

**Human Factors (HF);  
Telecommunications keypads and keyboards;  
Tactile identifiers**

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**Postal address**

F-06921 Sophia Antipolis Cedex - FRANCE

---

**Office address**

650 Route des Lucioles - Sophia Antipolis  
Valbonne - FRANCE  
Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16  
Siret N° 348 623 562 00017 - NAF 742 C  
Association à but non lucratif enregistrée à la  
Sous-Préfecture de Grasse (06) N° 7803/88

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**Internet**

secretariat@etsi.fr  
Individual copies of this ETSI deliverable  
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## Foreword

This ETSI Standard (ES) has been produced by ETSI Technical Committee Human Factors (HF).

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## Introduction

Telecommunications terminals and mobile telephones have many functions and may therefore be difficult to use. For visually-impaired and partially blind people this may cause difficulties in locating specific keys on the keypad or the keyboard.

Consequently there is a growing need to ensure that these terminals have tactile identifiers which assist people in locating the keys. This includes terminals with keyboards such as text telephones and video telephones. Tactile identifiers also increase the usability of telecommunications terminals for people with normal vision, e.g. when using the terminals when there is poor lighting.

The present document is consistent with existing standards and "de facto" standards for tactile identifiers in order to harmonize telecommunications terminals with other informatics and office equipment.

The purpose of the present document is to specify the form, dimension and location of tactile identifiers on telecommunications keypads and keyboards. Hopefully a common standard for tactile identifiers can be achieved through harmonisation with CEN, ITU-T and ISO for a world wide standard.

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# 1 Scope

The present document specifies the form, dimension and location of tactile identifiers on telecommunications keypads and keyboards. Only the "5", "F" and "J" keys are within the scope of the present document. Tactile identifiers help blind and visually impaired people locate the various keys of telephone keypads and keyboards. Tactile identifiers may furthermore increase the usability of telecommunications terminals for people with normal vision, e.g. when using the terminals when there is poor lighting.

The identifiers are consistent with existing standards for tactile identifiers in order to harmonize telecommunications terminals with other equipment.

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# 2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

[1] ITU-T Recommendation E.161: "Arrangement of digits, letters and symbols on telephones and other devices that can be used for gaining access to a telephone network".

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# 3 Definitions, symbols and abbreviations

## 3.1 Definitions

For the purposes of the present document, the following definitions apply:

**function keys:** a key whose primary purpose is the input of a control function. Function keys are found in all sections of the keyboard.

**keyboard:** the collection of numeric, alphanumeric and function keys on a telephone.

**keypad:** an arrangement of numeric command and, where required, function and/or alphanumeric keys laid out in a specific manner.

**section:** a block of keys, mostly with some functional relationship.

**tactile identifiers:** feedback which can be felt when touching a surface, e.g. a raised dot.

**telecommunication keyboard:** the collection of numeric, alphanumeric and function keys on a telephone.

**telephone keypad:** the numeric keys 0 - 9, star (\*) and square (#). See ITU-T Recommendation E.161 [1].

**text telephony:** a telecommunications service offering two-way, real time text conversation through telecommunication networks. Text telephony may be combined with voice telephony.

**visually impaired:** a reduction in visual acuity or of the visual field or visual distortion.

## 3.2 Symbols

For the purposes of the present document, the following symbols apply:

- |   |   |
|---|---|
| * | The Star on the standard telephone keypad arrays, see ITU-T Recommendation E.161 [1].<br>Also known as the asterisk.  |
| # | The Square on the standard telephone keypad arrays, see ITU-T Recommendation E.161 [1].<br>Also known as the hash, number or sharp sign ("pound" in the USA). |

## 3.3 Abbreviations

For the purposes of the present document, the following symbols apply:

ITU-T	International Telecommunications Union - Telecommunications (formerly CCITT)
CEN	European Committee for Standardization
ISO	International Organization for Standardization

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# 4 Requirements of a standard tactile identifier

The requirements in the present document are consistent with existing standards and "de facto" standards for tactile identifiers for telecommunications terminals and other informatics and offices equipment.

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## 5 Tactile identifier on numeric keypads

### 5.1 General

The numeric keypad shall be marked with a tactile identifier on the "5" key.



**Figure 1: Example of raised round dot on the "5" key**

### 5.2 Position of tactile identifier on numeric keypads

The preferred locations for the tactile identifier on the numeric keypad are:

- in the middle of the "5" key;
- as near the middle of the "5" key as possible;
- on the surface of the "5" key that is pressed when the key is activated.

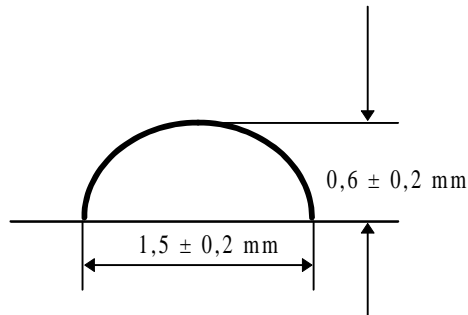
It is recommended that the tactile identifier is positioned in such a way that it will not obscure the legibility of the marking on the "5" key.

If none of these locations can be used, e.g. on small keys, then alternative positions and forms of the tactile identifier may be acceptable.

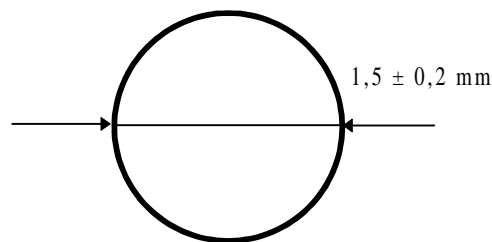
## 5.3 Form and dimension of tactile identifier on numeric keypads

The preferred form of the tactile identifier on the "5" key is a distinct raised round dot.

The recommended dimension of the raised round dot is 0,6 mm ( $\pm 0,2$  mm) high and with a diameter of 1,5 mm ( $\pm 0,2$  mm). See figures 2 and 3.



**Figure 2: Diameter and height of the raised round dot**



**Figure 3: Diameter of the raised round dot**

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## 6 Tactile identifier on alphanumeric keyboards

The alphanumeric keyboard shall be marked with a tactile identifier on the "F" and "J" key.



**Figure 4: Example of raised bar on the "F" key**

### 6.1 Position of tactile identifier on alphanumeric keyboards

The preferred locations of the tactile identifier on the "F" and "J" keys are on the keytop edge nearest to the user. See figure 4.

## 6.2 Form and dimension of tactile identifier on alphanumeric keyboards

The preferred form of the tactile identifier on the "F" and "J" keys is a distinct raised bar.

The recommended dimension of the raised bar is 4,0 mm ( $\pm 1$  mm) long, 0,5 mm ( $\pm 0,1$  mm) wide and 0,6 mm ( $\pm 0,2$  mm) high. See figures 5 and 6.

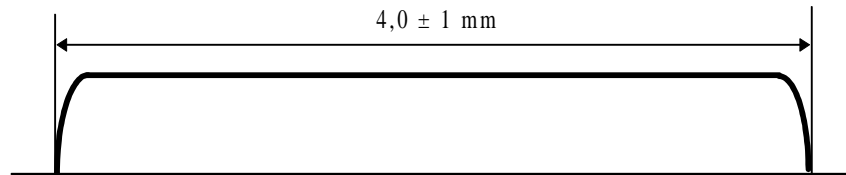


Figure 5: Length of the raised bar

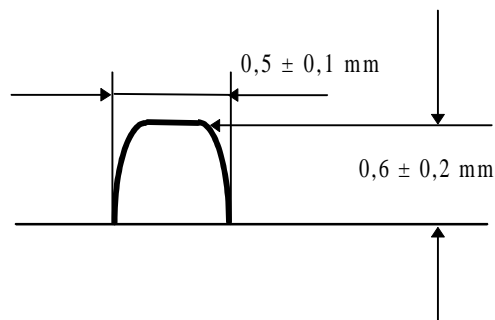


Figure 6: Height and the width of the raised bar

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## 7 Testing for conformance with the present document

The provision of a tactile identifier on telecommunications keypads and keyboards does not require any specialist measurement procedures to test telecommunications keypads and keyboards for conformance with the present document.



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## Bibliography

The following material, though not specifically referenced in the body of the present document, gives supporting information.

ETR 029: "Human Factors (HF); Access to telecommunications for people with special needs Recommendations for improving and adapting telecommunication terminals and services for people with impairments".

ISO/DIS 9241-4: "Ergonomic requirements for office work with visual display terminals (VDTs), Part 4: Keyboard requirements".

EN 1332-3: "Identification card systems - Man - machine interface, Part 3: Keypads".

ETS 300 640: "Human Factors (HF); Assignment of alphabetic letters to digits on standard telephone keypad arrays".

ETS 300 767: "Human Factors (HF); Telephones Prepayment Cards; Tactile Identifier".

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ETR 166: "Human Factors (HF); Evaluation of telephones for people with special needs; An evaluation method".

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ETR 116: "Human Factors (HF); Human factors guidelines for ISDN Terminal equipment design".

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## History

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