

ATC Design Guide 1

Minimizing Floor Vibration

by
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Preface

This document is the first in the new Design Guide series developed by the Applied Technology Council Board of Directors. The series presents succinct, state-of-the-art information on important design issues for practicing structural engineers. The document was developed with funding from the Henry J. Degenkolb Memorial Endowment Fund of the Applied Technology Council (ATC).

This first ATC Design Guide provides guidance on design and retrofit of floor structures to limit transient vibrations to acceptable levels, recognizing that “acceptable levels” is a somewhat subjective measure. The document also includes guidance for estimating floor vibration properties and example calculations for a variety of floor types and design conditions.

The criteria provided in this guide for acceptable levels of floor vibration are based on human sensitivity to floor vibration, whether it is caused by human behavior or machinery in the structure. Other sources of floor

vibration such as vehicular traffic, internal or external to the building, are not covered in this document. The criteria apply to floors made from most currently used construction materials.

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Contents

Preface iii

Figures vii

Tables ix

1. Introduction 1

1.1 Purpose and Scope of the Guide. 1

1.2 Road Map 1

1.3 Vibration Limits 2

1.4 Floor Vibration Models 2

1.4.1 Resonance Model. 2

1.4.2 Point-Deflection Model 3

1.4.3 Impulse-Vibration Model. 3

2. Design 5

2.1 Vibration Due to Walking in Light-Frame Construction. 5

2.1.1 Design Criterion 5

2.1.2 Application to Light-Frame Floor Structures. 5

2.1.3 Additional Design Considerations 6

2.2 Vibration Due to Walking in Steel and Concrete Construction 8

2.2.1 Design Criterion 8

2.2.2 Application to Beam (or Joist) and Girder Floor Systems 9

2.3 Rhythmic Activities 10

2.3.1 Design Criterion 10

2.3.2 Design Procedure and Design Aids 12

3. Retrofit 15

3.1 Evaluation of Floor Vibration Problems. 15

3.1.1 Determining When to Evaluate 15

3.1.2 Determining Source of Vibration 15

3.1.3 Evaluation Tools. 15

3.2 Retrofits of Light-Frame Construction 16

3.2.1 Overall Procedure 16

3.2.2 Support Correction 16

3.2.3 Transverse Floor Stiffening. 16

3.3 Retrofit Strategies for Steel and Concrete Construction. 16

3.3.1 Reduction of Effects. 16

3.3.2 Relocation. 16

3.3.3 Changing Floor Mass. 17

3.3.4 Stiffening 17

3.3.5 Damping Increase 17

3.3.6	Isolation	18
3.3.7	Active Control	18
3.4	Retrofit Strategies for Machine-Induced Vibrations	18
3.4.1	General Strategies	18
3.4.2	Base-Isolation of Machinery	18
4.	Estimation of Floor Vibration Properties	21
4.1	Floor Panel Stiffness	21
4.1.1	Deflection Due to Concentrated Load	21
4.1.2	Deflection Due to Uniformly Distributed Load	22
4.1.3	Flexural Stiffness, EI , for Light-Frame Construction	22
4.1.4	EI for Steel and Concrete Deck Construction	23
4.1.5	EI for Concrete Construction	24
4.1.6	Transverse Stiffness	24
4.2	Natural Frequency	25
4.2.1	General Methods for Estimating Natural Frequency	25
4.2.2	Estimation of Panel Deflection, Δ	25
4.2.3	Natural Frequency of Concrete Floor Systems	26
4.2.4	Natural Frequency of Light-Frame Floor Systems	26
4.3	Effective Floor Weight (Mass)	26
4.3.1	Effective Weight per Unit Area, w	26
4.3.2	Effective Weight, W	27
4.3.3	Effective Weight of Concrete Floor Systems	28
4.3.4	Effective Weight of Light-Frame Floor Systems	28
4.4	Damping Ratio, β	28
5.	Examples	29
5.1	Vibration Due to Walking in Light-Frame Construction	29
5.1.1	Wood I-Joist Residential Floor (Design)	29
5.1.2	Wood Truss Residential Floor (Design)	30
5.2	Vibration Due to Walking in Steel and Concrete Construction	31
5.2.1	Precast Double-T Mall Footbridge (Design)	31
5.2.2	Hollowcore Office Floor (Design)	32
5.2.3	Steel Office Floor (Retrofit)	33
5.3	Rhythmic Activities	34
5.3.1	Glulam Dance Floor (Design)	34
5.3.2	Precast Concrete Stadium Seats (Design)	35
5.3.3	Steel Joist Aerobics Floor (Retrofit)	36
5.4	Machine-Induced Vibration	37
5.4.1	Base Isolation of a Machine on a Light-Frame Floor (Retrofit)	37
Appendix A.	Determination of Floor Panel Stiffness: Examples	39
A.1	Wood I-Joist Floor Panel Stiffness	39
A.2	Precast Stadium Seating Panel Stiffness	40
Symbols		43
References		47
Project Participants		49
Applied Technology Council Projects and Report Information		51
Applied Technology Council Directors		63