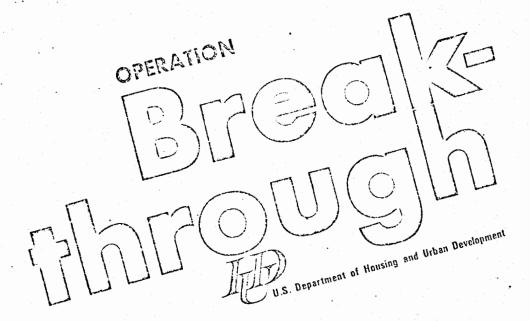
DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT

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GUIDE AND FORMAT FOR THE
PREPARATION OF A HOUSING SYSTEM
TESTING AND ANALYSIS PROGRAM
FOR
OPERATION BREAKTHROUGH
HOUSING SYSTEMS

A PRELIMINARY REPORT VOLUME I - MULTIFAMILY HIGH RISE

Guide and Format for the Preparation of a Housing System
Testing and Analysis Program

for:

# **OPERATION BREAKTHROUGH**

HOUSING SYSTEMS

A Preliminary Report Volume I - Multifamily High Rise

by The Building Research Division Team E.O. Pfrang, Manager

NBS PROJECT 4213400-421.00

Office of Research and Technology
Department of Housing and Urban Development
Washington, D.C. 20410

U.S. DEPARTMENT OF COMMERCE NATIONAL BUREAU OF STANDARDS REPORT

Guide and Format for the Preparation of a Housing System Testing and Analysis Program

## 1. Introduction

The purpose of this document is to guide and assist the Housing System Producer (HSP) in his preparation of the required testing and analysis program. This program should indicate the procedures that will be used to demonstrate that the performance levels as stated in the HUD Guide Criteria\* developed for Operation BREAKTHROUGH will be satisfactorily met.

The information is to be submitted in three formats:

- A. TESTING AND ANALYSIS PLAN (See Section 4, Format for Testing and Analysis Plan, on page 3.)
- B. SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM (See Section 5, Summary of Testing and Analysis Program, on page 4.)
- C. SCHEDULE OF PHYSICAL TESTING (See Section 6, Schedule of Physical Testing, on page 6.)

The acceptability of each HSP's testing and analysis program will be determined by HUD from the above data and the program shall be revised by the HSP if required.

# 2. Scope of Testing and Analysis Program

A program for each proposed housing type requiring independent consideration (Multifamily High Rise, Multifamily Low Rise, Single Family Attached, or Single Family Detached) should be submitted. To expedite approval,

<sup>\*(</sup>Guide Criteria for Design and Evaluation of: Operation BREAKTHROUGH Housing Systems, Volumes I through IV.)

the testing and analysis program shall contain adequately documented and detailed information. It will not be sufficient to merely state that a physical test will be conducted. The testing and analysis program shall include specific information on the tests to be conducted, the test methods to be used, the components or modules to be selected for testing, etc. When documented evidence of previous testing is proposed for use in the HUD evaluation, information giving the source of the document, an outline of the testing and analysis procedure used, and the identity of the testing authority must be included.

Testing and analysis is not intended for the purpose of developing and/or improving the design of system components.

## 3. General Guidelines for the Testing and Analysis Program

Compliance with any criterion should be demonstrated by one or more of the following:

- A. Review of plans and specifications.
- B. Review of previous documented testing.
- C. Accepted certification or standards.
- b. Professional judgment based upon previously documented user-experience.
- E. Analysis by rational application of engineering and scientific principles including calculations as required.
- F. Physical examination or testing of materials, components, modules, living units or complete buildings.
- G. On-site evaluative measurement in or of complete buildings.

Most of the criteria can be satisfied through professional judgment based upon documented prior experience, examination of plans and specifications, and/or computational analysis. Physical testing should be proposed when sufficient information cannot be adequately obtained by other means; or when testing is a more acceptable means (time, cost, etc.) for demonstrating compliance with criteria.

Since environmental exposure will vary with geographic locale, design information on load levels such as snow, wind and thermal or earthquake severity, etc., should be given in detail. If the housing system is to be applicable for a wide range of conditions or is to be limited to specific geographic regions, statements to that effect should be made and evidence provided to clearly indicate that extreme load conditions either have or have not been taken into account.

## 4. Format for Testing and Analysis Plan

As part of the overall testing and analysis program, an individual testing and analysis plan shall be prepared by the HSP for each criterion which explains in detail how he plans to demonstrate that the intent of each criterion has been or will be satisfied (see Figure 1, SAMPLE TESTING AND ANALYSIS PLAN). As mentioned in Section 2, on page 1, and Section 3, on page 2, the information shall include the following when applicable:

- A. Identification or related drawings, plans and specifications.
- B. Type, number, style, size of specimen(s), etc.
- C. Test methods to be used including special conditions, testing organizations, etc.
- D. Evidence of conformance with recognized standards.
- E. Documentation attesting to previous applicable certification and/or testing.
- F. Calculation methods used and actual calculations.

- G. Documentation attesting to pertinent experience data.
- II. Other information relative to the particular criterion.

The testing and analysis plans shall be prepared on 8 1/2" x 11" or 8 1/2" x 14" sheets (leaving a margin of at least 1" on the left side) which shall be grouped by HUD Guide Criteria Matrix intercept (A.1, A.2, .... L.9. See Figure 2). Each intercept grouping should be annotated with the name of the HSP, the building type, and the number of abbreviated title of the criterion to which it relates as listed in the attached SUMMARY FORMS. The criterion numbers are those in the HUD Guide Criteria which should be consulted for details of each criterion.

## 5. Summary of Testing and Analysis Program

The summary listing of the proposed testing and analysis program to be prepared by the HSP will provide an overview of the various tasks and will permit scheduling of activities. Listing of criteria are provided on the attached SUMMARY FORMS which give criterion numbers and abbreviated performance statements. Figure 3 is a sample showing how this form can be completed. Information on this SUMMARY FORM is divided into two categories.

Category I, Evaluation of Plans and Specification and Documentation, includes those evaluations which are proposed to be made by either:

- A. Review of plans and specifications,
- B. Analysis by rational application of engineering and scientific principles, or
- \*C. Analysis of previous test results or approved Industry Certification.

Category II, Evaluation of Physical Elements, should include those evaluations which are proposed to be made by:

A. Professional judgment based on examination of components and/or assemblies, or

#### B. Physical testing and analysis of results.

Under the first column of Category I, Review of Plans and Specifications, a check mark will be sufficient. For the other columns of Category I and Category II the identity of the specimen(s) is needed. The specimen(s) should be identified by one of the following symbols:

Ma - for materials,

H - housing unit, and

C - component

Hs - housing system.

M - module

Material is any single element such as surface coating for floor, wall, etc. Component is an assembly of elements such as: a mechanical system, composite wall panel, window assembly, etc. Module is a volumetric assembly having walls, ceiling and floor. Housing unit is an assembly of modules and/or components making up at least one complete living unit. Housing system is a complete structure errected on site.

Where the treatment of some criteria has been completed, the specimen(s) symbol should be circled.

There may be some criteria which will not be applicable for certain types of construction. In these cases mark "NA" as appropriate under Categories I and II.

# 6. Schedule of Physical Testing

If physical testing is proposed, a schedule shall be prepared and submitted to assure the adequate planning of this phase. This schedule shall follow the format outlined in Figure 4.

The test schedule shall include only tests or groups of tests which require a specimen to be specially procured or fabricated for the purpose of performing physical tests.

The test schedule prepared should be hardware oriented, by specimen. The schedule shall show by a dashed line the manufacturing or procurement lead-time for each specimen and the shipment of specimens to the test

facility. The total testing time required shall be shown by a solid line (including errection, instrumentation and test time) and the analysis time required after each test shall be shown by a dotted line. A particular specimen (module, component, etc.) may be used concurrently or in sequence to demonstrate adequacy with respect to more than one criterion. Scheduling should be by calendar week estimating start and completion dates. The overall schedule will be used to assure that the procurement of sufficient number of test specimens are contemplated for the performance of the required tests in the overall time frame of the program.

#### 7. Recommended Testing Laboratories

For each test which must be conducted as shown on the SCHEDULE FOR PHYSICAL TESTING, Figure 4, the proposed testing laboratory along with alternate testing organizations should be identified. If consultants are used, the consultant, or consulting firm, along with alternates should be also identified.

In considering possible testing facilities, it should be noted that Federal laboratories with applicable capabilities are available and may be utilized in this program. Agreements have been reached, or are contemplated, making available the facilities of the National Bureau of Standards, Gaithersburg, Maryland, the Forest Products' Laboratory, Madison, Wisconsin, the Naval Civil Engineering laboratory, Port Ilueneme, California, and the Army Construction Engineering Research Laboratory, Champaign, Illinois.

## 8. List of Required Submittals

As descibed in this document, three separate submittals comprising the proposed testing and analysis program are to be prepared:

- A. TESTING AND ANALYSIS PLANS; on 8 1/2" x 11" or 8 1/2" x 14" sheets, grouped by matrix intercept.
- B. SUMMARY FORMS FOR TESTING AND ANALYSIS PROGRAM (one set for each building type).
- C. SCHEDULE OF PHYSICAL TESTING.

#### TESTING AND ANALYSIS PLAN

Housing System Producer XYZ Corporation

Building Type Multifamily High Rise

E.7.3.1 Air Infiltration through exterior Wall System

- 1. Propose to use window assembly (No. 24A), door assembly (No. 31C) and preformed panel wall system (Model No. 313).
- 2. Scale drawings and detailed specifications of test specimens will be furnished.
- 3. Test has been conducted at the "Universal Testing Laboratory", Tucson, Arizona. NAAMM Interim Standard TM-1-68T (4.3 Test for Air Infiltration) used. Door assembly not included in test. Test Report #24381, Universal Testing Laboratory, to be furnished.
- 4. Door assembly will be described by detailed drawings and will be tested at "ABC Testing Laboratories", Denver, Colorado, or other testing laboratory meeting your approval, using ASTM E-283 Test Method; or a door assembly having a previously certified performance level and satisfying the criteria will be used and appropriate documentation furnished.

Figure 1.

Figure 2

		104	ME(	-		EXTE ENVE	RIOR LOPE	IN	TERIOR S DIVIDER	S		1		
ENCLOSED SPACES	LIGHTING ELEMENTS	POWER, ELECTRICAL DISTRIBUTION, COMMUNICATIONS	MECHANICAL EQUIP- MENT, APPLIANCES	PLUMBING	FIXTURES AND HARDWARE	ROOF-CEILING, GROUND FLOOR	WALLS, DOORS AND WINDOWS	FLOOR- CEILING	AND DOORS, INTRA-DWELLING	WALLS AND DOORS, INTER-DWELLING	STRUCTURE	Elements	Built	
7	云	Las	25.00	1	ଦ	**************************************	F.1	U	0	GJ		S		
	,						·					and:	STRUCTURAL SERVICEABILITY	
												N	STRUCTURAL SAFETY	
												63	HEALTH AND SAFETY	
												4	FIRE SAFETY	Att
												5	ACOUSTIC ENVIRONMENT	ttribute
	-											<b>6</b>	ILLUMINATED ENVIRONMENT	ites
												7	ATMOSPHERIC ENVIRONMENT	
						:.						တ	DURABILITY/TIME RELIABILITY (FUNCTION)	
								·.			• •	0	SPATIAL CHARACTERISTICS AND ARRANGEMENT	

The first term that the Carlo Landing has been a

R

Housing Sys	stem Producer: XYZ Corporation		alegor		ļ	gory II	SUMMARY FORM FOR		
Building Typ	Multifamily Low Rise (Guide Criteria Vol. II)	Pla	Evaluation of Plans & Specs. & Documentation			ation of sical nents	TESTING AND ANALYSIS PROGRAM  Legend		
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)		
A.1.1.1	Subject Vertical deflection	~ ~	0 4	-			Remarks		
(a)	Performance criteria (1D+1L+1C)	\$ \$ \$		М					
:				<u> </u>					
0.4.3.1	Floor-ceiling-smoke generation		1	1	· -	_c_			
*		13							
E.7.3.1	Air infiltration through wall system	>-		0			All tests documented except door infiltration		
•					• 1				
F.8.1.1	Service life of roofing			0			Systems available for examination		
•									
F.8.2.1	water penetrations-resistance of roofing				<b> </b>	C_			

### SCHEDULE OF PHYSICAL TESTING

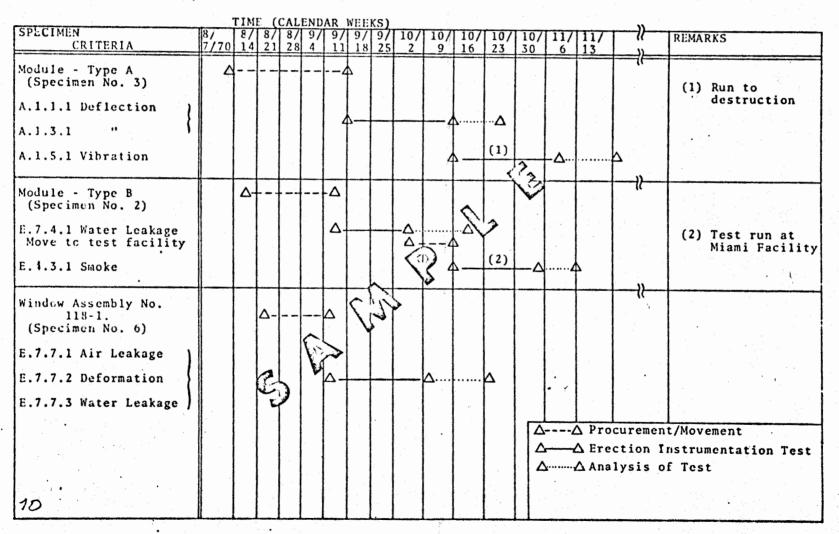


Figure 4

Category I Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of** Evaluation of TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Gulde Criteria Vol. 1) Plans & Specs. Physical & Documentation Legend Elements intercept: A.1 Structure/Structural Serviceability Ma -Material H. -Housing Unit Computations/ Analysis Test Data/ Industry Cert. HS -Housing System C -Component Examination O-Completed Testing to be Done M -Module Criteria (symbol circled) Number Subject Remarks A.1.1.1(a) Structure/Vert. Deflect. - Performance Criteria " - floor (1D+1L) (b)1 " - roof (1D+1L) " - floor (1D+1D+creep) " - roof (1D+1L+creep) A.1.2.1 Structure/Drift (0.9D+1W) A.1.2.2 Structure/Drift (1D+1L+0.8W) A.1.3.1(a) Structure/Horiz. Deflect .- Performance Criteria " - Exterior Walls 1 (0.9D+1W) 2 (1D+11.+0.8W) (c) Structure/Horiz, Deflect - Interior Walls 1 (1D+1L) \_\_\_\_\_2 (1D+5psf)\_\_\_\_\_\_ A.1.4.1 Structure/Foundation Settlement (1D+1L) A.1 Intercent continued on next nage

Category I Category II Housing System Producer: SUMMARY FORM FOR Evaluation of **Evaluation of** TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend & Documentation Elements Intercept: A.1 (Continued) Ma -Material H -Housing Unit Review of Plans/Specs. Computations/ Analysis Test Data/ Industry Cert. C -Component **HS**-Housing System Examination -Completed Testing to be Done M -Module (symbol circled) Criteria Remarks Number Subject A. 1. 5. 1(a) Structure/Vibrations - Transient (251b x 3ft) (b) - Steady-state (c) - Environmental Structural Elements/Local Damage - Vertical A.1.6.1(a) (b) - Horizontal A.1.7.1 Structure/Expansion and Contraction Performance Criteria Deflections

Building Type	Housing System Producer:  Building Type: Multifamily High Rise (Guido Criteria Vol. 1)  Intercept: A. 2 Structure/Structural Safety		Category I Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM  Legend
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma -Material H -Housing Unit C -Component HS -Housing System M -Module — -Completed (symbol circled)
Number	Subject	Re Pla	S &	T es	Ä	Tes	Remarks
A. 2.1.1	Structure/Load Capacity						
(a)	1.4D+1.7L						
, (p)	0.9D+1.3W						
(c)	0.9D+1.45E						
(d)	1.1D+1.3L+1.3W.						
(e)	1.1D+1.3L+1.45E						
(f)	0.9D+1.7Q						
A.2.1.2	Structure/Effect of creep and inelastic deflections on load capacity						
A. 2. 2. 1	Structure/Load capacity under repeated loading						
,	100 cycles: 1D to (1D+0.5L)						
	1000 cycles: 1D to (1D+0.5W)						
• .	5 cycles: (1D+E) to (1D-E)		,				
128	A.2 Intercept continued on next page						

Housing Syste	am Producer:	Co	itegor	/ 1	Cate	gory II	SUMMARY FORM FOR		
	e: Multifamily High Rise (Guide Criteria Vol. 1)		luation		Evaluation of		TESTING AND ANALYSIS PROGRAM		
	(Continued)	•	& Documentation		Physical Elements		Legend		
		Α,	/suoi	ert.	E O		Ma - Material H - Housing Unit C - Component HS - Housing System		
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	M -Module -Completed (symbol circled)		
Number	Subject	P. P.	S A	Tes	Ä	Tes	Remarks		
A.2.3.1	Structure/Sustained loading (1.2D+1.5L) for 24 hours								
(a)1	dv								
2	dh								
(b)1	dvr								
2	Dvr						•		
A.2.4.1	Structure/Progressive collapse (1D+0.5L)								
A. 2. 5. 1	Structure/Effect of differential foundation settlement on load capacity								
A.2.6.1	Structure/Capacity of inserts and hangers								
(a)	Ceilings								
(b)	Structural members								
A. 2. 7. 1	Capacity reduction by cutting for utilities								
							• • • • • • • • • • • • • • • • • • • •		
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Category I Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of Evaluation of** TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend Intercept: A. 4 Structure/Fire Safety & Documentation Elements H -Housing Unit Ma -Material Computations/ Analysis Test Data/ Industry Cert. **HS**-Housing System Review of Plans/Specs. C -Component Examination Testing to be Done O-Completed M -Module Criteria (symbol circled) Number Subject Remarks Structural Components - Fire Resistance A.4.1.1 Connections - " A.4.1.2 A.4.2.1 Elements - Potential Heat A.4.3.1 Sprayed fire protection

.

Building Ty	pe: Multifamily High Rise (Guide Criteria Vol. I)  .5 Structure/Acoustic Environment	Eve	Evaluation of Plans & Specs & Documentation			gory II ation of sical ments	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
Criteria			Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS-Housing System M -Module -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	S 4	i e	ă	T e	Remarks
A.5.1.1	Structure borne noise						
			<u> </u>				
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			ļ	-	<b> </b>		
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			-				

Building Typ	Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: A, 8 Structure/Durability/Time Reliability  (Function)  Criteria		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend		
			Computations/ Analysis	Test Data/ Industry Cert.		Testing to be Done	Ma -Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)		
Number	Subject	Review of Plans/Specs.	Com	Test Indu	Exar	Testi be D	Remarks		
A.8.1.1 A.8.1.2 A.8.2.1	Eliminate continuous voids Provide adequate vapor barriers and ventilation Structural/time reliability								
A.8.3.1	Static and dynamic deflections								

em Producer:				Cate	gory II		SUMMARY FORM FOR		
e: Multifamily High Rise (Guide Criteria Vol. 1)						TESTING AND ANALYSIS PROGRAM			
the state of the s		& Documentation		Elements		Legend			
Inter-Dwelling/Structural Serviceability	20.	hons/	/ Cert.	ioi		C -Component H	I -Housing Unit IS -Housing System )-Completed		
	iew o	nputci olysis	Data	minat	ling to	m -module	(symbol circled)		
Subject	Rev	Con	Test Indu	ŗx	Test be	Rema	rks		
Inter-dwelling walls/deflections - load supporting									
Inter-dwelling walls/deflections - non-load supporting									
Inter-dwelling walls/foundation settlement									
" " /local damage	-								
150 1b anywhere			ļ		-				
200 lb 3in above floor						1			
10 psf					<u> </u>				
Attached shelves or 40 lh/ft at eccentricity of 6in + t/2	-								
Impact									
	-				-				
	-				<u> </u>				
	Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/deflections - non-load supporting  Inter-dwelling walls/foundation settlement  " " /local damage  150 1b anywhere  200 1b 3in above floor  10 psf  Attached shelves or 40 1h/ft at eccentricity of 6in + t/2	Evan Producer:  Example Multifamily High Rise (Guide Criteria Vol. 1)  Interior Space Dividers-Walls and Doors,  Inter-Dwelling/Structural Serviceability  Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/deflections - non-load supporting  Inter-dwelling walls/foundation settlement  " " /local damage  150 lb anywhere  200 lb 3in above floor  10 psf  Attached shelves or 40 lb/ft at eccentricity of 6in + t/2	Evaluation Plans & Sp. & Documen  Interior Space Dividers-Walls and Doors,  Inter-Dwelling/Structural Serviceability  Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/deflections - non-load supporting  Inter-dwelling walls/foundation settlement  "" /local damage  150 lb anywhere  200 lb 3in above floor  10 psf  Attached shelves or 40 lb/ft at eccentricity of 6in + t/2	Evaluation of Plans & Specs.  Interior Space Dividers-Walls and Doors,  Inter-Dwelling/Structural Serviceability  Subject  Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/deflections - non-load supporting  Inter-dwelling walls/foundation settlement  "" "/local damage  150 1b anywhere  200 1b 3in above floor  10 psf  Attached shelves or 40 1b/ft at eccentricity of 6in + t/2	Evaluation of Plans & Specs. & Documentation  Interior Space Dividers-Walls and Doors,  Inter-Dwelling/Structural Serviceability  Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/deflections - non-load supporting  Inter-dwelling walls/foundation settlement  "" /local damage  150 lb anywhere  200 lb 3in above floor  Attached shelves or 40 lh/ft at eccentricity of 6in + t/2	## Multifamily High Rise (Guide Criteria Vol. 1)  Interior Space Dividers-Walls and Doors,  Inter-Dwelling/Structural Serviceability  Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/deflections - non-load supporting  Inter-dwelling walls/foundation settlement  " " /local damage  150 lb anywhere  200 lb 3in above floor  10 psf  Attached shelves or 40 lh/ft at eccentricity of 6in + t/2	Evaluation of Plans & Spect.  Interior Space Dividers-Walls and Doors,  Inter-Dwelling/Structural Serviceability  Subject  Subject  Subject  Subject  Subject  Subject  Inter-dwelling walls/deflections - load supporting  Inter-dwelling walls/foundation settlement  "" "/local damage  150 1b anywhere  200 1b 3in above floor  10 psf  Attached shelves or 40 1h/ft at eccentricity of 6in + t/2		

Building Typ	Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: B. 2 Interior Space Dividers-Walls and Doors,		[	Category I  Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend		
Criteria	Inter-Dwelling/S	tructural Safety		Pians/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module — -Completed (symbol circled)		
Number	Subject		R <sub>e</sub>	윤	Cor An	Tes	Exc	Tes	Remarks		
B.2.1.1(a)	Inter-dwelling walls supporting	s/load capacity - load									
(b)	Inter-dwelling walls	/load capacity - non-	load			The second secon					
					· · ·						
								-			
				$\dashv$							

Building Ty	Housing System Producor:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: B. 4 Interior Space Dividers, Walls and Doors,		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of rsical ments	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM  Legend		
Criteria	Inter-Dwelling/Fire Safety	Review of Plans/Specs.	mputations/ alysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)		
Number	Subject	P. P. D.	A Co	Tes	Exc	Tes be	Remarks		
В.4.1.1	Inter-dwelling walls - fire endurance								
B.4.1.2	" " - no through openings								
B.4.1.3	" " - service and utility openings								
B.4.2.1	Inter-dwelling walls - flame spread								
B.4.3.1	" - smoke generation								
B.4.4.1	" " - potential heat								
		_							

Housing Sys	tem Producer:		stegon		Cate	gory II	SUMMARY FORM FOR		
	e: Multifamily High Rise (Guide Criteria Vol. 1)		iluation is & Sp		Evaluation of Physical		TESTING AND ANALYSIS PROGRAM		
Intercept: B.	5 Interior Space Dividers-Walls and Doors,	•	& Documentation			nents	Legend		
	Inter-Dwelling/Acoustic Environment	- Si	Computations/ Analysis	Cert.	roi		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed		
Criteria		Review of Plans/Specs.	nputa Ilysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)		
Number	Subject .	Rev Pla	Con	Test	Exa	Test be	Remarks		
B.5.1.1	Inter-dwelling walls - airborne noise								
B.5.1.2	" noise insulation between								
	enclosed spaces								
	•		<u> </u>						
						,			
				1					
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Housing Syst	em Producer:		itegor		Cate	gory	SUMMARY FORM FOR		
Building Typ	e: Multifamily High Rise (Guide Criteria Vol. I)	Plar	luations & S	ecs.	Phy	ation of sical	TESTING AND ANALYSIS PROGRAM  Legend		
Intercept: <u>C.</u>	1 Interior Space Dividers-Walls and Doors, Intra-Dwelling/Structural Serviceability	-	/suoi		l	nents	Ma - Material H - Housing Unit C - Component HS - Housing System		
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	M -Module -Completed (symbol circled)		
Number	Subject	Rev	So A	Tes	Exa	Tes be	Remarks		
C.1.1.1	Intra-dwelling walls/deflections - load supporting								
C.1.1.2	Intra-dwelling walls/deflections - non-load supporting								
C.1.2.1	Intra-dwelling walls/foundation settlement								
C.1.3.1	" " /local damage								
(a)	150 lb anywhere								
(b)	200 1b 3in above floor								
(c)	10 psf	<u> </u>							
(d)	Attached shelves or 40 lb/ft at eccentricity of 6in + t/2								
(e)	Impact								
			l		<u> </u>				

Housing Sys	tem Producer:	ļ	ategon			gory II	SUMMARY FORM FOR		
Building Typ	e: Multifamily High Rise (Guide Criteria Vol. 1)		alvation ns & St		Evaluation of Physical		TESTING AND ANALYSIS PROGRAM		
Intercept: C.	2 Interior Space Dividers-Walls and Doors,	& D	& Documentation		Elements		Legend		
	Intra-Dwelling/Structural Safety		Computations/ Analysis	Cert.	io		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed		
Criteria		Review of Plans/Specs.	Computa Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circlud)		
Number	Subject	Rev	Con	Test	Exa	Test	Remarks		
C.2.1.1(a)	Intra-dwelling walls/load capacity - load supporting								
						<u> </u>			
(b)	Intra-dwelling walls/transfer of loads - non-load supporting								
			-						
			· ·						
					<b> </b>				
	•								
			-						
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: C. 4 Interior Space Dividers-Walls and Doors,		Category I  Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
Criteria	Intra-Dwelling/Fire Safety		Review of Plans/Specs. Computations/Analysis Test Data/Industry Cert.		Examination	Examination Testing to be Done	Ma -Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)
Number	Subject	9.5	8 £	T e	ă	T es	Remarks
C.4.1.1	Intra-dwelling walls - fire stops						
C.4.2.1	" ' - flame spread						
C.4.3.1	" " - smoke generation						
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)			ategor		Category II		SUMMARY FORM FOR	
			Evaluation of Plans & Specs.			ation of	TESTING AND ANALYSIS PROGRAM	
Intercept: C	.5 Interior Space Dividers-Walls and Doors,		& Documentation			nents	Legend	
	Intra-Dwelling/Acoustic Environment	- ½	ons/		s.		Ma - Material H - Housing Unit C - Component HS - Housing System	
Criteria		Review of Pians/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Examination Testing to be Done	M -Module -Completed (symbol circled)	
Number	Subject	Rev	Con	Tes Ind	Exa	Tes	Remarks	
C.5.1.1	Intra-dwelling walls - airborne noise							
C.5.1.2	" noise isolation between enclosed spaces					Annual magazine control of sector of		
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Housing System Producer:			ategon		Cate	gory II	SUM/AARY FORM FOR		
Building Typ	Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: C.8 Interior Space Dividers-Walls and Doors.  Intra-Dwelling/Durability/Time Reliability (Function)		Evaluation of Plans & Specs.		Evaluation of Physical		TESTING AND ANALYSIS PROGRAM  Legend		
Intercept: C.			Review of Plans/Specs. Computations/ Analysis Test Data/ Industry Cert.			Elements	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed		
Criteria		Review of Plans/Specs.	nputa alysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)		
Number	Subject	R P P	A G	Tes Ind	Ä	Tes	Remarks		
C.8.1.1	Performance of the final finish								
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Building Typ	Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: D.1 Interior Space Dividers-Floor-Ceiling/  Structural Serviceability  Criteria		Category 1  Evaluation of Plans & Specs. & Documentation		Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
			Computations/ Analysis	Data/ stry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)	
Number	Subject	Review of Plans/Specs.	Con	Test	Exa	Exar Tesh be C	Remarks	
D.1.1.1 D.1.2.1 D.1.3.1(a) (b) D.1.4.1 (a) (b) (c) D.1.5.1	Floor-ceiling assembly/deflections  " " /foundation settlement  Local damage/structural vibrations - floors  " /steady-state vibrations - ceiling  Local damage to floor-ceiling assembly  750 ft-1b impact  400 1b concentrated load  Ceilings - 5D or 4 psf  Local damage to protruding elements 500 1b  horizontally							

Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. !)  Intercept: D. 2 Interior Space Dividers-Floor-Ceiling/  Structural Safety  Criteria		Р	Category I  Evaluation of Plans & Specs. & Documentation		Category 11  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
		o	Plans/Specs. Computations/	Test Data/ Industry Cert.	Examination	g to	Ma-Material H -Housing Unit C -Component H5 -Housing System M -Module -Completed (symbol circled)	
Number	Subject	R ev.	Plans	Test Indus	Exam	Examination Testing to be Done	Remarks	
D.2.1.1	Floor-ceiling/load capacity		Acceptance of the second			Call and Balling of Laboration Marie.		
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)		Evo	Category I  Evaluation of Plans & Specs.		Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Intercept: D.	4 Interior Space Dividers-Floor-Ceiling/Fire	& Documentation					Legend  Ma - Material H - Housing Unit
Safe ty Criteria		Review of Plans/Specs.	Review of Plans/Specs. Computations/ Analysis	Test Data/ Industry Cert.	Examination	nation a to ne	C -Component HS -Housing System  M -Module -Completed (symbol circled)
Number	Subject •	Revie Plans,	Computa Analysis	Test [ Indust	Exam	Testing to be Done	Remarks
D.4.1.1	Floor-ceiling - fire endurance						
D.4.1.2	" - fire stops						
D.4.1.3	" " - no through openings						
D.4.2.1	" - flame spread						
D.4.3.1	" '- smoke generation	_					
D.4.4.1	" - potential heat						
			<u> </u>				

Category ! Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of** TESTING AND ANALYSIS PROGRAM **Evaluation of** Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend & Documentation Elements Intercept: D. 5 Interior Space Dividers-Floor-Ceiling/ H -Housing Unit Review of Plans/Specs. Computations/ Analysis Ma -Material Test Data/ Industry Cert. **HS**-Housing System Acoustic Environment C -Component Examination -Completed Testing to be Done M -Module (symbol circled) Criteria Number Subject Remarks Floor-ceiling assembly/airborne noise and D.5.1.1 impact Inter-dwelling noise isolation and impact insulation between enclosed spaces D.5.1.2.

Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: D.8 Interior Space Dividers-Floor-Ceiling/  Durability/Time Reliability (Function)  Criteria		Aultifamily High Rise (Guide Criteria Vol. 1)  terior Space Dividers-Floor-Ceiling/  Evaluation of Plans & Specs. & Documentation		Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
				5		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Review of Plans/Specs.	Compu	Test D Industr	Examination	Testing to be Done	Remarks
D.8.1.1	Flooring, dry areas - dimensional stability						
D.8.1.2	" " - indentation						
D.8.1.3	" " - bond to substrate						
D.8.1.4	" " - service life						
D.8.2.1	" wet areas - dimensional stability						
D.8.2.2	" " - indentation						
D.8.2.3	" " - bond to substrate						
D.8.2.4	" " - water penetration						
D.8.2.5	" " - resistance to chemicals						
D.8.2.6	" " - wear life						
		<u> </u>					
			1.3.				

Category I Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of Evaluation** of TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend & Documentation Elements Intercept: E.1 Exterior Envelope-Walls, Doors and Review of Plans/Specs.
Computations/Analysis Ma -Material H -Housing Unit Windows/Structural Serviceability Test Data/ Industry Cert. C -Component **HS**-Housing System Examination ()-Completed Testing to be Done M -Module Criteria (symbol circled) Number Subject Remarks E.1.1.1 Exterior wall/local damage envelope/horizontal\_deflections E.1.2.1 E.1.3.1 /foundation settelment E.1.4.1 Width and movements of joints

and the trace of the trace of the

Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: E.2 Exterior Envelope-Walls, Doors and  Windows/Structural Safety  Criteria		Category I Category II  Evaluation of Plans & Specs. Physical Elements			Evalue Phy	ation of	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
		Review of Plans/Specs.	rians/specs. Computations/ Analysis	Analysis Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Rey	Con	Test	Exa	Test be I	Remarks	
E.2.1.1(a) (b)	Exterior wall/load capacity - load supporting  " " - non-load supporting  Attachment of vencer (SD vertically + 3D horizontally)							
-	norizoncarry	-						

Category I Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of Evaluation of** TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend & Documentation Intercept: E. 4 Exterior Envelope-Walls, Door and Elements Ma -Material H -Housing Unit Computations/ Analysis Windows/Fire Safety Test Data/ Industry Cert. HS -Housing System C -Component Examination Testing to be Done Completed M -Module Criteria (symbol circled) Number Subject Remarks Exterior walls - fire resistance E.4.1.1 E.4.2.1 - flame spread E.4.3.1 - smoke generation E.4.4.1 - potential heat E.4.5.1 - floor-wall joint

Housing Sy	rstem Producer:		ategor		<del></del>	gory ii	SUMMARY FORM FOR
	oilding Type: Multifamily High Rise (Guide Criteria Vol. 1)  otercept: E. 5 Exterior Envelope-Walls, Doors and		Evaluation of Plans & Specs. & Documentation			ation of sical	TESTING AND ANALYSIS PROGRAM  Legend
Intercept: <u>I</u>			Τ.	T		lements	Ma - Material H - Housing Unit
	Windows/Acoustic Environment	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	ation	و ۾	C -Component HS -Housing System  M -Module
Criteria		ans/S	ompul	sst Da dustry	ami,	Examination Testing to be Done	(symbol circled)
Number	Subject	2 2	Ŭ Ā	1 E		P Q	Remarks
E.5.1.1	Exterior envelope noise attenuation				175.00	AND THE REAL PROPERTY.	•
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Category I Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of** Evaluation of TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend & Documentation Elements Intercept: E.7 Exterior Envelope-Walls, Doors and H -Housing Unit Ma -Material Computations/ Analysis Test Data/ Industry Cert. Windows/Atmospheric Environment Review of Plans/Specs. HS -Housing System C -Component Examination Completed Testing to be Done M -Module Criteria (symbol circled) Number Subject Remarks E.7.1.1 Exterior wall winter heat loss E.7.1.2 Winter total heat loss through windows E.7.1.3 Exterior wall summer heat gain E.7.1.4 Heat transmission through exposed ceilings E.7.2.1 Provisions for thermal breaks E.7.3.1 Air infiltration through exterior wall system E.7.4.1 No water leakage through exterior wall system E.7.5.1 below grade foundation E.7.6.1 Warm side vapor barrier E.7.6.2 for low permeance exterior E.7.7.1 Window air leakage No damage to window assembly from design windload E.7.7.2 Intercept E.7 continued on next page

Building Ty	dousing System Producer:  duilding Type: Multifamily High Rise (Guide Criteria Vol. 1)  ntercept: E.7 (Continued)		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Pla	Com	Test	Exa	Test be [	Remarks	
E.7.7.3	No water leakage through window assembly						•	
E.7.7.4	Acoustic requirements for window assembly							
E.7.7.5	Window hardware							
E.7.7.6	Sizes of windows							
E.7.8.1	Door assembly air leakage							
E.7.8.2	No water leakage through door assembly							
E.7.8.3	Acoustic requirement for door assembly							
E.7.8.4	Durability of doors				<u> </u>			
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Category 1 Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of Evaluation of** TESTING AND ANALYSIS PROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical & Documentation Legend Elements Intercept: E.8 Exterior Envelope-Walls, Doors and Windows/Durability/Time Reliability H -Housing Unit Ma -Material Computations/ Analysis Test Data/ Industry Cert. (Function) HS -Housing System C -Component Examination Testing to be Done Completed M -Module Criteria (symbol circled) Number Subject Remarks E.8.1.1 Effective life of scalants E.8.2.1 Performance and renewability of finish of exterior walls, doors and windows E.8.2.2 Protection of exterior metal E.8.2.3 masonry E.8.3.1 Distortion of exterior cladding E.8.4.1 Thermal movement of exterior walls, doors and windows E.8.5.1 Exterior door warpage

Housing Syst	em Producer:		ategor		Cate	gory II	SUMMARY FORM FOR
	e: Multifamily High Rise (Guide Criteria Vol. 1)		aluations & S			ation of	TESTING AND ANALYSIS PROGRAM
Intercept: E.	9 Exterior Envelope-Walls, Doors and Windows/Spatial Characteristics and		cumen		Elements		Legend
	Windows/Spatial Characteristics and Arrangement .	ecs.	Computations/ Analysis	cert.	ion	u o	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed
Criteria		Review of Plans/Specs.	nputa slysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)
Number	Subject	Rev	Con	Test	Exa	Test be I	Remarks
E.9.1.1	Communication with public play area						

Building Ty	ousing System Producer:  oilding Type: Multifamily High Rise (Guide Criteria Vol. !)  tercept: F.1 Exterior Envelope-Roof-Ceiling, Ground		Category I  Evaluation of Plans & Specs. & Documentation			gory !! ation of sical eents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria	Floor/Structural Serviceability	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)	
Number	Subject	Piev.	Cem	Test	Exa	Test be [	Remarks	
F.1.1.1	Roof - vertical deflection							
F.1.2.1	" - vibrations							
		-						
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Housing Syste	em Producer:		itegor			gory II	SUMMARY FORM FOR	
Building Type	e: Multifamily High Rise (Guide Criteria Vol. 1)	Evaluation of Plans & Specs.				ation of	TESTING AND ANALYSIS PROGRAM	
Intercept: F. 2	ntercept: F. 2 Exterior Envelope-Roof-Ceiling, Ground		& Documentation			ients	Legend	
	Floor/Structural Safety	ecs.	Computations/ Analysis	Ser.	ion		Ma -Material H -Housing Unit C -Component HS -Housing System M -Module -Completed	
Criteria		Review of Plans/Specs.	nputa	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)	
Number	Subject	Plar	Con	Test	Exa	Test	Remarks	
F.2.1.1(a)	Roof/load capacity - load supporting structure						•	
(b)	" " - non-load supporting elemen	tts						
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Building Ty	Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept F. 4 Exterior Envelope-Roof-Ceiling, Ground		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of rsical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria Number	Floor/Fire Safety Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)  Remarks	
F.4.1.1 F.4.2.1	Roof-ceiling - fire resistance " - fire stops							
F.4.2.2 F.4.3.1 F.4.4.1	" " - no through openings " " - flame spread " " - roofing class	<u>.</u>				·		
F.4.5.1	" - smoke generation							
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Housing Sy	stem Producer:	C	ategory	/ 1	Cate	gory II	SUMMARY FORM FOR
Building Ty	pe: Multifamily High Rise (Guide Criteria Vol. 1)	Evaluation of Plans & Specs. & Documentation			Evaluation of Physical Elements		TESTING AND ANALYSIS PROGRAM  Legend
mercepi. <u>1</u>	F.7 Exterior Envelope-Roof-Ceiling, Ground Floor/Atmospheric Environment		<u> </u>	·			Ma - Material H - Housing Unit C - Component HS - Housing System
Criteria		iew of	Review of Plans/Specs. Computations/Analysis Test Data/Industry Cert. Examination	Examination	Testing to be Done	M -Module -Completed (symbol circled)	
Number	Subject	Rev	P C	Tes	Exa	Test	Remarks
F.7.1.1	Flat roof deck construction/moisture or wetting damage						
F.7.2.1	Flat roof construction/condensed moisture damage						
F.7.3.1	Attic space ventilation						
F.7.4.1	Heat transmission through exposed ceiling						
F.7.5.1	Vapor barrier under concrete slab-on-grade	<u> </u>					
F.7.6.1	Crawl space ventilation	-			<u> </u>		
F.7.6.2	Ground cover in crawl space	-			-		
F.7.7.1	Heat loss through floors over unheated spaces	-	-		ļ		
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					17.		

Building Typ	ding Type: Multifamily High Rise (Guide Criteria Vol. 1)  rcept: F.8 Exterior Envelope-Roof-Ceiling, Ground		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
Criteria	Floor/Durability/Time Reliability (Function)	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)
Number	Subject	Rev	Con	Test	Exa	Test be [	Remarks
F.8.1.1	Roofing - service life						
F.8.2.1	" - water penetration resistance						
F.8.3.1	" - wind load "						
F.8.4.1	" - impact "						
	•						

Housing Syst		Evo	tegon luatio	of	Evalue	gory II ation of	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
	tercept: G.1 Fixtures and Hardware/Structural		Plans & Specs. & Documentation			sical nents	Legend
	Serviceability	e GS.	Computations/ Analysis	Cert.	ř		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed
Criteria		Review of Plans/Specs.	nputa alysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)
Number	Subject	Rev	Cor	Tes	Ž.	Tes	Remarks
G.1.1.1	Fixtures - compatibility with deflections						•
(a)	Vertical deflection						
(b)	Drift						
(c)	Horizontal deflection						
(d)	Settlement						
G.1.2.1	Local damage to fixture	<u> </u>					
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Building Type	ilding Type: Multifamily High Rise (Guide Criteria Vol. I)  tercept: H.1 Plumbing/Structural Serviceability		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	Legend
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)
Number	Subject	Sev Plan	Con	Tesi	Exa	Tes	Remarks
H.1.1.1(a)	Plumbing system - vertical deflections						
(b)	" - horizontal drift						•
(c)	" - " deflection						
(d)	" - foundation settlement						
н.1.2.1	Plumbing system vibration						
H.1.3.1(a)	Limit angular rotation of horizontal lines						
(b)	" " vertical lines						
(c)	Loads not to impair proper function						
(d)	No loss of stability or tightness						
II.1.3.2(a)	Fixture rims and supports to carry load	_					
(b)	Center loading of sump	_					

	tem Producer:	- Evo	ategor Iluatio	n of		gory II ation of	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
	ntercept: G.2 Fixtures and Hardware/Structural Safety			tation	Physical Elements		Legend
			Computations/ Analysis	Analysis Test Data/ Industry Cert.	tion		Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed
Criteria		Review of Plans/Specs.	mput alysis	t Dal	Examination	Testing to be Done	(symbol circled)
Number	Subject	Re	S &	F F	Ä	Tes be	Remarks
G.2.1.1	Capacity of fixtures.to transmit load						
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Building Typ	tem Producer: De: Multifamily High Rise (Guide Criteria Vol. I)  S Fixtures and Hardware/Acoustic Environment	Eva Plar	ategor alvations & S ocumer	n of	Evalue Phy	gory (1 ation of visical ments	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
Criteria		Review of Plans/Specs.	nputations/ alysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)
Number	Subject	Rev	Cor	Tes	Ex	Tes be	Remarks
G.5.1.1	Fixtures and hardware/noise generated and transmitted						
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Housing Syst	em Producer:		ategory			gory II	SUMMARY FORM FOR
Building Typ	e: Multifamily High Rise (Guide Criteria Vol. I)	Evaluation of Plans & Specs.			Evaluation of Physical		TESTING AND ANALYSIS PROGRAM  Legend
Intercept: G.	tercept: G.8 Fixtures and Hardware/Durability/Time		& Documentation			nents	
	Reliability (Function)	, S	Computations/ Analysis	Analysis Test Data/ Industry Cert.	.i.		Ma -Material H -Housing Unit C -Component HS -Housing System M -Module -Completed
Criteria		Review of Plans/Specs.	nputa alysis		min at	Examination Testing to be Done	(symbol circled)
Number	Subject	Rev	A C	Tes	Š	Tes be	Remarks
G.8.1.1	Performance of hardware						
G.8.2.1	Mail boxes/slots - convenience and location						
G.8.2.2	" " - size						
G.8.2.3	" " - protection						
G.8.2.4	Mail chute - criteria and location						
						1.0	
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Building Typ	ilding Type: Multifamily High Rise (Guide Criteria Vol. I)  ercept: H.2 Plumbing/Structural Safety		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria			Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)	
Number	Subject	Review of Pians/Specs.	Con	Test	Exa	Test be f	Remarks	
H.2.1.1 H.2.2.1	llangers, supports and inserts not to fail Structural safety not to be impaired							
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Housing Syst	em Producer:	Co	itegor	71	Cata	gory II	SUMMARY FORM FOR
	e: Multifamily High Rise (Guide Criteria Vol. 1)	Evaluation of Plans & Specs.				ation of	TESTING AND ANALYSIS PROGRAM
	tercept: H.3 Plumbing/Health and Safety		& Documentation			rsical —	Legend
		ecs.	Computations/ Analysis	ert.	5		Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed
Criteria		Review of Plans/Specs.	Computa Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)
Number	Subject	%ev Plar	Con	Test	Exa	Lest be [	Remarks
н.з.1.1	Minimum fixtures required						
11.3.1.2	Laundry facilities						•
н.3.1.3	Service sinks or equivalent						
11.3.1.4	Floor drains or equivalent						
H.3.2.1(a)	Roughed in DWV leak test (static)						
(b)	Finished DWV leak test (static)						
(c)	" " (dynamic)						
(d)	Interior storm-drainage system watertightness						
(e)	Water supply system watertightness						
(f)	Safe pans and shower drains watertightness	<u> </u>			<u> </u>		
H.3.3.1(a)	Hot water system - supply to fixtures						
(b)	" " - capacity and safety						
(c)	" ' lines - insulation and return circulation	-			-		
(d)	liot water temperature						
	Intercept H.3 continued on next page						

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Building Type	using System Producer: ilding Type: Multifamily High Rise (Guide Criteria Vol. 1) ercept: H.3 (Continued)		Category 1  Evaluation of Plans & Specs. & Documentation			gory II ation of rsical ments	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM  Legend	
Criteria			Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)	
Number .	Subject	Review of Pians/Specs.	S A	ت م	ΣŠ	ه ۾	Remarks	
H.3.4.1(a)	Hot water system safety devices							
(b)1	Pressure relief valve in c-w supply						3 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
2	Location of T and T-P relief valves							
3	Prohibited devices between relief valve and heater							
4	Location of energy shutoff devices							
	Adequate but not excessive water usage							
	Limit discharge rate at water outlets							
Н.3.6.1	Separation between potable and non-potable water supply systems	-						
H.3.6.2	Air gap at water outlet							
	Devices for preventing backflow							
	Non-toxic materials in water supply system							
	Avoid leaking drain lines above water tanks			-				
	Intercept H.3 continued on next page							

Building Typ	System Producer:  Type: Multifamily High Rise (Guide Criteria Vol. 1)  H.3 (Continued)		Category I  Evaluation of Plans & Specs. & Documentation			gory 11 ation of vsical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM  Legend		
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material HHousing Unit CComponent HS-Housing System MModule -Completed (symbol circled)		
Number	Subject	Re Pre	ک ک	P C	Ä	ه م	Remarks		
Н.3.6.6	Avoid threaded fixture faucets and submergible connectors								
н.3.7.1	Control of vermin and rodents								
H.3.8.1(a)	Prevent emission of unsafe or unsanitary fluids								
(b)	Pneumatic pressures in DWV system								
(c)	Vent terminals - location and closure								
(d)	Area of vent terminals		·			ļ			
(e)	Vents to be pitched		<u> </u>						
(f)	Avoid connections to suds zones					<u> </u>	•		
H.3.9.1(a)	Capacity of drainage stacks					ļ			
(b)	Horizontal drains - flow velocity and capacity								
(c)	Interfixture hydraulic effects								
(d)	Design loads for DWV systems			,					
(e)	Backwater protection								
	Intercept H.3 continued on next page								

Housing Syste	em Producer:	Co	ategor	, I	Cate	gory II	SUMMARY FORM FOR		
-	Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: H.3 (Continued)		Evaluation of Plans & Specs.			ation of	TESTING AND ANALYSIS PROGRAM  Legend		
Intercept: H. 3			& Documentation		Elements				
		e Cs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed		
Criteria		Review of Plans/Specs.	nputa Ilysis			Testing to be Done	(symbol circled)		
Number	Subject	Rev	Con	Test	Exa	Test be I	Remarks		
H.3.9.1(f)	Indirect connections of equipment containing sterile materials								
	Sterrie materials	<u> </u>							
(g)	Sub-sewer drainage								
(h)	Sub-soil drainage								
11.3.10.1(a)	Adequate discharge rates at water outlets				<u></u>				
(b)	Maximum water pressure and water hammer								
(c)	Water system to be designed for the available								
	pressure								
н.3.11.1	Storm water removal by "instantaneous" or								
	"controlled" flow								
н.3.11.2	Prevent storm drainage into sanitary sewer, or						=		
	vice-versa					.			
Н.3.11.3	Trap rain pipes and floor drains to combination								
H.3.11.4	systems Size combination storm-sanitary system as storm								
	systems								
11.3.11.5	Prevent sewer backwater								

Housing Syst	tem Producer:	Co	tegor	/ I	Cate	gory II	SUMMARY FORM FOR
Building Typ	Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Intercept: H.4 Plumbing/Fire Safety		Evaluation of Plans & Specs. & Documentation			ation of vsical ments	TESTING AND ANALYSIS PROGRAM  Lund
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	n to	Ma -Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)
Number	Subject	Reviev Plans/	Comp	Test D Industr	Exami	Testing to be Done	Remarks
H.4.1.1	Plumbing not to contribute to fire spread						
Н.4.1.2	Minimize fire spread through plumbing system						
н.4.1.3	Fire rating of partitions having plumbing						
11.4.3.1	Hazardous areas - sprinkler system						
Н.4.4.1	Standpipes for fire water						
H.4.4.2	Accessibility of standpipes from all floor areas						
H.4.4.3	Location and vertical extension of standpipes						
11.4.4.4	Size of standpipe risers						
H.4.4.5	Standpipe connections and valves - size and location						
11.4.4.6	Water supply rate to standpipe						
11.4.4.7	Siamese connection at street level						
H.4.4.8	Standard for installation of standpipe and hose system						

Building Type:	lousing System Producer:  uilding Type: Multifamily High Rise (Guide Criteria Vol. 1)  ntercept: H.5 Plumbing/Acoustic Environment		Category I  Evaluation of Plans & Specs. & Documentation		Evalue Phy	gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component H5 -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Re P	S &	T es	Ä	p e	Remarks	
1.5.1.1(a)	Plumbing - NC requirement				~			
(b)	" - noise reduction			-				
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Category I Category II Housing System Producer: SUMMARY FORM FOR **Evaluation of Evaluation of** TESTING AND ANALYSIS FROGRAM Building Type: Multifamily High Rise (Guide Criteria Vol. 1) Plans & Specs. Physical Legend & Documentation Elements Intercept: H.7 Plumbing/Atmospheric Environment H -Housing Unit Computations/ Analysis Ma -Material Review of Plans/Specs. C -Component HS -Housing System Examination Testing to be Done M -Module O-Completed Criteria (symbol circled) Number Subject Remarks Prevent condensation on plumbing H.7.1.1

Housing Syst	em Producer:	Co	ategor	y I	Cate	gory II	SUMMARY FORM FOR
Building Typ	tercept: H.8 Plumbing/Durability/Time Reliability		Evaluation of Plans & Specs. & Documentation			ation of sical nents	TESTING AND ANALYSIS PROGRAM  Legend
	(Function)	of secs.	Computations/ Analysis	a/ Cert.	ion	0	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed
Criteria		Review of Plans/Specs.	mpute alysis	Test Data/ Industry Ce	Examination	Testing to be Done	(symbol circled)
Number	Subject	8 E	Ş Ç	Tes Ind	Ä	Tes be	Remarks
H.8.1.1	Plumbing life expectancy .			, and the second of the second			
1.8.2.1(a)	Quality of materials and equipment						
(b)	Acceptability of standard and non-standard materials and equipment						
1.8.3.1	Quality of design and installation						
1.8.4.1	Self-scouring velocities in horizontal drains	<u> </u>					
1.8.4.2	Access for cleaning drains						
11.8.4.3	Functional surfaces - cleanability and soilability						
1.8.4.4(a)	Slope of drain lines						
(b)	Avoid elements that retard flow						
(c)	Crossflow of waste water prohibited						
(4)	Maximum length of trap arms						
(e)	Avoid chilling of drain lines						
	Intercept H.8 continued on next page	1					

	em Producer:	Evo	ategor	n of		gory II ation of	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
	tercept: II.8 (Continued)		Plans & Specs. & Documentation			rsical nents	Legend
:		50	Computations/ Analysis	Ser.	noi		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed
Criteria		Review of Plans/Specs.	nputa	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)
Number	Subject	Rev Plan	Con	Tes	Exa	Tes	Remarks
H.8.4.4(f)	Bases of submergible vents washed by small fixtures			_			
(g)	Minimum sizes of dry vents below flood level						
(h)	Washing of vents to horizontal drains						
(i)	Geometrical aspects of fittings in drainage system design	-					
(j)	Vent grading (pitch)	-					
II.8.4.5(a)	Shutoff of building water supply outside building						
(b)	Interior building water supply shutoff						
(c)	Water tank shutoff					V :	
(d)	" shutoff of each riser						
(e)	Shutoff of water supply to each dwelling unit						
(f)	Shutoff to each WC						
(g)	Water heating equipment shutoff	-					
	Intercept H.8 continued on next page						

	e: Multifamily High Rise (Guide Criteria Vol. !)	Eva	stegon	of pecs.	Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria	Intercept: H.8 (Continued)  Criteria		Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Review of Plans/Specs.	A G	Tes	Exa	Tes be	Remarks	
(i)	Shutoff devices - hydraulic characteristics  Draining of water supply system  Access for inspection and servicing							
H.8.4.6	Pressure control of pump supplies  Metering of water supply					- AND		
11.8.4.8	Pressure and temperature indicators, and control devices							
H.8.4.9	Standby power and duplex equipment - sewage, areaway storm water and subsoil water below sewer							
H.8.4.10	Standby power and duplex equipment - water supply							
H.8.5.1	Freeze protection							
H.8.6.1	External corrosion protection - piping							
H.8.6.2	Internal " " - "							
H.8.6.3	" - equipment  Intercept H.8 continued on next page					a de la compansa de l		

Building Typ	using System Producer: Iding Type: Multifamily High Rise (Guide Criteria Vol. 1) ercept: II.8 (Continued)		Category I  Evaluation of Plans & Specs. & Documentation			gory II ction of csical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM  Legend
Criteria		Review of Plans/Specs.	Computations/ Analysis	t Data/ ustry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)
Number	Subject	Rev	Con	Test	Exo	Tes	Remarks
H.8.6.4	Staining by water supply			or 11 months of the con-	-	THE REAL PROPERTY NAME AND ADDRESS OF THE PARTY.	
11.8.6.5	Minimize electrolysis and particulate deposition						
11.8.6.6	Maximum water pipe velocities			,			
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: I.1 Mechanical Equipment, Appliances/Structural  Serviceability  Criteria			Category I  Evaluation of Plans & Specs. & Documentation			gory 11 ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend		
			putations/ lysis	Test Data/ Industry Cert.	Examination	Examination Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)		
Number	Subject	Review of Plans/Specs.	Com	Test	Exa	Test be [	Remarks		
1.1.1.1	Mechanical equipment to accommodate structure deflection								
1.1.2.1	Vibrations caused by mechanical equipment								
		-							

-	ng System Producer:			y I n of	Category II  Evaluation of		SUMMARY FORM FOR TESTING AND ANALYSIS FROGRAM
	Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: I.2 Mechanical Equipment, Appliances/Structural					sical nents	Legend
	Safety				tion	0	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	min.	Examination Testing to be Done	(belonis lodmys)
Number	Subject	Rev	A Cor	Tes	Ϋ́	Tes	Remarks
1.2.1.1	Structural failure caused by mechanical equipment/failure of inserts and hangers					2	•
1.2.2.1	Structural failure caused by installation of mechanical equipment						
		<u> </u>					
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: I.3 Mechanical Equipment, Appliances/Health and			Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of rsical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend		
Safety  Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma -Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)		
Number	Subject	P &	3 4	9 <u>r</u>	E Te		Remarks		
1.3.1.1	Heating and cooling system - conformance to recognized safety standards				analismente dale				
.3.1.2	Guarding of operating equipment								
.3.1.3	Marking of exposed connections								
.3.1.4	Protection from hot pipes								
-									
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	Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: I.4 Mechanical Equipment, Appliances/Fire Safety		Category I Evaluation of Plans & Specs. & Documentation		Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend
		of specs.	Computations/ Analysis	ıta/ / Cert.	ation	ф Ф	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed
Criteria Number	Subject	Review of Plans/Specs.	Compu	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)  Remarks
I.4.1.1	INVAC - safe materials and assemblies						•
I.4.1.2	Protected openings						
I.4.1.3	Vertical risers and access doors in protected shafts						
I.4.1.4	Smoke detecters: smoke dampers, alarm, fan shutoff						
							•
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: I.5 Mechanical Equipment, Appliances/Acoustic				Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend		
Environment  Criteria			Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)		
Number	Subject		Rev	Con	Test	Ä	Test be [	Remarks		
	Mechanical equipment/NC requirement									
(b)	" /noise reduction									
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		Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)				Evo	ategon Iluation ns & S <sub>I</sub>	of oecs.	Category II  Evaluation of Physical		SUMMARY FORM FO TESTING AND ANALYSIS PROGRAM	
	Intercept: I	I.6 Mechanical Equipment, Appliances/Illuminated Environment				Review of Plans/Specs. Computations/Analysis Test Data/Industry Cert.			ents	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed		
_	Criteria	T 21				Review of Plans/Specs.	omput	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)	
_	Number	Subject				~ ~	0 4			F- 4	Remarks	
I	.6.1.1	Lighting of e	equipment rooms									
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)		Category I Evaluation of		n of	Category II  Evaluation of Physical Elements		SUMMARY FORM FOI TESTING AND ANALYSIS PROGRAM	
	7 Mechanical Equipment, Appliances/Atmospheric	Plans & Specs. & Documentation					Legend  Ma - Material H - Housing Unit	
Environment		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	nation g to	C -Component HS -Housing System  M -Module -Completed (symbol circled)	
Number	Subject	Revie	Comp	Test I	Exam	Testing to be Done	Remarks	
1.7.1.1	Provide heating and/or cooling			*** ***********************************				
1.7.1.2(a)	Capacity to maintain 75 degrees F		National Property Co.			Automorphic rest report to the second		
(b)	Automatic control							
(c)	Temperature and velocity variation							
(d)	Relative humidity control							
(e)	Air filtration				İ			
(f)	Duct leakage							
I.7.1.3	Multiple heat generators							
1.7.1.4	Stand-by heating source	<u> </u>						
1.7.1.5	Auxiliary components							
1.7.2.1	Prevent condensate on a/c supply duct							
1.7.3.1	Control humidity in high humidity areas							
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Building Type	Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)  Intercept: I.8 Mechanical Equipment, Appliances/Durability/		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of rsical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Time Reliability (Function)  Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Examination Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject •	Rey	A Co	Tes Ind	Exc	Tes be	Remarks	
1.8.1.1	Duct performance requirements							
1.8.1.2	Damage to adjacent elements caused by ducts							
1.8.2.1	HVAC - reliable operation				n middigfarmanain at a mhi			
1.8.2.2	" - ease of maintenance							
1.8.3.1	Elevator capacity, speed, etc.					<u> </u>		
1.8.3.2	" safety							
1.8.3.3	" operation on emergency power							
1.8.3.4	" emergency fire operation				ļ	ļ		
I.8.4.1(a)	Range/oven - capacity and function	ļ						
(b)	" - safety		·					
(c)	" " - durability and maintainability	ļ	ļ		<u> </u>			
(d)	" - appearance	ļ						
I.8.5.1(a)	Refrigerator - capacity and function							
(b)	" - safety		ļ. <u></u> .					
(c)	" - durability and maintainability							
	Intercept I.8 continued on next page							

Housing Syst	em Producer:		itegor		Cate	gory II	SUMMARY FORM FOR
	e: Multifamily High Rise (Guide Criteria Vol. 1)	Evaluation of Plans & Specs.			Evaluation of Physical Elements		TESTING AND ANALYSIS PROGRAM  Legend
Intercept: I.	8 (Continued)		Documentation				
		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	fion		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed
Criteria		iew o	npote alysis	t Dat	Examination	Testing to be Done	(symbol circled)
Number	Subject	Rev	A Co	Tes	Exo	Tes be	Remarks
1.8.5.1(d)	Refrigerator - appearance						•
(e)	" - noise and vibration			<u> </u>	·.		
1.8.6.1	Garbage and trash systems						
1.8.6.2	" " - no incineration						
1.8.6.3	" " - compaction				ļ		
1.8.6.4	" " - fire resistant room, etc.						
1.8.6.5	" " - impact resistance						
1.8.7.1	Mechanical equipment - function and adequacy						
1.8.7.2	" - safety						
I.8.7.3	" - air pollution						
1.8.7.4	" - noise and vibration						
1.8.7.5	" - structural service-	ļ		-			
	aville, and safety						4-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
I.8.7.6	Mechanical equipment - durability and reliability						
1.8.7.7	Mechanical equipment - maintainability						

Housing Syst	em Producer:		ategon			gory II	SUMMARY FORM FOR
	e: Multifamily High Rise (Guide Criteria Vol. 1)		iluation ns & Sp			ation of sical	TESTING AND ANALYSIS PROGRAM
Intercept: J.	.1 Power, Electrical Distribution,		& Documentation		Elements		Legend  Ma - Material H - Housing Unit
	Communications/Structural Serviceability	, ä	lions/	a/ Cert.	e O		C -Component HS -Housing System M -Module -Completed
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Ce	Examination	Testing to be Done	(symbol circled)
Number	Subject	Rev	Pa Co	Test	Exa	Tesl	Remarks
J.1.1.1	Settlement - effect on powerlines						
						· · · · · · · · · · · · · · · · · · ·	

	em Producer: e: Multifamily High Rise (Guide Criteria Vol. I) 2 Power, Electrical Distribution,	Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria	Communications/Structural Safety		Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symLol circled)	
Number	Subject	Review of Plans/Specs.	Con	Test Indu	Exa	Test be l	Remarks	
J.2.1.1	Power elements *- effect on structural safety							

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Housing Sy	stem Producer:		itegon			ory II	SUMMARY FORM FOR
	pe: Multifamily High Rise (Guide Criteria Vol. 1)  .4 (Continued)	Plar	ıs & Sı		Phy		Legend
		ecs.	Computations/ Analysis	cert.	ion		Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed
Criteria		Review of Flans/Specs.	nputa olysis	Test Data/ Industry Cert.	Examination	Testing to be Done	(symbol circled)
Number	Subject	Pia P	O And	Tes Ind	Exa	Tes be	Remarks
J.4.3.2	Exit signs						•
J.4.4.1	Lightening protection						
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Housing Syst	tem Producer:	C	ategor	/ 1	Cate	gory II	SUMMARY FORM FOR	
Building Typ	e: Multifamily High Rise (Guide Criteria Vol. 1)	Plan	aluation ns & Sp ocumen	pecs.	Phy	ation of rsical	TESTING AND ANALYSIS PROGRAM  Legend	
Intercept: J.	5 Power, Electrical Distribution,  Communications/Acoustic Environment		T			Elements	Ma-Material H -Housing Unit C -Component H5 -Housing System	
Criteria		Review of Plans/Specs.	nputa	Test Data/ Industry Cert.	Examination	Testing to be Done	M -Module -Completed (symbol circled)	
Number	Subject	P Re	P S	Tes	<u> </u>	Tes be	Remarks	
J.5.1.1(a)	Power, electrical distribution and communications - NC requirements							
(b)	Power, electrical distribution and communications - noise reduction			,				
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Housing Syst	tem Producer:	C	otegor	y I	Cate	gory II	SUMMARY FORM FOR
Building Typ	tercept: J.8 Power, Electrical Distribution,  Communications/Durability/Time Reliability		Evaluation of Plans & Specs. & Documentation			ation of vsical ments	TESTING AND ANALYSIS PROGRAM  Legend
	Communications/Durability/Time Reliability (Function)	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	ation	9 .	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed
Criteria		iew ns/S	nput	t Dai	Examination	Testing to be Done	(symbol circled)
Number	Subject	Rev	Cor	Tes	Exa	Tes	Remarks
J.8.1.1	Main breaker capacity						
J.8.1.2	" - conformance to N.E.C.						
J.8.2.1(a)	Power characteristics						
(b)	Electrical distribution system - characteristics						
(c)	Electrical distribution system - capacity						
(d)	" - safety						
(e)	" - durability						
J.8.2.2	Emergency power - distribution						
J.8.3.1.	" electric power - need						
J.8.3.2	" - automatic initiation	-					
J.8.3.3	Emergency electric power - items to be powered						
J.8.3.4	" - 96-hour operation	l					
J.8.3.5	" - periodic check						
	Intercept J.8 continued on next page						

Building Ty	ousing System Producer:  uilding Type: Multifamily High Rise (Guide Criteria Vol. I)  ntercept: J.8 (Continued)		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Re	\$ °C	Tes	Ä	be d	Remarks	
J.8.3.6	Emergency electric power - conformance to mechanical equipment requirement							
J.8.4.1	Telephone wiring		to change make a					
J.8.4.2	" - compatibility with local company							
J.8.5.1	Intra-building communication							
J.8.6.1	Master TV signal distribution							
J.8.6.2	" - capacity							
J.8.6.3	" " - construction							
J.8.6.4	" " durability	_						
		_			<u> </u>			
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Building Ty	stem Producer:  pe: Multifamily High Rise (Guide Criteria Vol. I)  .2 Lighting Elements/Structural Safety	Cotegory I  Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Rev	P G	Tes	Ÿ	Tes be	Remarks	
K.2.1.1	Lighting elements - strength of connections						•	
		_						
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Building Typ	ystem Producer:  ype: Multifamily High Rise (Guide Criteria Vol. 1)  K.4 Lighting Elements/Fire Safety		Category I  Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Examination Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)
Number	Subject	Rev	Col	Test	Exa	Test be	Remarks
K.4.1.1 K.4.2.1	Lightening Fixtures - fire hazard						
K.4.3.1	" - flame spread " - smoke generation				eren urmayar saana al		
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sing System Producer:						SUMMARY FORM FOR	
ding Type: Multifamily High Rise (Guide Criteria Vol. 1)		Evaluation of Plans & Specs.				TESTING AND ANALYSIS PROGRAM	
		& Documentation				Legend	
	es.	tions/	t Data/ ustry Cert.	ion	mination ing to Jone	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed	
	iew o	aputa alysis		mina		(symbol circled)	
Subject *	Pie Re	Com	Test	Exa	Test be 6	Remarks	
Lighting element/NC requirement						•	
" /noise reduction		<u> </u>					
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						<del>la de la composition de la composition de la composition de la composition de la composition de la composition de</del> La composition de la composition de la composition de la composition de la composition de la composition de la	
	Subject  Lighting elements/Acoustic Environment  Subject  '' /noise reduction	Eve: Multifamily High Rise (Guide Criteria Vol. 1)  S Lighting Elements/Acoustic Environment  Subject  Lighting element/NC requirement  " /noise reduction	Evaluation Plans & S  B. Lighting Elements/Acoustic Environment  Subject  Lighting element/NC requirement  " /noise reduction  Evaluation Plans & S  & Document  Subject  Lighting element/NC requirement  " /noise reduction	Evaluation of Plans & Specs. & Documentation  Lighting Elements/Acoustic Environment  Subject  Subject  Lighting element/NC requirement  " /noise reduction  Evaluation of Plans & Specs. & Documentation  Lighting element/NC requirement  " /noise reduction	Evaluation of Plans & Specs. & Documentation  Subject  Subject  Lighting element/NC requirement  Lighting element/NC requirement  " /noise reduction  Evaluation of Plans & Specs. & Documentation  Lighting element/NC requirement  " /noise reduction	e: Multifamily High Rise (Guide Criteria Vol. I)  S Lighting Elements/Acoustic Environment  Evaluation of Plans & Specs. & Documentation  Flans & Specs. & Documentation  Subject  Evaluation of Plans & Specs. & Documentation  Flans & Specs. & Documentation  Fraction of Physical Elements  Evaluation of Physical Elements  Evaluation of Physical Elements  Lighting element/NC requirement  " /noise reduction  I plans & Specs. & Documentation  Evaluation of Physical Elements  Evaluation of Physical Elements  Evaluation of Physical Elements  Evaluation of Physical Elements  Evaluation of Physical Elements  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  I plans & Specs. & Documentation  Evaluation of Physical Elements  Evaluation o	

Building Typ	sing System Producer:  ding Type: Multifamily High Rise (Guide Criteria Vol. I)  rcept: K.6 Lighting Elements/Illuminated Environment		Category I Evaluation of Plans & Specs. & Documentation			gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module — -Completed (symbol circled)	
Number	Subject	8. 5	ۍ پ	Tes	Ä	Te.	Remorks	
K.6.1.1(a)	Lighting elements - minimum requirements							
(b)	" - location of wall switches							
(c)	" - noise				:			
(d)	" - durability, maintainability							
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		<u> </u>						
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Building Type	em Producer: e: Multifamily High Rise (Guide Criteria Vol. 1) 3 Enclosed Spaces/Health and Safety	Evo	ategon alvation ns & Sp ocumen	n of pecs.	Evalue Phy	gory II ation of sical nents	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module — -Complete d (symbol circled)
Number	Subject	Rev	And	Tes	Exa	Tes	Remarks
L.3.1.1(a)	Elements causing falls						
(b)	Casualties from fires						
(c)	Heating and cooking equipment hazards				<u> </u>		
(d)	Sharp edges; pointed projections, glass doors and enclosures	in a secondaria de la companio de la					
(e)	Enclosed spaces openable from inside						
(f)	Fixtures and fittings securely mounted or fastened						
(g)	Ingress of insects, rodents, etc.						
(h)	Floor surfacing						• 10 10 10 10 10 10 10 10 10 10 10 10 10
(i)	Security from criminal activity						
(i)_	Lighting to provide safety						
(k)	Projecting awnings or hoods						
A CONTRACTOR OF THE CONTRACTOR	Intercept L.3 continued on next page				1		

Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: L, 3 (Continued)  Criteria		Category I Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYS'S PROGRAM  Legend  Ma - Material H - Housing Unit	
		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module -Completed (symbol circled)	
Number	Subject	Re	A Co	Tes	Exc	Tes be	Remarks	
2 3 4 (b)1 2 3	Slipperiness/floor surface  Change in slipperiness factor  Slipperiness increases with wetting  '' of tub and shower surfaces  Rough surfaces, carpet weaves, sills, etc.  Changes in floor level  Stair and balcony railings  Windows: ease of opening; sills, guards; cleanability							
	Means of egress							
L.3.3_1	Personal security from criminal acts	-	1					

Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. 1)		Category I Evaluation of Plans & Specs.			Category II  Evaluation of Physical		SUMMARY FORM FOR
							TESTING AND ANALYSIS PROGRAM
Intercept:	L.4 Enclosed Spaces/Fire Safety		& Documen			ients	Legend
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	0 .	Ma-Material HHousing Unit CComponent HS-Housing System MModule
		iew o	nput slysis			Testing to be Done	(symbol circled)
Number	Subject	Rev	Ş Ğ	Tes Ind	, x	Tes be	Remarks
4.0.1	Summary table/fire criteria						
.4.1.1	Doors - self closing/automatic closing						<u> </u>
.4.1.2	" - direction of opening						
.4.1.3	" - fire resistance						
4.1.4	Exit doors/temperature rise						
4.2.1	Exits						
4.2.2	" - minimum per floor						
4.2.3	Stairwells			<u> </u>			
4.2.4	Width of corridors and stairways						
4.2.5	Exterior balcony used as exit						
.4.2.6	Stairs						•
.,4,2,7	Exit_doors						
4.2.8	"signs						
4.2.9	Smoke proof tower						
.4.2.10							

Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: L.5 Enclosed Spaces/Acoustic Environment			Category I  Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend		
Criteria		Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module — Completed (symbol circled)			
Number	Subject				Rey	Col	Tes	Ä	Tes be	Remarks
5.1.1	Total system:	enclosed s	pace noise	levels						
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: L.6 Enclosed Spaces/Illuminated Environment  Criteria		Category I  Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend
		Review of Plans/Specs.	iputations/ Ilysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma-Material H -Housing Unit C -Component HS -Housing System M -Module — Completed (symbol circled)
Number	Subject	Rev	Con	Test Indv	Exa	Test	Remarks
L.6.1.1	Admission of natural light			1.0000000000000000000000000000000000000			
L.6.2.1	Lighting elements - capacity	_	THE REST OF SHIPE				
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: L.7 Enclosed Spaces/Atmospheric Environment  Criteria		Category I  Evaluation of Plans & Specs. & Documentation			Category II  Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM Legend	
		Review of Flans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Ma - Material H - Housing Unit C - Component HS - Housing System M - Module - Completed (symbol circled)	
Number	Subject	Reg P. B.	S &	Tes Ind	Ě	Tes	Remarks	
L.7.1.1	Natural ventilation of habitable rooms							
L.7.1.2	Mechanical ventilation requirements							
L.7.1.3	" for summer comfort	_						
L.7.1.4	Prevention of air interchange between dwelling units							
L.7.1.5	Positive exhaust into common ducts serving kitchen and bathroom							
L.7.2.1	Maximum air infiltration into living units							
L.7.3.1	Conditioning of intake air							
					<u> </u>			
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Housing System Producer:  Building Type: Multifamily High Rise (Guide Criteria Vol. I)  Intercept: L.9 Enclosed Spaces/Spatial Characteristics			Evaluation of Plans & Specs. & Documentation			gory 11 ation of	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM  Legend  Ma - Material H - Housing Unit
						nents	
and Arrangement  Criteria		Review of Plans/Specs.	putation lysis	Test Data/ Industry Cert.	Examination	Testing to be Done	C -Component HS -Housing System M -Module -Completed (symbol circled)
Number	Subject	Revi	Revi Plan Com Ana		Exar	Testi be D	Remarks
L.9.1.1	Reference to subsequent criteria						
L.9.2.1	Living area		<u></u>				
L.9.3.1	Dining area						
L.9.4.1	Kitchen location						
L.9.4.2	" space			<u>.</u>			
L.9.4.3	" light and ventilation						
L.9.4.4	" range/fire protection and safety			<u> </u>			
L.9.5.1	Laundry spaces						
L.9.6.1	Bedroom spaces						
L.9.7.1	Bathroom spaces						
L.9.8.1	Bedroom closets						
L.9.9.1	Doorways						
L.9.9.2	Habitable rooms/natural lighting and ventilation						
				7			