

PASSCAL Environmental Chamber Test, of Ameraflex Pure Gum Rubber

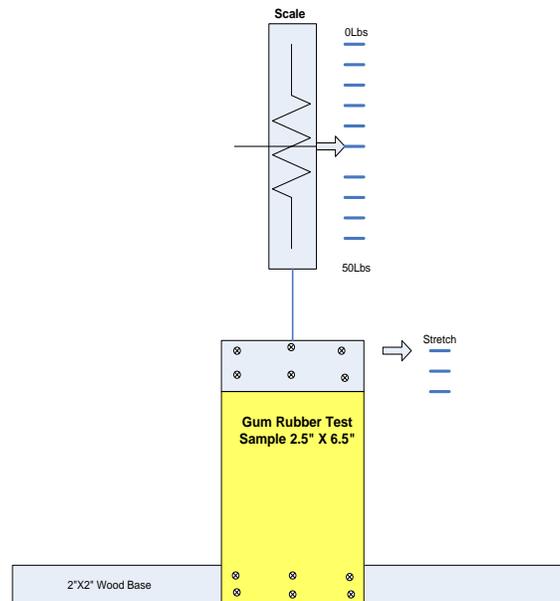
Reason: To evaluate and determine if the PEG-40Kg Rubber Band will be able to perform in extreme Arctic temperatures.

Test Setup Description: Consists of a 2.5" X 6.5" piece of Pure Gum Natural Rubber the same material used on the PEG-40Kg Sling, secured to a base and scale as shown below. Rubber was placed in an Environmental Test Chamber, after target temperature had been reached test setup was removed and testing began.

Test Parameters: **Testing target temperatures**-Room temp, 0C, -20C, and -40C. **Stretch**-measured at two test target weights 30lbs and 50lbs. **Elasticity**-rubber is pulled multiple times, relax and stretch are determine by the testing individual to have "good" elasticity or no elasticity "none".

Test Results

	30Lbs		50Lbs	
Temp	Stretch	Elasticity	Stretch	Elasticity
1) Room	5mm	Good	18mm	Good
2) 0C	5mm	Good	18mm	Good
3) -20C	4mm	Good	11mm	Good
4) -40C	4mm	None	4mm	None



Conclusion: Rubber performed to its specified minimum temp of -20C, with slightly less stretch than at room temperature. This may potentially cause more stress on the PEG-40Kg motor and in turn would increase power consumption. Overall the System should perform normally at Arctic temperatures of -20C and above. Elasticity at -40C was nonexistent, somewhere between -20 and -40 the rubber will become completely inert. I suspect the PEG motor will not be able to elevate the Mast Lift Hook, if there is sufficient power in the motor to stretch the rubber at -40C the end result could be a broken rubber band.