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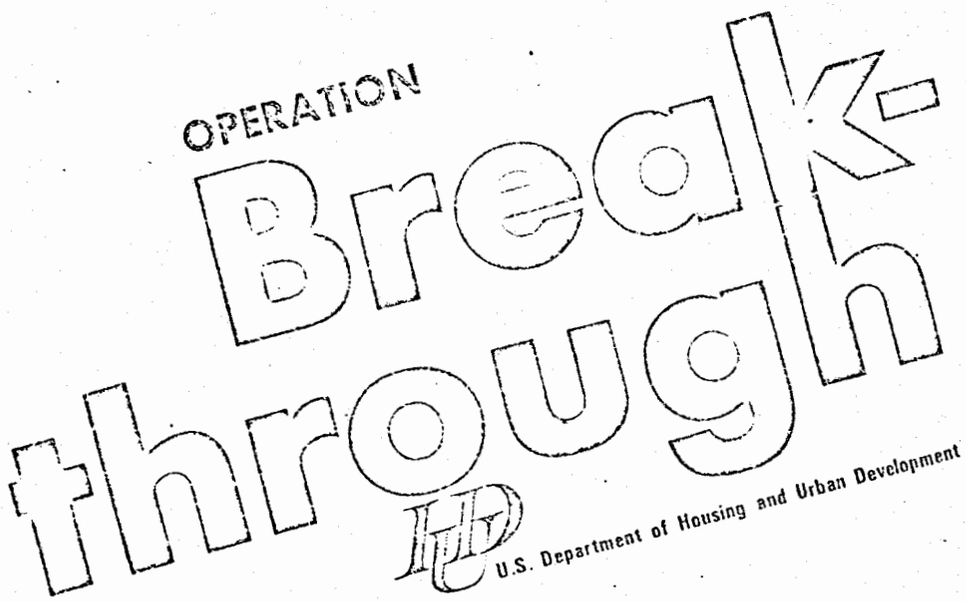
OPERATION Breakthrough

U.S. Department of Housing and Urban Development



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

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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

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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,

*(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.

D. 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.

H. 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,
C - component
M - module
H - housing unit, and
Hs - housing system.

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 erected 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 Hueneme, 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.

Built Elements			Attributes								
			STRUCTURAL SERVICEABILITY	STRUCTURAL SAFETY	HEALTH AND SAFETY	FIRE SAFETY	ACOUSTIC ENVIRONMENT	ILLUMINATED ENVIRONMENT	ATMOSPHERIC ENVIRONMENT	DURABILITY/TIME RELIABILITY (FUNCTION)	SPATIAL CHARACTERISTICS AND ARRANGEMENT
			1	2	3	4	5	6	7	8	9
STRUCTURE		A									
INTERIOR SPACE DIVIDERS	WALLS AND DOORS, INTER-DWELLING	B									
	WALLS AND DOORS, INTRA-DWELLING	C									
	FLOOR-CEILING	D									
EXTERIOR ENVELOPE	WALLS, DOORS AND WINDOWS	E									
	ROOF-CEILING, GROUND FLOOR	F									
FIXTURES AND HARDWARE		G									
PLUMBING		H									
MECHANICAL EQUIP-MENT, APPLIANCES		I									
POWER, ELECTRICAL DISTRIBUTION, COMMUNICATIONS		J									
LIGHTING ELEMENTS		K									
ENCLOSED SPACES		L									

Figure 2

Housing System Producer: XYZ Corporation

Building Type: Multifamily Low Rise (Guide Criteria Vol. II)

Intercept:

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.1.1.1	Vertical deflection						
(a)	Performance criteria (1D+1L+1C)			M			
.							
.							
.							
D.4.3.1	Floor-ceiling-smoke generation					C	
.							
.							
.							
E.7.3.1	Air infiltration through wall system			(C)			All tests documented except door infiltration
.							
.							
.							
F.8.1.1	Service life of roofing			(C)	C		Systems available for examination
.							
.							
.							
F.8.2.1	Water penetrations-resistance of roofing					C	
.							
.							
.							

Figure 3

SCHEDULE OF PHYSICAL TESTING

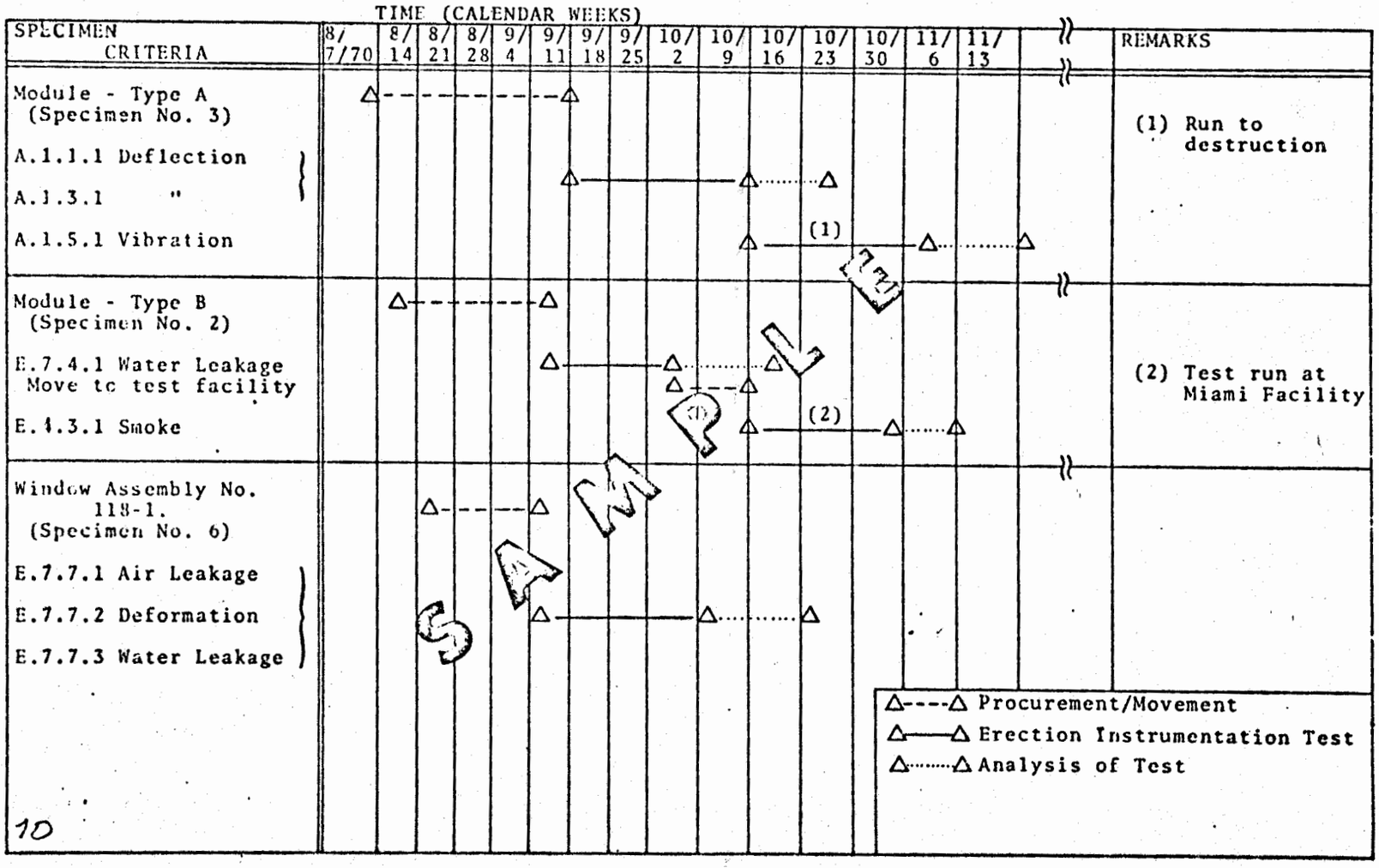

Figure 4

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.1 Structure/Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.1.1.1(a)	Structure/Vert. Deflect. - Performance Criteria						
(b)1	" " " - floor (1D+1L)						
2	" " " - roof (1D+1L)						
3	" " " - floor (1D+1D+creep)						
4	" " " - 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						
(b)	" " " - Exterior Walls						
1	(0.9D+1W)						
2	(1D+1L+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 Intercept continued on next page						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.1 (Continued)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.1.5.1(a)	Structure/Vibrations - Transient (25lb x 3ft)						
(b)	" " - Steady-state						
(c)	" " - Environmental						
A.1.6.1(a)	Structural Elements/Local Damage - Vertical						
(b)	" " " " - Horizontal						
A.1.7.1	Structure/Expansion and Contraction						
(a)	Performance Criteria						
(b)	Deflections						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.2 Structure/Structural Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.2.1.1	Structure/Load Capacity						
(a)	1.4D+1.7L						
(b)	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						
(a)1	100 cycles: 1D to (1D+0.5L)						
2	1000 cycles: 1D to (1D+0.5W)						
(b)	S cycles: (1D+E) to (1D-E)						
128	A.2 Intercept continued on next page						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.2 (Continued)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		Remarks
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	
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						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.4 Structure/Fire Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.4.1.1	Structural Components - Fire Resistance						
A.4.1.2	" Connections - " "						
A.4.2.1	" Elements - Potential Heat						
A.4.3.1	Sprayed fire protection						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.5 Structure/Acoustic Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material
C -Component
M -Module
H -Housing Unit
HS -Housing System
◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.5.1.1	Structure borne noise						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: A.8 Structure/Durability/Time Reliability

(Function)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
A.8.1.1	Eliminate continuous voids						
A.8.1.2	Provide adequate vapor barriers and ventilation						
A.8.2.1	Structural/time reliability						
A.8.3.1	Static and dynamic deflections						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: B.1 Interior Space Dividers-Walls and Doors, Inter-Dwelling/Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
B.1.1.1	Inter-dwelling walls/deflections - load supporting						
B.1.1.2	Inter-dwelling walls/deflections - non-load supporting						
B.1.2.1	Inter-dwelling walls/foundation settlement						
B.1.3.1	" " " /local damage						
(a)	150 lb anywhere						
(b)	200 lb 3in above floor						
(c)	10 psf						
(d)	Attached shelves or 40 lb/ft at eccentricity of 6in + t/2						
(e)	Impact						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: B.2 Interior Space Dividers-Walls and Doors, Inter-Dwelling/Structural Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
B.2.1.1(a)	Inter-dwelling walls/load capacity - load supporting						
(b)	Inter-dwelling walls/load capacity - non-load supporting						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: B.4 Interior Space Dividers, Walls and Doors, Inter-Dwelling/Fire Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
B.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 System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: B.5 Interior Space Dividers-Walls and Doors, Inter-Dwelling/Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
B.5.1.1	Inter-dwelling walls - airborne noise						
B.5.1.2	" " noise insulation between enclosed spaces						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: C.1 Interior Space Dividers-Walls and Doors, Intra-Dwelling/Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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 lb 3in above floor						
(c)	10 psf						
(d)	Attached shelves or 40 lb/ft at eccentricity of 6in + t/2						
(e)	Impact						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: C.2 Interior Space Dividers-Walls and Doors, Intra-Dwelling/Structural Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
C.2.1.1(a)	Intra-dwelling walls/load capacity - load supporting						
(b)	Intra-dwelling walls/transfer of loads - non-load supporting						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: C.4 Interior Space Dividers-Walls and Doors, Intra-Dwelling/Fire Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
C.4.1.1	Intra-dwelling walls - fire stops						
C.4.2.1	" " " - flame spread						
C.4.3.1	" " " - smoke generation						

Housing System Producer: "

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: C.5 Interior Space Dividers-Walls and Doors, Intra-Dwelling/Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
C.5.1.1	Intra-dwelling walls - airborne noise						
C.5.1.2	" " noise isolation between enclosed spaces						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: C.8 Interior Space Dividers-Walls and Doors, Intra-Dwelling/Durability/Time Reliability (Function)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
C.8.1.1	Performance of the final finish						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: D.1 Interior Space Dividers-Floor-Ceiling/ Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
D.1.1.1	Floor-ceiling assembly/deflections						
D.1.2.1	" " " /foundation settlement						
D.1.3.1(a)	Local damage/structural vibrations - floors						
(b)	" " /steady-state vibrations - ceiling						
D.1.4.1	Local damage to floor-ceiling assembly						
(a)	750 ft-lb impact						
(b)	400 lb concentrated load						
(c)	Ceilings - 5D or 4 psf						
D.1.5.1	Local damage to protruding elements 500 lb horizontally						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: D.2 Interior Space Dividers-Floor-Ceiling/ Structural Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
D.2.1.1	Floor-ceiling/load capacity						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: D.4 Interior Space Dividers-Floor-Ceiling/Fire Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	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						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: D.5 Interior Space Dividers-Floor-Ceiling/ Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Modulo; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
D.5.1.1	Floor-ceiling assembly/airborne noise and impact						
D.5.1.2	Inter-dwelling noise isolation and impact insulation between enclosed spaces						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: D.8 Interior Space Dividers-Floor-Ceiling/ Durability/Time Reliability (Function)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	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						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: E.1 Exterior Envelope-Walls, Doors and Windows/Structural Serviceability

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
E.1.1.1	Exterior wall/local damage						
E.1.2.1	" envelope/horizontal deflections						
E.1.3.1	" " /foundation settelment						
E.1.4.1	Width and movements of joints						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Interçept: E.2 Exterior Envelope-Walls, Doors and Windows/Structural Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
E.2.1.1(a)	Exterior wall/load capacity - load supporting						
(b)	" " " " - non-load supporting						
(c)	Attachment of veneer (5D vertically + 3D horizontally)						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: E.4 Exterior Envelope-Walls, Door and Windows/Fire Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
E.4.1.1	Exterior walls - fire resistance						
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						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: E.5 Exterior Envelope-Walls, Doors and Windows/Acoustic Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
E.5.1.1	Exterior envelope noise attenuation						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: E.7 Exterior Envelope-Walls, Doors and Windows/Atmospheric Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						
E.7.7.2	No damage to window assembly from design windload						
	Intercept E.7 continued on next page						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: E.7 (Continued)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: E.8 Exterior Envelope-Walls, Doors and Windows/Durability/Time Reliability (Function)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
E.8.1.1	Effective life of sealants						
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 System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol: I)

Intercept: E.9 Exterior Envelope-Walls, Doors and Windows/Spatial Characteristics and Arrangement

Criteria		Category I Evaluation of Plans & Specs. & Documentation			Category II Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend Ma -Material H -Housing Unit C -Component HS -Housing System M -Module ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
E.9.1.1	Communication with public play area						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: F.1 Exterior Envelope-Roof-Ceiling, Ground Floor/Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
F.1.1.1	Roof - vertical deflection						
F.1.2.1	" - vibrations						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: F.2 Exterior Envelope-Roof-Ceiling, Ground Floor/Structural Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
F.2.1.1(a)	Roof/load capacity - load supporting structure						
(b)	" " " - non-load supporting elements						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: F.4 Exterior Envelope-Roof-Ceiling, Ground Floor/Fire Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
F.4.1.1	Roof-ceiling - fire resistance						
F.4.2.1	" " - fire stops						
F.4.2.2	" " - no through openings						
F.4.3.1	" " - flame spread						
F.4.4.1	" " - roofing class						
F.4.5.1	" " - smoke generation						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: F.7 Exterior Envelope-Roof-Ceiling, Ground Floor/Atmospheric Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						
F.7.6.1	Crawl space ventilation						
F.7.6.2	Ground cover in crawl space						
F.7.7.1	Heat loss through floors over unheated spaces						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: F.8 Exterior Envelope-Roof-Ceiling, Ground Floor/Durability/Time Reliability (Function)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material
C -Component
M -Module
H -Housing Unit
HS -Housing System
◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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 System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: G.1 Fixtures and Hardware/Structural Serviceability

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.1 Plumbing/Structural Serviceability

Criteria		Category I Evaluation of Plans & Specs. & Documentation			Category II Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend Ma -Material H -Housing Unit C -Component HS -Housing System M -Module ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.1.1.1(a)	Plumbing system - vertical deflections						
(b)	" " - horizontal drift						
(c)	" " - " deflection						
(d)	" " - foundation settlement						
H.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						
H.1.3.2(a)	Fixture rims and supports to carry load						
(b)	Center loading of sump						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: G.2 Fixtures and Hardware/Structural Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material
C -Component
M -Module
H -Housing Unit
HS -Housing System
◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		Remarks
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	
G.2.1.1	Capacity of fixtures to transmit load						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: G.5 Fixtures and Hardware/Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
G.5.1.1	Fixtures and hardware/noise generated and transmitted						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: G.8 Fixtures and Hardware/Durability/Time Reliability (Function)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.2 Plumbing/Structural Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.2.1.1	Hangers, supports and inserts not to fail						
H.2.2.1	Structural safety not to be impaired						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: II.3 Plumbing/Health and Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
II.3.1.1	Minimum fixtures required						
II.3.1.2	Laundry facilities						
II.3.1.3	Service sinks or equivalent						
II.3.1.4	Floor drains or equivalent						
II.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						
II.3.3.1(a)	Hot water system - supply to fixtures						
(b)	" " " - capacity and safety						
(c)	" ' lines - insulation and return circulation						
(d)	Hot water temperature						
	Intercept II.3 continued on next page						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.3 (Continued)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.3.4.1(a)	Hot water system safety devices						
(b)1	Pressure relief valve in c-w supply						
2	Location of T and T-P relief valves						
3	Prohibited devices between relief valve and heater						
4	Location of energy shutoff devices						
H.3.5.1	Adequate but not excessive water usage						
H.3.5.2	Limit discharge rate at water outlets						
H.3.6.1	Separation between potable and non-potable water supply systems						
H.3.6.2	Air gap at water outlet						
H.3.6.3	Devices for preventing backflow						
H.3.6.4	Non-toxic materials in water supply system						
H.3.6.5	Avoid leaking drain lines above water tanks						
	Intercept H.3 continued on next page						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.3 (Continued)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.3.6.6	Avoid threaded fixture faucets and submergible connectors						
H.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						
(e)	Vents to be pitched						
(f)	Avoid connections to suds zones						
H.3.9.1(a)	Capacity of drainage stacks						
(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 System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.3 (Continued)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.3.9.1(f)	Indirect connections of equipment containing sterile materials						
(g)	Sub-sewer drainage						
(h)	Sub-soil drainage						
H.3.10.1(a)	Adequate discharge rates at water outlets						
(b)	Maximum water pressure and water hammer						
(c)	Water system to be designed for the available pressure						
H.3.11.1	Storm water removal by "instantaneous" or "controlled" flow						
H.3.11.2	Prevent storm drainage into sanitary sewer, or vice-versa						
H.3.11.3	Trap rain pipes and floor drains to combination systems						
H.3.11.4	Size combination storm-sanitary system as storm systems						
H.3.11.5	Prevent sewer backwater						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.4 Plumbing/Fire Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.4.1.1	Plumbing not to contribute to fire spread						
H.4.1.2	Minimize fire spread through plumbing system						
H.4.1.3	Fire rating of partitions having plumbing						
H.4.3.1	Hazardous areas - sprinkler system						
H.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						
H.4.4.4	Size of standpipe risers						
H.4.4.5	Standpipe connections and valves - size and location						
H.4.4.6	Water supply rate to standpipe						
H.4.4.7	Siamese connection at street level						
H.4.4.8	Standard for installation of standpipe and hose system						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.5 Plumbing/Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.5.1.1(a)	Plumbing - NC requirement						
(b)	" - noise reduction						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.7 Plumbing/Atmospheric Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.7.1.1	Prevent condensation on plumbing						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.8 Plumbing/Durability/Time Reliability

(Function)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
H.8.1.1	Plumbing life expectancy						
H.8.2.1(a)	Quality of materials and equipment						
(b)	Acceptability of standard and non-standard materials and equipment						
H.8.3.1	Quality of design and installation						
H.8.4.1	Self-scouring velocities in horizontal drains						
H.8.4.2	Access for cleaning drains						
H.8.4.3	Functional surfaces - cleanability and soilability						
H.8.4.4(a)	Slope of drain lines						
(b)	Avoid elements that retard flow						
(c)	Crossflow of waste water prohibited						
(d)	Maximum length of trap arms						
(e)	Avoid chilling of drain lines						
	Intercept H.8 continued on next page						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: II.8 (Continued)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I Evaluation of Plans & Specs. & Documentation			Category II Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
II.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						
(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 II.8 continued on next page						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: H.8 (Continued)

Criteria Number	Subject	Category I: Evaluation of Plans & Specs. & Documentation — Review of Plans/Specs.	Category I: Evaluation of Plans & Specs. & Documentation — Computations/ Analysis	Category I: Evaluation of Plans & Specs. & Documentation — Test Data/ Industry Cert.	Category II: Evaluation of Physical Elements — Examination	Category II: Evaluation of Physical Elements — Testing to be Done	SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM — Remarks
H.8.4.5(h)	Shutoff devices - hydraulic characteristics						
(i)	Draining of water supply system						
(j)	Access for inspection and servicing						
H.8.4.6	Pressure control of pump supplies						
H.8.4.7	Metering of water supply						
H.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						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: II.8 (Continued)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
II.8.6.4	Staining by water supply						
II.8.6.5	Minimize electrolysis and particulate deposition						
II.8.6.6	Maximum water pipe velocities						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.1 Mechanical Equipment, Appliances/Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.1.1.1	Mechanical equipment to accommodate structure deflection						
I.1.2.1	Vibrations caused by mechanical equipment						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.2 Mechanical Equipment, Appliances/Structural Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.2.1.1	Structural failure caused by mechanical equipment/failure of inserts and hangers						
I.2.2.1	Structural failure caused by installation of mechanical equipment						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.3 Mechanical Equipment, Appliances/Health and Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.3.1.1	Heating and cooling system - conformance to recognized safety standards						
I.3.1.2	Guarding of operating equipment						
I.3.1.3	Marking of exposed connections						
I.3.1.4	Protection from hot pipes						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.4 Mechanical Equipment, Appliances/Fire Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.4.1.1	HVAC - 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						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.5 Mechanical Equipment, Appliances/Acoustic Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.5.1.1(a)	Mechanical equipment/NC requirement						
(b)	" " /noise reduction						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.6 Mechanical Equipment, Appliances/Illuminated Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.6.1.1	Lighting of equipment rooms						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.7 Mechanical Equipment, Appliances/Atmospheric Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.7.1.1	Provide heating and/or cooling						
I.7.1.2(a)	Capacity to maintain 75 degrees F						
(b)	Automatic control						
(c)	Temperature and velocity variation						
(d)	Relative humidity control						
(e)	Air filtration						
(f)	Duct leakage						
I.7.1.3	Multiple heat generators						
I.7.1.4	Stand-by heating source						
I.7.1.5	Auxiliary components						
I.7.2.1	Prevent condensate on a/c supply duct						
I.7.3.1	Control humidity in high humidity areas						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.8 Mechanical Equipment, Appliances/Durability/ Time Reliability (Function)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.8.1.1	Duct performance requirements						
I.8.1.2	Damage to adjacent elements caused by ducts						
I.8.2.1	HVAC - reliable operation						
I.8.2.2	" - ease of maintenance						
I.8.3.1	Elevator capacity, speed, etc.						
I.8.3.2	" safety						
I.8.3.3	" operation on emergency power						
I.8.3.4	" emergency fire operation						
I.8.4.1(a)	Range/oven - capacity and function						
(b)	" " - safety						
(c)	" " - durability and maintainability						
(d)	" " - appearance						
I.8.5.1(a)	Refrigerator - capacity and function						
(b)	" - safety						
(c)	" - durability and maintainability						
	Intercept I.8 continued on next page						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: I.8 (Continued)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
I.8.5.1(d)	Refrigerator - appearance						
(e)	" - noise and vibration						
I.8.6.1	Garbage and trash systems						
I.8.6.2	" " " - no incineration						
I.8.6.3	" " " - compaction						
I.8.6.4	" " " - fire resistant room, etc.						
I.8.6.5	" " " - impact resistance						
I.8.7.1	Mechanical equipment - function and adequacy						
I.8.7.2	" " - safety						
I.8.7.3	" " - air pollution						
I.8.7.4	" " - noise and vibration						
I.8.7.5	" " - structural service-ability and safety						
I.8.7.6	Mechanical equipment - durability and reliability						
I.8.7.7	Mechanical equipment - maintainability						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: J.1 Power, Electrical Distribution, Communications/Structural Serviceability

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
J.1.1.1	Settlement - effect on powerlines						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: J.2 Power, Electrical Distribution, Communications/Structural Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
J.2.1.1	Power elements - effect on structural safety						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: J.4 (Continued)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
J.4.3.2	Exit signs						
J.4.4.1	Lightening protection						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: J.5 Power, Electrical Distribution, Communications/Acoustic Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
J.5.1.1(a)	Power, electrical distribution and communications - NC requirements						
(b)	Power, electrical distribution and communications - noise reduction						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: J.8 Power, Electrical Distribution, Communications/Durability/Time Reliability (Function)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						
J.8.3.5	" " " - periodic check						
	Intercept J.8 continued on next page						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: J.8 (Continued)

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
J.8.3.6	Emergency electric power - conformance to mechanical equipment requirement						
J.8.4.1	Telephone wiring						
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						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: K.2 Lighting Elements/Structural Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
K.2.1.1	Lighting elements - strength of connections						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: K.4 Lighting Elements/Fire Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
K.4.1.1	Lightening Fixtures - fire hazard						
K.4.2.1	" " - flame spread						
K.4.3.1	" " - smoke generation						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: K.5 Lighting Elements/Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
K.5.1.1(a)	Lighting element/NC requirement						
(b)	" " /noise reduction						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: K.6 Lighting Elements/Illuminated Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
K.6.1.1(a)	Lighting elements - minimum requirements						
(b)	" " - location of wall switches						
(c)	" " - noise						
(d)	" " - durability, maintainability						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: L.3 Enclosed Spaces/Health and Safety

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
L.3.1.1(a)	Elements causing falls						
(b)	Casualties from fires						
(c)	Heating and cooking equipment hazards						
(d)	Sharp edges; pointed projections, glass doors and enclosures						
(e)	Enclosed spaces openable from inside						
(f)	Fixtures and fittings securely mounted or fastened						
(g)	Ingress of insects, rodents, etc.						
(h)	Floor surfacing						
(i)	Security from criminal activity						
(j)	Lighting to provide safety						
(k)	Projecting awnings or hoods						
	Intercept L.3 continued on next page						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

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 ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
L.3.2.1(a)1	Slipperiness/floor surface						
2	Change in slipperiness factor						
3	Slipperiness increases with wetting						
4	" of tub and shower surfaces						
(b)1	Rough surfaces, carpet weaves, sills, etc.						
2	Changes in floor level						
3	Stair and balcony railings						
4	Windows: ease of opening; sills, guards; cleanability						
5	Means of egress						
L.3.3.1	Personal security from criminal acts						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: L.4 Enclosed Spaces/Fire Safety

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C. -Component HS -Housing System
M -Module ◯-Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
L.4.0.1	Summary table/fire criteria						
L.4.1.1	Doors - self closing/automatic closing						
L.4.1.2	" - direction of opening						
L.4.1.3	" - fire resistance						
L.4.1.4	Exit doors/temperature rise						
L.4.2.1	Exits						
L.4.2.2	" - minimum per floor						
L.4.2.3	Stairwells						
L.4.2.4	Width of corridors and stairways						
L.4.2.5	Exterior balcony used as exit						
L.4.2.6	Stairs						
L.4.2.7	Exit doors						
L.4.2.8	" signs						
L.4.2.9	Smoke proof tower						
L.4.2.10	Multi-level-apartments/exits/smoke detectors						

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: L.5 Enclosed Spaces/Acoustic Environment

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM
							Legend: Ma -Material; C -Component; M -Module; H -Housing Unit; HS -Housing System; ◯ -Completed (symbol circled)
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
L.5.1.1	Total system: enclosed space noise levels						

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
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
L.6.1.1	Admission of natural light						
L.6.2.1	Lighting elements - capacity						

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Housing System Producer: _____

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: L.7 Enclosed Spaces/Atmospheric Environment

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	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						

Housing System Producer:

Building Type: Multifamily High Rise (Guide Criteria Vol. I)

Intercept: L.9 Enclosed Spaces/Spatial Characteristics and Arrangement

SUMMARY FORM FOR TESTING AND ANALYSIS PROGRAM

Legend

Ma -Material H -Housing Unit
C -Component HS -Housing System
M -Module ◯ -Completed (symbol circled)

Criteria		Category I: Evaluation of Plans & Specs. & Documentation			Category II: Evaluation of Physical Elements		
Number	Subject	Review of Plans/Specs.	Computations/ Analysis	Test Data/ Industry Cert.	Examination	Testing to be Done	Remarks
L.9.1.1	Reference to subsequent criteria						
L.9.2.1	Living area						
L.9.3.1	Dining area						
L.9.4.1	Kitchen location						
L.9.4.2	" space						
L.9.4.3	" light and ventilation						
L.9.4.4	" range/fire protection and safety						
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						