



**I.S./ENV 25349:1993**

**IRISH STANDARD**

**MECHANICAL VIBRATION – GUIDELINES FOR THE  
MEASUREMENT AND THE ASSESSMENT OF HUMAN  
EXPOSURE TO HAND-TRANSMITTED VIBRATION (ISO  
5349:1986)**

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4/23/18

March 15, 2018

Dear Mr. [Name],

I am writing to you regarding the [Project Name] project. We are currently in the process of [Project Description]. We would like to invite you to [Action Item].

Thank you for your time and attention.

Sincerely,  
 [Name]  
 [Title]

cc: [Name], [Name], [Name]

John Doe

John Doe

## **DECLARATION**

**OF**

**SPECIFICATION**

**ENTITLED**

**MECHANICAL VIBRATION – GUIDELINES FOR THE MEASUREMENT AND THE  
ASSESSMENT OF HUMAN EXPOSURE TO HAND-TRANSMITTED VIBRATION**

**(ISO 5349:1986)**

**AS**

**THE IRISH STANDARD SPECIFICATION FOR**

**MECHANICAL VIBRATION – GUIDELINES FOR THE MEASUREMENT AND THE  
ASSESSMENT OF HUMAN EXPOSURE TO HAND-TRANSMITTED VIBRATION**

**(ISO 5349:1986)**

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**EOLAS - The Irish Science and Technology Agency in exercise of the power conferred by section 20 (3) of the Industrial Research and Standards Act, 1961 ( No. 20 of 1961 ) and the Science and Technology Act, 1987 (No. 30 of 1987), and with the consent of the Minister for Enterprise and Employment, hereby declares as follows:**

- 1. This instrument may be cited as the Standard Specification (Mechanical Vibration – Guidelines for the Measurement and the Assessment of Human Exposure to Hand-Transmitted Vibration (ISO 5349:1986)) Declaration, 1993.**
- 2. (1) The Specification set forth in the Schedule to this declaration is hereby declared to be the standard specification for Mechanical Vibration – Guidelines for the Measurement and the Assessment of Human Exposure to Hand-Transmitted Vibration (ISO 5349:1986). The Schedule comprises the text of ENV 25349 : 1992.**  
**(2) The said standard specification may be cited as Irish Standard/ENV 25349 : 1993 or as I.S./ENV 25349 : 1993.**

## Introduction

### Background

#### Objectives

The purpose of this study was to investigate the effect of a 12-week intervention on the physical fitness and health-related quality of life of sedentary adults. The study was conducted in a community-based setting and involved a randomised controlled trial design. The primary outcome was the change in cardiorespiratory fitness, measured by maximum oxygen consumption (VO<sub>2</sub>max), and the secondary outcome was the change in health-related quality of life, measured by the SF-36 questionnaire.

### Methods

#### Study Design and Participants

The study was a randomised controlled trial conducted in a community-based setting. A total of 120 sedentary adults, aged 40-65 years, were recruited from local health centres and community groups. The participants were randomised into two groups: an intervention group (n=60) and a control group (n=60). The intervention group received a 12-week supervised exercise program, while the control group received no intervention.

#### Intervention and Control

The intervention group participated in a 12-week supervised exercise program consisting of three sessions per week. Each session included a 10-minute warm-up, 30 minutes of moderate-intensity aerobic exercise (e.g., walking, cycling, or swimming), and a 10-minute cool-down. The control group received no intervention and continued their sedentary lifestyle.

Cardiorespiratory fitness was measured at baseline and at the end of the 12-week intervention period. Maximum oxygen consumption (VO<sub>2</sub>max) was measured using a metabolic cart during a maximal treadmill test. Health-related quality of life was measured using the SF-36 questionnaire at baseline and at the end of the 12-week intervention period.

The primary outcome was the change in cardiorespiratory fitness, measured by maximum oxygen consumption (VO<sub>2</sub>max). The secondary outcome was the change in health-related quality of life, measured by the SF-36 questionnaire. The study was approved by the local research ethics committee and all participants provided written informed consent.

The results of the study showed that the 12-week intervention significantly improved cardiorespiratory fitness and health-related quality of life in sedentary adults. The intervention group showed a significant increase in VO<sub>2</sub>max and a significant improvement in the SF-36 score compared to the control group.

EUROPEAN PRESTANDARD

ENV 25349:1992

PRÉNORME EUROPÉENNE

EUROPÄISCHE VORNORM

October 1992

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UDC 534.1:534.6:614.872.5:534.83

Descriptors: Vibration, measurements, measuring instruments, human body, human factor engineering, hand (anatomy), safety rules, work safety

English version

**Mechanical vibration - Guidelines for the measurement and the assessment of human exposure to hand-transmitted vibration (ISO 5349:1986)**

Vibrations mécaniques - Principes directeurs pour le mesurage et l'évaluation de l'exposition des individus aux vibrations transmises par la main (ISO 5349:1986)

Mechanische Schwingungen - Leitfaden zur Messung und Beurteilung der Einwirkung von Schwingungen auf das Hand-Arm-System des Menschen (ISO 5349:1986)

This European Prestandard (ENV) was approved by CEN on 1992-10-19 as a prospective standard for provisional application. The period of validity of this ENV is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the ENV can be converted into an European Standard (EN).

CEN members are required to announce the existence of this ENV in the same way as for an EN and to make the ENV available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the ENV) until the final decision about the possible conversion of the ENV into an EN is reached.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart, 36 B-1050 Brussels

### **Foreword**

Following consideration of the result of a Primary Questionnaire among members, the CEN Technical Board decided in October 1991 to submit the International Standard :

ISO 5349:1986 "Mechanical vibration - Guidelines for the measurement and the assessment of human exposure to hand-transmitted vibration"

to the formal vote for approval as European Prestandard.

The result of the formal vote was positive.

The Technical Committee CEN/TC 231 "Mechanical vibration and shock" is of the opinion that the International Standard ISO 5349:1986 shall be revised, especially to take into account the following :

- to check validity of dose-effect relationship in Annex A
- to better explain the differences between field measurements and type test measurements (see the Introduction to the European Prestandard)
- to study the possibility to include informations on influence of factors such as mass of the machine, feed and grip forces, ergonomic design of the machine, etc.
- to propose a procedure to evaluate the exposure time.

According to the CEN/CENELEC Internal Regulations, the following countries are bound to announce this European Prestandard :

Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

### **Endorsement notice**

The text of the International Standard ISO 5349:1986 was approved by CEN as a European Prestandard without any modification.

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