

Low Speed Impact of Vehicles (including tire friction effects)

	weight	lb		friction coefficients	
Vehicle A	wt, W_A :	2,400.0		f_A	0.20
Vehicle B	wt, W_B :	3,350.0		f_B	0.00
	mass	lb-s ² /ft		contact duration, sec	
	m_A :	74.59		Δt	0.125
	m_B :	104.12			
	mbar:	43.46			
	initial speeds	mph		coefficient of restitution	
Vehicle A	Veh A	0.00		low e (e_1)	0.30
Vehicle B	Veh B	5.00		high e (e_2)	0.50

Unit Conversion

US

	range: velocity changes (e_1, e_2)	ft/s		mph	
Vehicle A	ΔV_A	5.22	6.07	3.6	4.1
Vehicle B	ΔV_B	-4.31	-4.93	-2.9	-3.4

	average acceleration, g's		peak accel, g's, (2 to 3 x a_{avg})		
	a_A, avg :	1.30	1.51	$a_A, peak$:	2.6 4.5
	a_B, avg :	-1.07	-1.23	$a_B, peak$:	-2.1 -3.7

	Energy Equivalent Barrier Speed	ft/s		mph	
Vehicle A	EEBS_A	5.22	6.07	3.6	4.1
Vehicle B	EEBS_B	6.68	6.93	4.6	4.7

