

APPENDIX IV: SECTION 2.0  
MODEL PARAMETERS FOR BUILDINGS AND CONTENTS  
IN ST. KITTS AND NEVIS

**Table A4-1. Police & Fire Stations in St. Kitts  
(Building Type SK-1: 1 - 3 Story Commercial Masonry)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph**)	a <sub>2</sub> (mph**)	b <sub>1</sub>	b <sub>2</sub>	I <sub>i</sub>	J <sub>I</sub>
Roof Covering	MPS (M)	58	185	0.00	0.50	3.00	3.00
Roof Decking	WD (M)	55	176	0.00	0.50	3.00	3.00
Roof Framing	Wooden (M)	99	220	0.00	0.50	3.00	3.00
Roof-wall Connection	Toe Nail (M)	72	176	0.25	1.00	3.00	3.00
Roof-wall (and Intp.)	Toe Nail (M)	66	169	0.25	1.00	3.00	3.00
Lateral Bracing	RC (M)	99	220	0.25	1.00	0.10	0.00
Openings	No Window Prot. (M)	55	187	0.00	0.50	3.00	3.00
Cladding	RC Block	100	241	0.00	0.50	0.10	0.00
FF Connection	Rigid	132	220	0.25	1.00	0.10	0.00
Foundation	BLKS	132	275	0.25	1.00	0.10	0.00
Gross Structure	N/A	99	275	0.25	1.00	0.00	0.40

\* Main features

\*\* 1-minute sustained

1. Fully engineered
2. Constructed between 1950 and 1968
3. Gable

**Table A4-2. Hospitals & Health Centers in St. Kitts  
(Building Type SK-2: 1 - 3 Story Commercial Masonry)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph**)	a <sub>2</sub> (mph**)	b <sub>1</sub>	b <sub>2</sub>	I <sub>i</sub>	J <sub>i</sub>
Roof Covering	MPS	52	167	0.00	0.50	3.00	3.00
Roof Decking	WD	52	167	0.00	0.50	3.00	3.00
Roof Framing	Wooden Beams	94	209	0.00	0.50	3.00	3.00
Roof-wall Connection	Straps	76	185	0.25	1.00	3.00	3.00
Roof-wall (and Intp.)	Straps	69	177	0.25	1.00	3.00	3.00
Lateral Bracing	URM	104	231	0.25	1.00	0.10	0.00
Openings	No Window Prot.	55	187	0.00	0.50	3.00	3.00
Cladding	URM	100	241	0.00	0.50	0.10	0.00
FF Connection	Yes	132	220	0.25	1.00	0.10	0.00
Foundation	SOG	139	289	0.25	1.00	0.10	0.00
Gross Structure	N/A	104	289	0.25	1.00	0.00	0.40

\* Main features

\*\* 1-minute sustained

1. Fully engineered
2. Above average construction quality
3. Flat roof

**Table A4-3. Hospitals & Health Centers in St. Kitts  
(Building Type SK-3: 1 – 3 Story Commercial Masonry)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph**)	a <sub>2</sub> (mph**)	b <sub>1</sub>	b <sub>2</sub>	I <sub>i</sub>	J <sub>I</sub>
Roof Covering	MPS	50	160	0.00	0.50	3.00	3.00
Roof Decking	WD	48	152	0.00	0.50	3.00	3.00
Roof Framing	Wooden Beams	86	190	0.00	0.50	3.00	3.00
Roof-wall Connection	Straps	68	168	0.25	1.00	3.00	3.00
Roof-wall (and Intp.)	Straps	57	146	0.25	1.00	3.00	3.00
Lateral Bracing	URM	90	200	0.25	1.00	0.10	0.00
Openings	No Window Prot.	48	162	0.00	0.50	3.00	3.00
Cladding	URM	90	200	0.00	0.50	0.10	0.00
FF Connection	Yes	120	200	0.25	1.00	0.10	0.00
Foundation	SOG	114	238	0.25	1.00	0.10	0.00
Gross Structure	N/A	90	238	0.25	1.00	0.00	0.40

- \* Main features  
1. Not engineered  
2. Flat roof

\*\* 1-minute sustained

**Table A4-4. General Buildings in St. Kitts  
(Building Type SK-4: 1 - 3 Story Commercial Masonry)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph <sup>**</sup> )	a <sub>2</sub> (mph <sup>**</sup> )	b <sub>1</sub>	b <sub>2</sub>	I <sub>i</sub>	J <sub>I</sub>
Roof Covering	MPS	58	185	0.05	1.00	3.00	3.00
Roof Decking	WB	55	176	0.05	1.00	3.00	3.00
Roof Framing	WT	99	220	0.05	1.00	3.00	3.00
Roof-wall Connection	Straps	76	185	0.40	1.00	3.00	3.00
Roof-wall (and Intp.)	Straps	69	177	0.40	1.00	3.00	3.00
Lateral Bracing	RCB	104	231	0.40	1.00	0.10	0.00
Openings	No Window Prot.	55	187	0.05	1.00	3.00	3.00
Cladding	RCB	100	241	0.05	1.00	0.10	0.00
FF Connection	Yes	132	220	0.40	1.00	0.10	0.00
Foundation	BLKS	132	275	0.40	1.00	0.10	0.00
Gross Structure	N/A	104	275	0.40	1.00	0.00	0.40

\* Main features

\*\* 1-minute sustained

1. Fully engineered
2. Constructed between 1958 and 1997
3. Hip

**Table A4-5. Public Markets in St. Kitts  
(Building Type SK-5: 1 Story Commercial Steel)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph <sup>**</sup> )	a <sub>2</sub> (mph <sup>**</sup> )	b <sub>1</sub>	b <sub>2</sub>	I <sub>i</sub>	J <sub>i</sub>
Roof Covering	MPS	58	185	0.05	3.00	3.00	3.00
Roof Decking	Metal	58	185	0.05	3.00	3.00	3.00
Roof Framing	Steel Beams	99	220	0.05	3.00	3.00	3.00
Roof-wall Connection	Yes	72	176	0.50	2.05	3.00	3.00
Roof-wall (and Intp.)	Yes	66	169	0.50	2.05	3.00	3.00
Lateral Bracing	Steel Frame	100	241	0.50	2.05	0.10	0.00
Openings	N/A	100	241	0.05	3.00	3.00	3.00
Cladding	None	100	241	0.05	3.00	0.10	0.00
FF Connection	Yes	132	220	0.50	2.05	0.10	0.00
Foundation	BLKS	132	275	0.50	2.05	0.10	0.00
Gross Structure	N/A	100	275	0.50	2.05	0.00	0.40

- \* Main features  
1. Fully engineered  
2. Gable

\*\* 1-minute sustained

**Table A4-6. Schools in St. Kitts  
(Building Type SK-6: 1 - 2 Story Commercial Masonry)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph**)	a <sub>2</sub> (mph**)	b <sub>1</sub>	b <sub>2</sub>	I <sub>1</sub>	J <sub>1</sub>
Roof Covering	MPS	58	185	0.05	1.00	3.00	3.00
Roof Decking	Wooden Planks	55	176	0.05	1.00	3.00	3.00
Roof Framing	Wooden Truss	99	220	0.05	1.00	3.00	3.00
Roof-wall Connection	Straps	76	185	0.40	1.00	3.00	3.00
Roof-wall (and Intp.)	Straps	69	177	0.40	1.00	3.00	3.00
Lateral Bracing	RC	104	231	0.40	1.00	0.10	0.00
Openings	No Window Prot.	55	187	0.05	1.00	3.00	3.00
Cladding	RCB	100	241	0.05	1.00	0.10	0.00
FF Connection	Yes	132	220	0.40	1.00	0.10	0.00
Foundation	BLKS	132	275	0.40	1.00	0.10	0.00
Gross Structure	N/A	104	275	0.40	1.00	0.00	0.40

\* Main features

\*\* 1-minute sustained

1. Fully engineered
2. Constructed between 1959 and 1999
3. Gable

**Table A4-7. Airports in St. Kitts  
(Building Type SK-7: 1 - 2 Story Commercial Masonry)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph**)	a <sub>2</sub> (mph**)	b <sub>1</sub>	b <sub>2</sub>	I <sub>1</sub>	J <sub>1</sub>
Roof Covering	MPS	52	169	0.05	1.00	3.00	3.00
Roof Decking	MD	52	167	0.05	1.00	3.00	3.00
Roof Framing	Steel Beam	99	220	0.05	1.00	3.00	3.00
Roof-wall Connection	Bolts	72	176	0.40	1.00	3.00	3.00
Roof-wall (and Intp.)	Bolts	66	169	0.40	1.00	3.00	3.00
Lateral Bracing	RC	100	241	0.40	1.00	0.10	0.00
Openings	No Window Prot.	55	187	0.05	1.00	3.00	3.00
Cladding	RCB	100	241	0.05	1.00	0.10	0.00
FF Connection	Yes	132	220	0.40	1.00	0.10	0.00
Foundation	SOG	139	289	0.40	1.00	0.10	0.00
Gross Structure	N/A	100	289	0.40	1.00	0.00	0.40

\* Main features

\*\* 1-minute sustained

1. Fully engineered
2. Constructed between 1974 and 1999
3. Average construction quality



**Table A4-8. Government Buildings in St. Kitts  
(Building Type SK-8: Commercial Steel)\***

Building Element	Description	Model Parameters					
		a <sub>1</sub> (mph <sup>**</sup> )	a <sub>2</sub> (mph <sup>**</sup> )	b <sub>1</sub>	b <sub>2</sub>	I <sub>1</sub>	J <sub>1</sub>
Roof Covering	MPS	58	185	0.05	1.00	3.00	3.00
Roof Decking	O	55	176	0.05	1.00	3.00	3.00
Roof Framing	Steel Beam	99	220	0.05	1.00	3.00	3.00
Roof-wall Connection	Bolts	72	176	0.40	1.00	3.00	3.00
Roof-wall (and Intp.)	Bolts	66	169	0.40	1.00	3.00	3.00
Lateral Bracing	STL/ Shear Wall	100	241	0.40	1.00	0.10	0.00
Openings	No Window Prot.	55	187	0.05	1.00	3.00	3.00
Cladding	RCB	100	241	0.05	1.00	0.10	0.00
FF Connection	Yes	132	220	0.40	1.00	0.10	0.00
Foundation	BLKS	132	275	0.40	1.00	0.10	0.00
Gross Structure	N/A	100	275	0.40	1.00	0.00	0.40

\* Main features

\*\* 1-minute sustained

1. Fully engineered
2. Constructed between 1997 and 1998
3. Gable