

**MicroShield 7.02**  
**Dominion (07-MSD-7.02-1318)**

Date	By	Checked

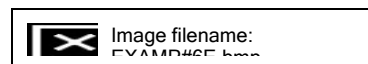
Filename	Run Date	Run Time	Duration
EXAMP#6E.MS7	August 11, 2020	5:00:11 PM	00:00:00

Project Info	
Case Title	Example 6e
Description	User manual case for resin liner source inference
Geometry	7 - Cylinder Volume - Side Shields

Source Dimensions	
Height	121.92 cm (4 ft)
Radius	60.96 cm (2 ft)

Dose Points			
A	X	Y	Z
#1	487.68 cm (16 ft)	60.96 cm (2 ft)	0.0 cm (0.0 in)

Shields			
Shield N	Dimension	Material	Density
Source	1.42e+06 cm <sup>3</sup>	Mixed ->	2.01
		Concrete	1.88
		Water	0.13
Shield 1	.635 cm	Iron	7.86
Shield 2	15.24 cm	Air	0.00122
Shield 3	5.08 cm	Air	0.00122
Shield 4	30.48 cm	Concrete	2.35
Transition	146.368 cm	Air	0.00122
Shield 6	30.48 cm	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**

Nuclide	Ci	Bq	μCi/cm <sup>3</sup>	Bq/cm <sup>3</sup>
Ba-137m	3.8137e+002	1.4111e+013	2.6794e+002	9.9136e+006
Co-58	5.2772e+001	1.9526e+012	3.7076e+001	1.3718e+006
Co-60	8.6716e+001	3.2085e+012	6.0924e+001	2.2542e+006
Cs-137	4.0314e+002	1.4916e+013	2.8323e+002	1.0480e+007
Mn-54	3.2597e+001	1.2061e+012	2.2901e+001	8.4735e+005
Sb-125	3.0106e+001	1.1139e+012	2.1152e+001	7.8261e+005
Te-125m	1.0765e+000	3.9829e+010	7.5628e-001	2.7982e+004

**Buildup: The material reference is Shield 6**

Integration Parameters					
Radial					16
Circumferential					16
Y Direction (axial)					16
Results					
Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm <sup>2</sup> /sec No Buildup	Fluence Rate MeV/cm <sup>2</sup> /sec With Buildup	Exposure Rate mR/hr No Buildup	Exposure Rate mR/hr With Buildup
0.03	1.377e+12	3.139e-88	2.343e-22	3.111e-90	2.322e-24
0.04	2.451e+11	6.324e-43	1.106e-22	2.797e-45	4.892e-25
0.1	3.021e+09	6.091e-12	7.001e-10	9.319e-15	1.071e-12
0.15	2.796e+09	2.075e-09	4.007e-07	3.417e-12	6.599e-10
0.2	8.455e+10	1.041e-06	2.118e-04	1.838e-09	3.738e-07
0.3	4.646e+09	1.600e-06	2.336e-04	3.035e-09	4.432e-07
0.4	3.488e+11	1.050e-03	1.035e-01	2.047e-06	2.016e-04
0.5	6.984e+11	1.051e-02	7.332e-01	2.064e-05	1.439e-03
0.6	1.310e+13	7.007e-01	3.640e+01	1.368e-03	7.104e-02
0.8	3.162e+12	1.160e+00	3.786e+01	2.207e-03	7.201e-02
1.0	3.209e+12	4.909e+00	1.130e+02	9.049e-03	2.083e-01
1.5	3.219e+12	5.538e+01	7.105e+02	9.317e-02	1.195e+00
<b>Totals</b>	<b>2.545e+13</b>	<b>6.216e+01</b>	<b>8.986e+02</b>	<b>1.058e-01</b>	<b>1.548e+00</b>