



Inflation/ Heating/ Venting/ Air Change Calculation

(Using document ASI-77 Guidelines)

Customer:	Georgetown Prep	Inside Temperature(degreeF):	65
Location:	MD	Outside Temperature(degree F):	12
Dome Length:	245 Feet		
Dome Width:	171 Feet		
Dome Height:	49 Feet		
Dome U Factor:	0.5 U=1/R, Dome Lined R=2, Dome Insulated R=10		
Air U Factor:	0.018		

Air Loss

Exits:	1200	@	300 cfm each
Revolving Doors:	400	@	400 cfm each
Personnel Airlocks:		@	450 cfm each
Vehicular Airlocks:	600	@	600 cfm each
Field Joints:	591	@	1.5 cfm/linear ft. each
Perimeter Anchorage:	2496	@	3 cfm each
Furnace Ducts:	250	@	250 cfm each
Venting:	3000	@	1500 cfm/ sq. ft.
Building Attachment:		@	2.5 cfm/sq.ft.
Total Air Loss	8538 cfm		

Heating Input Required

(Dome U factor * Dome Fabric Area * (Inside Temperature - Outside Temperature))+
(60 * Total Air Loss * Air U Factor * (Inside temperature - Outside Temperature))

Therefore: 2,202,682 mbtu

Furnace Air Capacity: 25,000 cfm

Additional Fan Capacity: cfm

Standby Capacity: 9,500 cfm

Air Changes (@ minimum pressure): 180 minutes

Air Changes (@ maximum pressure): 94 minutes

Dome Floor area up to 7' high minimum air change: 34 minutes

Dome Floor area up to 7' high maximum air change: 12 minutes

The dome air exchange shown above will vary between the min. and max. depending on the dome pressure setting during wind conditions. This estimate is based on the total air volume of the dome membrane above the floor area.