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# Clip balance weight and rim flange nomenclature, test procedures and performance requirements — Passenger vehicle wheels

*Voitures particulières — Masse d'équilibrage et collerette de jante — Nomenclature, procédures d'essai et exigences de performance*

ICS 43.100

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## Foreword

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ISO 13988 was prepared by Technical Committee ISO/TC 22, *Road Vehicles*, Subcommittee SC 19, *Wheels*.

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## Introduction

This international standard addresses clip balance weights used on passenger car wheels. The standard provides general features and configurations of the clip balance weights and rim dimensions and defines terms used to describe these features. The standard provides test procedures to evaluate weight retention on the wheel.

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# Clip balance weight and rim flange nomenclature, test procedures and performance requirements — Passenger vehicle wheels

## 1 Scope

This International Standard specifies procedures and minimum performance requirements for testing without tyres the retention of clip balance weights for use on wheels for passenger vehicles. It also specifies general features for configurations of clip balance weights and rim flanges for light alloy and steel wheels intended for use on passenger cars. Alternative materials and geometries can be considered in the future.

## 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 4223-1 (all parts), Definitions of some terms used in the tyre industry

ISO 4000-1, Passenger car tyres and rims- Part 1: Metric series

ISO 4000-2, Passenger car tyres and rims-Part 2: Rims

ISO 3911 (all parts), Wheels & rims for pneumatic tyres: Vocabulary, designation, and marking

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 4223-1, ISO 4000-1, ISO 4000-2, ISO 3911 and the following apply:

### 3.1

#### Balance weight assembly

An assembly of the weight and the clip, which is intended for mounting on the rim flange to balance the tyre/wheel assembly about its axis of rotation and thus minimise vibrations due to the rotation of the tire/wheel assembly.

#### 3.1.1

##### Weight

Material of a specified mass with contours to conform to the surface of the rim flange

#### 3.1.2

##### Clip

Specially formed metal affixed to the weight to mount the balance weight on the rim flange.

#### 3.1.3

##### Spur

An optional part of a clip protrudes from its surface interfacing with the rim flange.

**3.1.4**

**Balance weight coating**

Non-corrosive material coating (polyester, nylon, etc...) to avoid corrosion.

**3.1.5**

**Balance weight key dimensions**

Dimensions that are essential for fitting the balance weight on the rim flange.

**3.1.6**

**Balance weight size**

The balance weight size is determined by the magnitude of the balance weight mass and is expressed in grams (g).

**3.1.7**

**Balance weight retention force**

A static force required to remove the balance weight from the rim flange, expressed in Newton (N).

**3.1.8**

**Balance weight retention**

An ability of the balance weight to maintain its secure position on the rim flange in various service conditions.

**3.1.9**

**Interference**

The measure of balance weight press fit computed as the difference between the flange thickness and the weight gap.

**3.1.10**

**Nomenclature**

For descriptions of nomenclature of balance weights and further definitions refer to figure 1.

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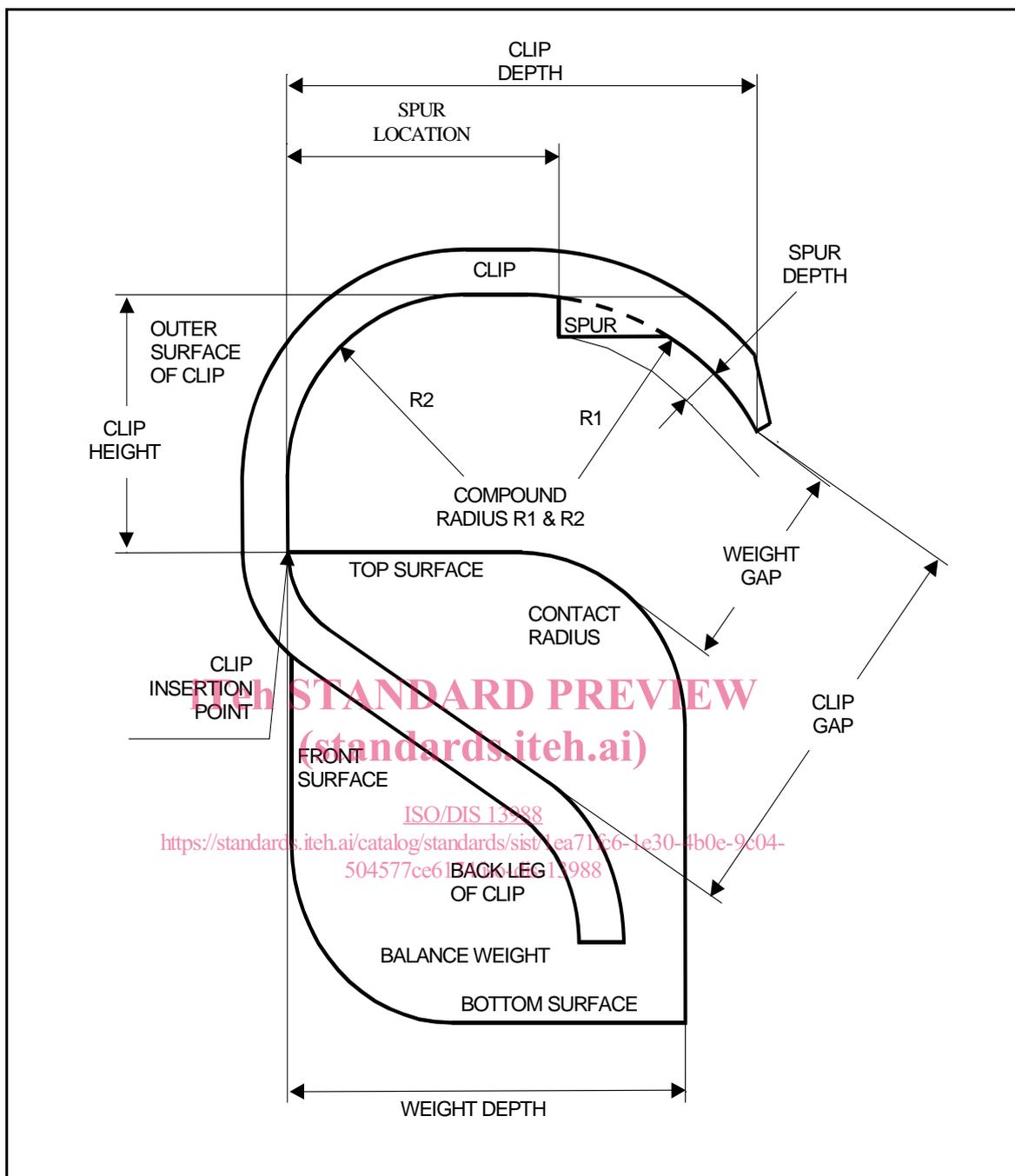


Figure 1 — Balance weight assembly terminology

### 3.2

#### Rim flange

That part of the rim where the balance weight is mounted.

#### 3.2.1

##### Rim flange key dimensions

Dimensions that are essential for fitting the balance weight on the rim flange

NOTE For further definitions and descriptions of nomenclature of Rim Flange features, see figure 2 for Light Alloy Wheels, figure 3 for Wheels with Roll Formed Rim, figure 4 for Fullface Wheels and figure 5 for Clad Wheels.