

MicroShield 6.20 (6.20-0000)
Duratek Inc.

Page : 1
DOS File : Th-232c Shielded.ms6
Run Date : February 21, 2008
Run Time : 2:43:40 PM
Duration : 00:00:00

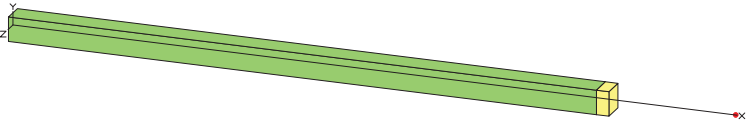
File Ref: _____
Date: _____
By: _____
Checked: _____

Case Title: Hematite
Description: Industrial Occ., Infinite Slab Shielded Backfill - Th-232+C
Geometry: 16 - Infinite Slab

Source Dimensions
Thick 480.0 cm 15 ft 9.0 in

Dose Points

	<u>X</u>	<u>Y</u>	<u>Z</u>
# 1	590.16 cm 19 ft 4.3 in	0 cm 0.0 in	0 cm 0.0 in



Shields

<u>Shield Name</u>	<u>Dimension</u>	<u>Material</u>	<u>Density</u>
Source	Infinite	Concrete	1.6
Shield 1	.102 m	Concrete	2.35
Air Gap		Air	0.00122

Source Input
Grouping Method : Standard Indices
Number of Groups : 25
Lower Energy Cutoff : 0.015
Photons < 0.015 : Included
Library : Grove

<u>Nuclide</u>	<u>μCi/cm³</u>	<u>Bq/cm³</u>
Ac-228	9.7312e-001	3.6005e+004
Bi-212	9.5964e-001	3.5507e+004
Pb-212	9.5964e-001	3.5507e+004
Po-212	6.1484e-001	2.2749e+004
Po-216	9.5965e-001	3.5507e+004
Ra-224	9.5965e-001	3.5507e+004
Ra-228	9.7312e-001	3.6005e+004
Rn-220	9.5965e-001	3.5507e+004
Th-228	9.5972e-001	3.5510e+004
Th-232	1.0000e+000	3.7000e+004
Tl-208	3.4480e-001	1.2758e+004

Buildup
The material reference is : Source

Results

<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u>		<u>Exposure Rate</u>	
		<u>No Buildup</u> <u>MeV/cm²/sec</u>	<u>With Buildup</u> <u>MeV/cm²/sec</u>	<u>No Buildup</u> <u>mR/hr</u>	<u>With Buildup</u> <u>mR/hr</u>
0.015	2.933e+04	0.000e+00	0.000e+00	0.000e+00	0.000e+00
0.04	3.631e+02	6.419e-07	1.913e-06	2.839e-09	8.461e-09
0.06	2.508e+02	2.842e-03	1.954e-02	5.644e-06	3.881e-05
0.08	1.533e+04	2.413e+00	2.612e+01	3.818e-03	4.133e-02
0.1	2.551e+03	1.360e+00	1.972e+01	2.080e-03	3.018e-02
0.15	1.513e+03	3.520e+00	6.455e+01	5.797e-03	1.063e-01
0.2	1.931e+04	1.032e+02	1.883e+03	1.822e-01	3.323e+00
0.3	9.354e+03	1.479e+02	2.309e+03	2.805e-01	4.380e+00
0.4	8.514e+02	2.846e+01	3.667e+02	5.546e-02	7.145e-01
0.5	4.953e+03	2.944e+02	3.208e+03	5.779e-01	6.298e+00
0.6	1.130e+04	1.070e+03	1.005e+04	2.089e+00	1.961e+01
0.8	1.137e+04	2.238e+03	1.619e+04	4.256e+00	3.080e+01

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<u>Energy</u> <u>MeV</u>	<u>Activity</u> <u>photons/sec</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>No Buildup</u>	<u>Fluence Rate</u> <u>MeV/cm²/sec</u> <u>With Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>No Buildup</u>	<u>Exposure Rate</u> <u>mR/hr</u> <u>With Buildup</u>
1.0	2.096e+04	7.235e+03	4.314e+04	1.334e+01	7.952e+01
1.5	4.812e+03	4.534e+03	1.898e+04	7.629e+00	3.194e+01
2.0	1.083e+02	2.019e+02	6.951e+02	3.121e-01	1.075e+00
3.0	1.273e+04	5.863e+04	1.597e+05	7.954e+01	2.167e+02
TOTALS:	1.451e+05	7.449e+04	2.567e+05	1.083e+02	3.945e+02