Testing GlassBR

June 8, 2017

Table 1: testCalculations

Ref	Test Name	fileName.py	Test Purpose	Traceability	Input File	Significant Input	Expected Output	Notes
1	?	testCalculations	to make sure expected pb values is returned	uses equations from DD1's B and IM1's Pb	defaultInput.txt	see Input File	'For the given input parameters, the glass is considered safe'	Improve: instead of equality of floats (assertEqual), should use some epsilon error
2	?	testCalculations2	"	"	testInput1.txt	"	"	"
3	?	testCalculations3	"	"	testInput2.txt	"	"	"
4	?	testCalculations4	"	"	testInput3.txt	"	"	"
5	?	testCalculations5	"	"	testInput4.txt	"	"	"
6	?	testCalculations6	"	"	testInput5.txt	"	"	"
7	?	testCalculations7	"	"	testInput6.txt	"	"	"

Table 2: testCheckConstraints

Ref	Test Name	fileName.py	Test Purpose	Traceability	Input File	Significant Input	Expected Output	Notes
8	?	testCheckConstraints	to ensure a (i.e. length) >0	Following A1 (glass must be of rectangular shape); following physical constraint from Table 2 where a >0 and software constraint from Table 2 where a =>dmin	testInvalidInput1.txt	a = -1600	InputError: a and b must be greater than 0	
9	?	testCheckConstraints2	to ensure b (i.e. breadth) >0	Following physical constraint from Table 2 where b >0 and software constraint from Table 2 where b =>dmin	testInvalidInput2.txt	b = -1500	InputError: a and b must be greater than 0	
10	?	testCheckConstraints3	to ensure 1 <a/b <5	length should pertain to the longer side, following physical constraint from Table 2 where b <a	testInvalidInput3.txt	b = 2000	(a/b=0.8<1); InputError: a/b must be between 1 and 5	
11	?	testCheckConstraints4	to ensure a/b (i.e. aspect ratio) <5	following software constraint from Table 2 where a/b <ARmax	testInvalidInput4.txt	b = 200	(a/b=8>5); InputError: a/b must be between 1 and 5	
12	?	testCheckConstraints5	to ensure input t value (i.e. nominal thickness) is one of the industrial standard thicknesses	following R1 (t description)	testInvalidInput5.txt	t = 7	InputError: t must be in.[2.5,2.7,3.0,4.0,,5.0,6.0,8.0, 10.0,12.0,16.0,,19.0,22.0]	
13	?	testCheckConstraints6	to ensure input w value (i.e. weight of charge) is >minimum permissible input charge weight	following value of wmin (4.5 kg) from Table 3	testInvalidInput6.txt	w = 3	InputError: wtnt must be between 4.5 and 910	
14	?	testCheckConstraints7	to ensure input w value (i.e. weight of charge) is <maximum permissible input charge weight	following value of wmax (910 kg) from Table 3	testInvalidInput7.txt	w = 1000	InputError: wtnt must be between 4.5 and 910	
15	?	testCheckConstraints8	to ensure input tnt value (i.e. TNT equivalent factor) >0	following physical constraint from Table 2 where TNT >0	testInvalidInput8.txt	tnt = -2	InputError: TNT must be greater than 0	
16	?	testCheckConstraints9	to see if input SD (i.e. Stand off Distance) is >minimum stand off distance permissible for input	following value of SDmin (6 m) from Table 3	testInvalidInput9.txt	sdx = 0; sdy = 1.0; sdz = 2.0	InputError: SD must be between 6 and 130	
17	?	testCheckConstraints10	to see if input SD (i.e. Stand off Distance) is <maximum stand off distance permissible for input	following value of SDmax (130 m) from Table 3	testInvalidInput10.txt	sdx = 0; sdy = 200; sdz = 100	InputError: SD must be between 6 and 130	
18	?	testCheckConstraints11	see 8	see 8	testInvalidInput11.txt	a = 0	InputError: a and b must be greater than 0	
19	?	testCheckConstraints12	see 9	see 9	testInvalidInput12.txt	b = 0	InputError: a and b must be greater than 0	RuntimeWarning: divide by zero encountered in double_scalars params.asprat = params.a /params.b
20	?	testCheckConstraints13	see 15	see 15	testInvalidInput13.txt	tnt = 0	InputError: TNT must be greater than 0	
21	?	testCheckConstraints14	see 10	see 10	testInput7.txt	a = 1500; b = 1500	(a/b = 1); "Encountered an unexpected exception" why not the same error as 10?	
22	?	testCheckConstraints15	see 11	see 11	testInput8.txt	a = 7500; b = 1500	(a/b = 5); "Encountered an unexpected exception"	
23	?	testCheckConstraints16	see 13	see 13	testInput9.txt	w = 4.5	"Encountered an unexpected exception"	
24	?	testCheckConstraints17	see 14	see 14	testInput10.txt	w = 910	"Encountered an unexpected exception"	
25	?	testCheckConstraints18	"	"	"	"	REMOVE? Or was it supposed to follow the pattern and have tnt = 0? like #15	
26	?	testCheckConstraints19	see 16	see 16	testInput11.txt	sdx = 0; sdy = 6; sdz = 0	"Encountered an unexpected exception"	
27	?	testCheckConstraints20	see 17	see 17	testInput12.txt	sdx = 130; sdy = 0; sdz = 0	"Encountered an unexpected exception"	