

Muons in concrete

	$\langle Z/A \rangle$	ρ [g/cm ³]	I [eV]	a	$k = m_s$	x_0	x_1	\bar{C}	δ_0
	0.50274	2.300	136.3	0.13856	3.0000	0.2000	3.0000	3.9626	0.00
T	p [MeV/c]	Ionization	Brems	Pair prod [MeV cm ² /g]	Photonucl	Total	CSDA range [g/cm ²]		
10.0 MeV	4.704×10^1	6.656				6.656	8.353×10^{-1}		
14.0 MeV	5.616×10^1	5.208				5.208	1.522×10^0		
20.0 MeV	6.802×10^1	4.080				4.080	2.838×10^0		
30.0 MeV	8.509×10^1	3.175				3.175	5.655×10^0		
40.0 MeV	1.003×10^2	2.716				2.717	9.082×10^0		
80.0 MeV	1.527×10^2	2.049				2.049	2.657×10^1		
100. MeV	1.764×10^2	1.927				1.927	3.665×10^1		
140. MeV	2.218×10^2	1.798				1.798	5.825×10^1		
200. MeV	2.868×10^2	1.725				1.726	9.244×10^1		
298. MeV	3.894×10^2	1.702			0.000	1.702	<i>Minimum ionization</i>		
300. MeV	3.917×10^2	1.702			0.000	1.702	1.510×10^2		
400. MeV	4.945×10^2	1.711			0.000	1.712	2.096×10^2		
800. MeV	8.995×10^2	1.788	0.000		0.000	1.788	4.382×10^2		
1.00 GeV	1.101×10^3	1.821	0.000		0.000	1.822	5.490×10^2		
1.40 GeV	1.502×10^3	1.876	0.001	0.000	0.001	1.877	7.651×10^2		
2.00 GeV	2.103×10^3	1.936	0.001	0.000	0.001	1.938	1.079×10^3		
3.00 GeV	3.104×10^3	2.004	0.001	0.001	0.001	2.008	1.586×10^3		
4.00 GeV	4.104×10^3	2.052	0.002	0.002	0.002	2.058	2.077×10^3		
8.00 GeV	8.105×10^3	2.160	0.005	0.005	0.004	2.174	3.962×10^3		
10.0 GeV	1.011×10^4	2.193	0.007	0.007	0.005	2.212	4.873×10^3		
14.0 GeV	1.411×10^4	2.240	0.010	0.011	0.006	2.268	6.658×10^3		
20.0 GeV	2.011×10^4	2.287	0.016	0.019	0.009	2.331	9.265×10^3		
30.0 GeV	3.011×10^4	2.338	0.027	0.033	0.013	2.410	1.348×10^4		
40.0 GeV	4.011×10^4	2.372	0.038	0.048	0.017	2.474	1.757×10^4		
80.0 GeV	8.011×10^4	2.448	0.085	0.115	0.033	2.682	3.308×10^4		
100. GeV	1.001×10^5	2.472	0.110	0.151	0.041	2.775	4.041×10^4		
140. GeV	1.401×10^5	2.507	0.162	0.226	0.057	2.953	5.438×10^4		
200. GeV	2.001×10^5	2.544	0.244	0.346	0.081	3.215	7.384×10^4		
300. GeV	3.001×10^5	2.586	0.384	0.548	0.122	3.639	1.031×10^5		
400. GeV	4.001×10^5	2.615	0.529	0.759	0.162	4.065	1.290×10^5		
700. GeV	7.005×10^5	2.673	0.978	1.409	0.286	5.347	<i>Muon critical energy</i>		
800. GeV	8.001×10^5	2.687	1.130	1.629	0.328	5.774	2.112×10^5		
1.00 TeV	1.000×10^6	2.711	1.441	2.077	0.412	6.640	2.435×10^5		
1.40 TeV	1.400×10^6	2.746	2.065	2.969	0.583	8.364	2.970×10^5		
2.00 TeV	2.000×10^6	2.784	3.022	4.335	0.845	10.987	3.595×10^5		
3.00 TeV	3.000×10^6	2.828	4.624	6.607	1.294	15.354	4.361×10^5		
4.00 TeV	4.000×10^6	2.860	6.252	8.908	1.750	19.770	4.934×10^5		
8.00 TeV	8.000×10^6	2.938	12.832	18.169	3.650	37.589	6.377×10^5		
10.0 TeV	1.000×10^7	2.964	16.155	22.831	4.627	46.577	6.854×10^5		
14.0 TeV	1.400×10^7	3.003	22.789	32.122	6.640	64.554	7.580×10^5		
20.0 TeV	2.000×10^7	3.045	32.815	46.131	9.730	91.721	8.356×10^5		
30.0 TeV	3.000×10^7	3.094	49.496	69.444	15.087	137.121	9.242×10^5		
40.0 TeV	4.000×10^7	3.129	66.253	92.826	20.582	182.791	9.872×10^5		
80.0 TeV	8.000×10^7	3.216	133.445	186.432	43.612	366.705	1.139×10^6		
100. TeV	1.000×10^8	3.244	167.127	233.286	55.538	459.196	1.187×10^6		