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Addendum to ARL-TR-9540, *Modeling the Rebound of Ballistic Roma Plastilina No.1 Clay*

**by Timothy G Zhang, Mary J Graham, and
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Addendum to ARL-TR-9540, Modeling the Rebound of Ballistic Roma Plastilina No.1 Clay

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14. ABSTRACT This technical note is an addendum to the ARL-TR-9540 report, <i>Modeling the Rebound of Ballistic Roma Plastilina No.1 Clay</i> . This addendum lists all the material parameters in LS-DYNA for the clay.					
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(U) Preface

(U) This addendum provides the material constants for Roma Plastilina No.1 clay that were calibrated in the research reported in the accompanying report, ARL-TR-9540. The material constants are listed in the format of keyword in LS-DYNA.

*MAT_PLASTICITY_COMPRESSION_TENSION

MID	RO	E	PR	C	P	FAIL	TDEL
	1342	1E6	0.49	0	0	2	0
LCIDC	LCIDT	LCSRC	LCSRT	SRFLAG	LCFAIL	EC	RPCT
4	5	3	3	0	0	2E6	1
PC	PT	PCUTC	PCUTT	PCUTF			
300	300	1E6	-15000	0			

*DEFINE_CURVE

3	0	1	1
0	1		
0.007	1		
0.07	1.099		
0.7	1.255		
10	4		
100	7		
1000	7		
1.00E+05	7		
1.00E+08	7		
1.00E+10	7		
1.00E+12	7		

*DEFINE_CURVE

5	0	1	1200
0	0.1		
0.04	15		
1	50		

*DEFINE_CURVE

4	0	1	1200
0	0		
0.005	0.948738		
0.01	2.066239		
0.015	3.32826		

0.02	4.712049
0.025	6.196351
0.03	7.761404
0.035	9.388944
0.04	11.0622
0.045	12.76589
0.05	14.48624
0.055	16.21097
0.06	17.92927
0.065	19.63185
0.07	21.31092
0.075	22.96016
0.08	24.57477
0.085	26.15142
0.09	27.68829
0.095	29.18507
0.1	30.6429
0.105	31.98301
0.11	33.25923
0.115	34.49725
0.12	35.69828
0.125	36.86349
0.13	37.99402
0.135	39.091
0.14	40.15552
0.145	41.18865
0.15	42.19144
0.155	43.16491
0.16	44.11004
0.165	45.02781
0.17	45.91916
0.175	46.78502
0.18	47.62627
0.185	48.4438
0.19	49.23845
0.195	50.01105
0.2	50.7624
0.205	51.4933
0.21	52.20449
0.215	52.89673

0.22	53.57073
0.225	54.22719
0.23	54.86678
0.235	55.49017
0.24	56.09799
0.245	56.69086
0.25	57.26938
0.255	57.83413
0.26	58.38567
0.265	58.92454
0.27	59.45128
0.275	59.96639
0.28	60.47035
0.285	60.96365
0.29	61.44674
0.295	61.92006
0.3	62.38404
0.305	62.83908
0.31	63.28559
0.315	63.72394
0.32	64.15449
0.325	64.57759
0.33	64.99359
0.335	65.4028
0.34	65.80553
0.345	66.20209
0.35	66.59274
0.355	66.97776
0.36	67.35742
0.365	67.73196
0.37	68.10161
0.375	68.4666
0.38	68.82714
0.385	69.18344
0.39	69.53568
0.395	69.88406
0.4	70.22874
0.405	70.56989
0.41	70.90767
0.415	71.24221

0.42	71.57367
0.425	71.90217
0.43	72.22784
0.435	72.55079
0.44	72.87112
0.445	73.18895
0.45	73.50437
0.455	73.81747
0.46	74.12833
0.465	74.43703
0.47	74.74366
0.475	75.04826
0.48	75.35092
0.485	75.65169
0.49	75.95063
0.495	76.2478
0.5	76.54324
0.505	76.837
0.51	77.12914
0.515	77.41968
0.52	77.70868
0.525	77.99617
0.53	78.2822
0.535	78.5668
0.54	78.85
0.545	79.13186
0.55	79.4124
0.555	79.69167
0.56	79.9697
0.565	80.24653
0.57	80.5222
0.575	80.79676
0.58	81.07026
0.585	81.34274
0.59	81.61424
0.595	81.88484
0.6	82.15457
0.605	82.42351
0.61	82.69172
0.615	82.95926

0.62	83.22621
0.625	83.49264
0.63	83.75865
0.635	84.02432
0.64	84.28975
0.645	84.55504
0.65	84.82029
0.655	85.08563
0.66	85.35116
0.665	85.61704
0.67	85.88338
0.675	86.15034
0.68	86.41808
0.685	86.68674
0.69	86.95652
0.695	87.22759
0.7	87.50013
0.705	87.77436
0.71	88.05049
0.715	88.32873
0.72	88.60932
0.725	88.89252
0.73	89.17856
0.735	89.46774
0.74	89.76032
0.745	90.0566
0.75	90.35688
0.755	90.6615
0.76	90.97077
0.765	91.28506
0.77	91.60472
0.775	91.93013
0.78	92.26169
0.785	92.59979
0.79	92.94487
0.795	93.29737
0.8	93.65772
0.805	94.02643
0.81	94.40396
0.815	94.79082

0.82	95.18754
0.825	95.59466
0.83	96.01273
0.835	96.44234
0.84	96.88409
0.845	97.33858
0.85	97.80646
0.855	98.28837
0.86	98.785
0.865	99.29704
0.87	99.82521
0.875	100.3702
0.88	100.9329
0.885	101.5139
0.89	102.1142
0.895	102.7345
0.9	103.3756
0.905	104.0385
0.91	104.7241
0.915	105.4332
0.92	106.1668
0.925	106.9259
0.93	107.7114
0.935	108.5244
0.94	109.366
0.945	110.2371
0.95	111.1388