

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

Date	By	Checked

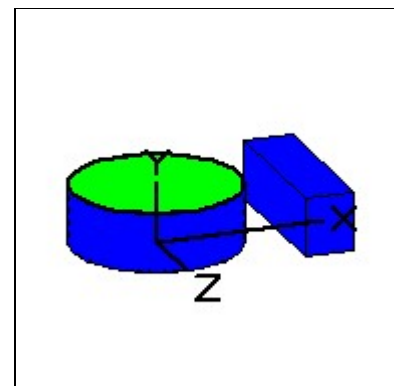
Filename	Run Date	Run Time	Duration
ESIS_D3.MS7	August 11, 2020	4:58:30 PM	00:00:00

Project Info	
Case Title	Example 3-2
Description	ESIS Problem #1 - Dose Point D3 - Buildup with Concrete
Geometry	7 - Cylinder Volume - Side Shields

Source Dimensions	
Height	108.3 cm (3 ft 6.6 in)
Radius	154.0 cm (5 ft 0.6 in)

Dose Points			
A	X	Y	Z
#1	311.0 cm (10 ft 2.4 in)	54.15 cm (1 ft 9.3 in)	0.0 cm (0.0 in)

Shields			
Shield N	Dimension	Material	Density
Source	8.07e+06 cm <sup>3</sup>	Water	1
Shield 1	2.54 cm	Iron	7.8
Transition	63.46 cm	Air	0.00129
Shield 3	91.0 cm	Concrete	2.4
Air Gap		Air	0.00122



Source Input: Grouping Method - User Defined Energies				
Group #	Energy (MeV)	Activity (Photons/sec)	Volume Source Photons/sec/cm <sup>3</sup>	% Energy Activity
1	0.4	3.2276e+013	4.0000e+006	6.415%
2	0.8	5.6483e+013	7.0000e+006	22.451%
3	1.3	2.2593e+013	2.8000e+006	14.593%
4	1.7	6.6166e+013	8.2000e+006	55.887%
5	2.2	3.2276e+011	4.0000e+004	0.353%
6	2.5	2.4207e+011	3.0000e+004	0.301%
7	3.5	9.6828e+007	1.2000e+001	0.000%

Buildup: The material reference is Shield 3	
Integration Parameters	
Radial	16
Circumferential	16
Y Direction (axial)	16

Results					
Energy (MeV)	Activity (Photons/sec)	Fluence Rate MeV/cm <sup>2</sup> /sec	Fluence Rate MeV/cm <sup>2</sup> /sec	Exposure Rate mR/hr	Exposure Rate mR/hr

		No Buildup	With Buildup	No Buildup	With Buildup
0.4	3.228e+13	3.142e-05	7.753e-03	6.123e-08	1.511e-05
0.8	5.648e+13	6.806e-02	4.488e+00	1.294e-04	8.536e-03
1.3	2.259e+13	2.248e+00	6.140e+01	3.924e-03	1.072e-01
1.7	6.617e+13	5.771e+01	1.041e+03	9.374e-02	1.690e+00
2.2	3.228e+11	1.819e+00	2.312e+01	2.730e-03	3.469e-02
2.5	2.421e+11	3.177e+00	3.435e+01	4.573e-03	4.944e-02
3.5	9.683e+07	9.188e-03	6.788e-02	1.187e-05	8.771e-05
<b>Totals</b>	<b>1.781e+14</b>	<b>6.503e+01</b>	<b>1.164e+03</b>	<b>1.051e-01</b>	<b>1.890e+00</b>