a fully extended LM-14-8-FM-500LB light mast.



Loads and Fixtures

Fixture name	Fixture Image	Fixture Details		
Fixed-2		Entities: 1 face(s) Type: Fixed Geometry		
Resultant Forces				
Components	X	Y	Z	Resultant
Reaction force(N)	11.0315	-8152.27	45551.1	46274.8
Reaction Moment(N·m)	0	0	0	0

Load name	Load Image	Load Details
Gravity-1		Reference: Face< 1 > Values: 0 0 -9.81 Units: SI
Force-1		Entities: 1 face(s) Type: Apply normal force Value: 311.11 lbf
Force-2		Entities: 1 face(s) Type: Apply normal force Value: 244.44 lbf
Force-3		Entities: 1 face(s) Type: Apply normal force Value: 1280 lbf

Resultant Forces

Reaction Forces

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N	11.0315	-8152.27	45551.1	46274.8

Reaction Moments

Selection set	Units	Sum X	Sum Y	Sum Z	Resultant
Entire Model	N·m	0	0	0	0

Beams

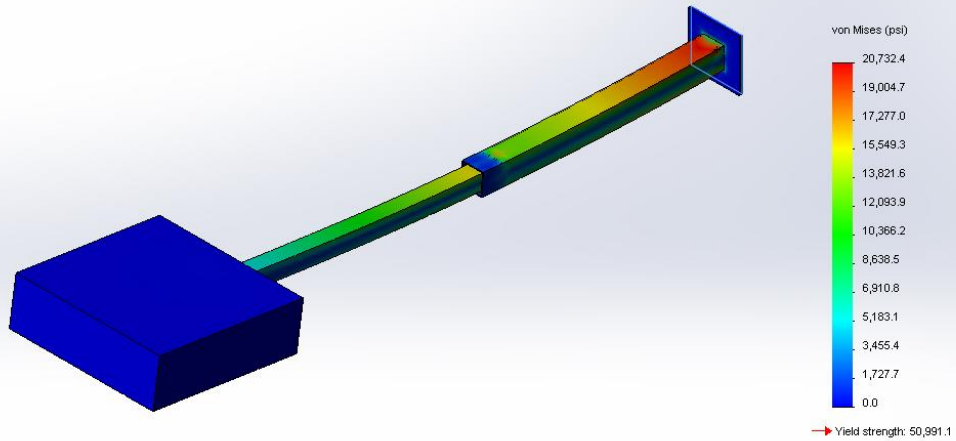
No Data



Study Results

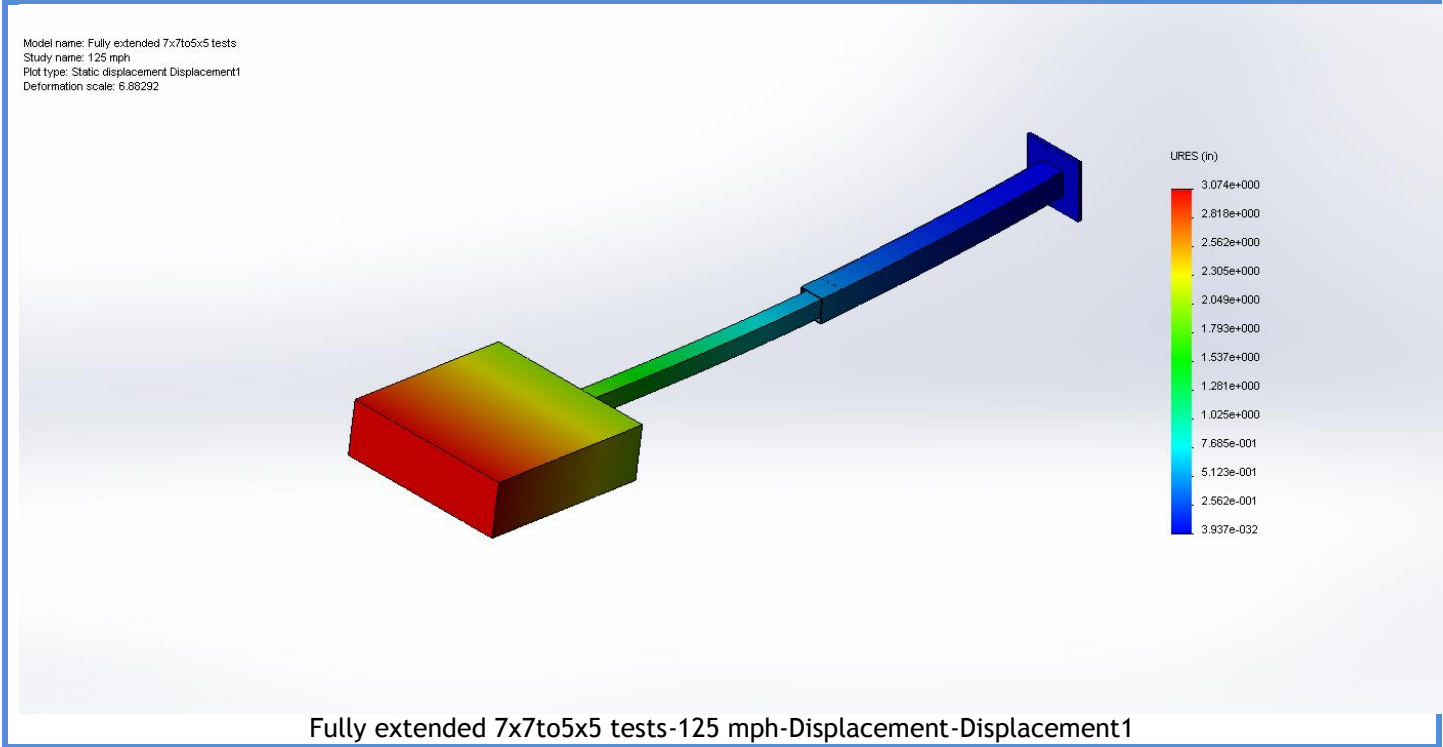
Name	Type	Min	Max
Stress1	VON: von Mises Stress	0.0248606 psi Node: 9834	20732.4 psi Node: 13390

Model name: Fully extended 7x7to5x5 tests
Study name: 125 mph
Plot type: Static nodal stress Stress1
Deformation scale: 6.88292

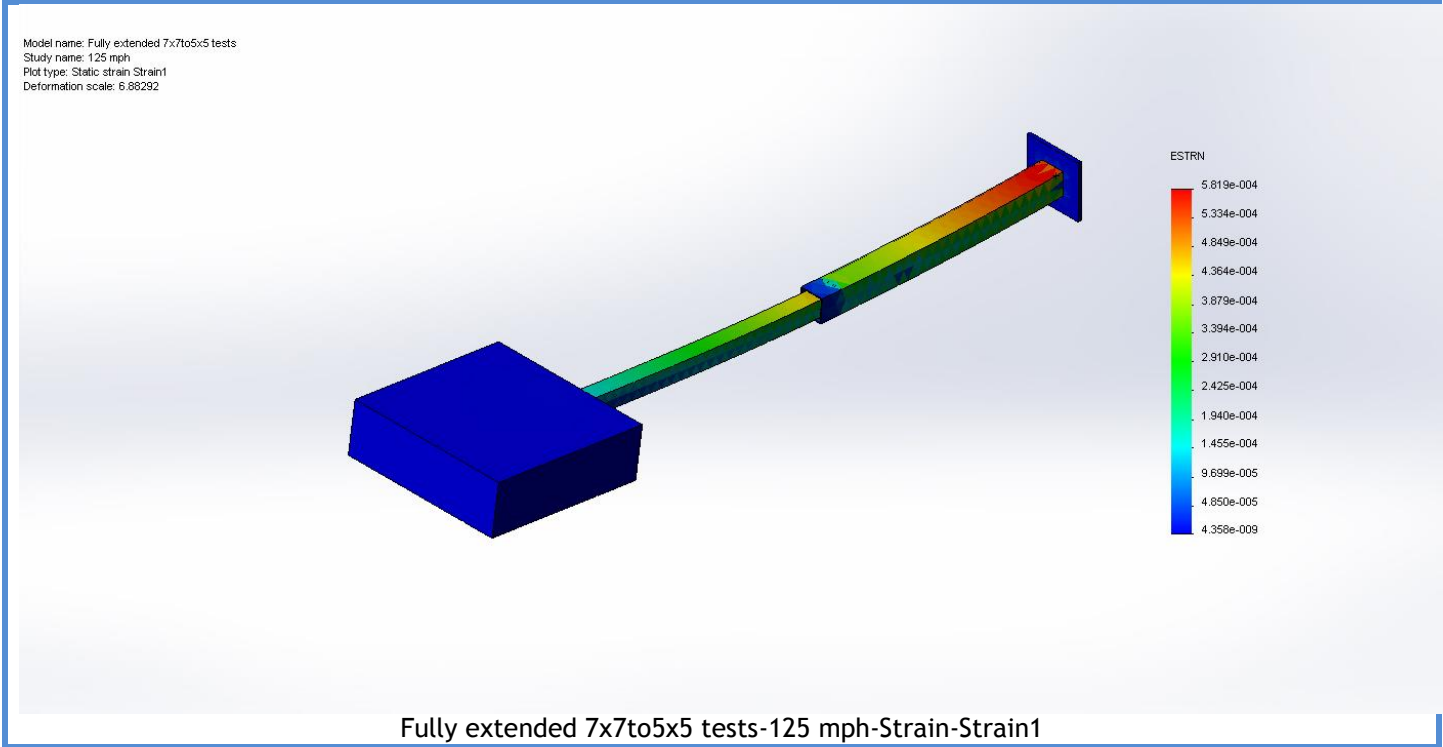


Fully extended 7x7to5x5 tests-125 mph-Stress-Stress1

Name	Type	Min	Max
Displacement1	URES: Resultant Displacement	0 in Node: 13449	3.07397 in Node: 2205

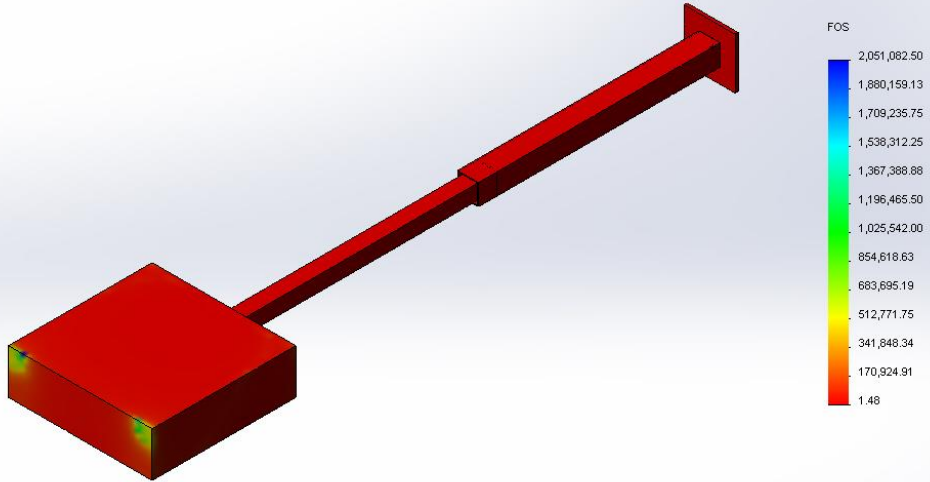


Name	Type	Min	Max
Strain1	ESTRN: Equivalent Strain	4.35789e-009 Element: 3274	0.000581898 Element: 9220



Name	Type	Min	Max
Factor of Safety1	Automatic	1.48441 Node: 1903	2.05108e+006 Node: 9834

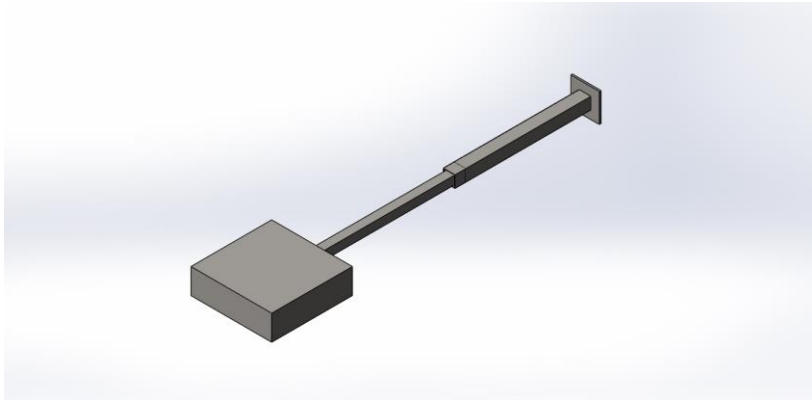
Model name: Fully extended 7x7to5x5 tests
Study name: 125 mph
Plot type: Factor of Safety Factor of Safety1
Criterion: Automatic
Factor of safety distribution: Min FOS = 1.5



Fully extended 7x7to5x5 tests-125 mph-Factor of Safety-Factor of Safety1



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Simulation of Fully extended LM-14-8-FM-500LB tests

Date: Friday, November 07, 2014
Designer: Christopher Thauer
Study name: Fatigue
Analysis type: Fatigue(Constant Amplitude)

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Description

Fatigue report for 125 mph wind force on the LM-14-8-FM-500LB light mast.

Loading Options

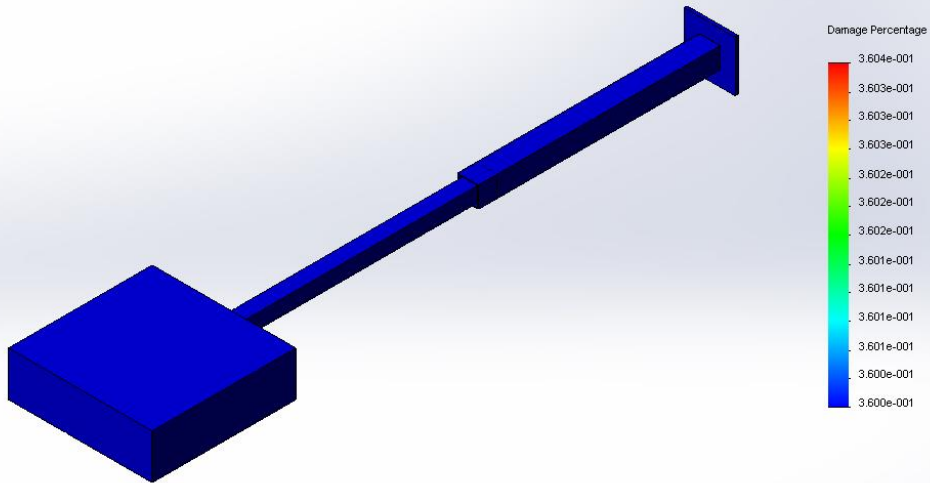
Event Name	No. of cycles	Loading type	Study Association		
Event-1	3600	Fully Reversed (LR=-1)	Study name	Scale Factor	Step
			125 mph	1	0



Study Results

Name	Type	Min	Max
Results1	Damage plot	0.36 Node: 1	0.36 Node: 1

Model name: Fully extended 7x7to5x5 tests
Study name: Fatigue
Plot type: Fatigue(Damage) Results1



Fully extended 7x7to5x5 tests-Fatigue-Results-Results1

Name	Type	Min	Max
Results2	Life plot	1e+006 cycle Node: 1	1e+006 cycle Node: 1

