Mattresses: technical standards also help us in our choice

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It is common experience that sleep, besides taking up about a third of our lives, is one of the physiological activities of man that are fundamental to his psycho-physical balance. We all have experience of how we feel in the aftermath of a sleep in which, for one reason or another, we slept badly: irritability, a drastic decrease in the ability to concentrate and other short-lived, but extremely annoying ailments. Undoubtedly one of the objective factors contributing to sleep is the mattress.
Choosing a good mattress can ensure us a better night's rest and benefit our health, but the purchase is not easy also because the market offers a very wide range of products.
Obviously, there is no mattress that can meet everyone's expectations.
Each person, depending on their age, weight and habits, may have a different **perception of mattress comfort.**

The importance of this topic was also recognised in the standardization context already in the 1990s. In 2000, the European Technical Committee CEN/TC207 developed an initial version of the EN 1957 standard "Beds and mattresses - *Test methods for the determination of functional characteristics and assessment criteria*", a document that has undergone several revisions over the years.

The aim of EN 1957 is to **determine parameters that scientifically describe** the most subjective functional characteristics, such as the sensation of **"soft" or "hard"** that a person has when lying on a mattress, and to measure their variation after the product has been subjected to a fatigue cycle simulating the use exerted by a body.
In the laboratory, using a roller of specified dimensions and weighing approximately 140 kg that is run over the surface of the mattress 30,000 times, the application of loads and movements typical of prolonged use of the mattress is simulated.

Before and after the fatigue test, the height of the mattress is measured and by means of a mathematical processing of the load-deflection curve, the determination of firmness rating Hs (the "soft" or "hard" feeling mentioned above) is determined. The value of Hs is related on a scale of 1 to 10, where 1 identifies a very stiff mattress and 10 a very soft one.

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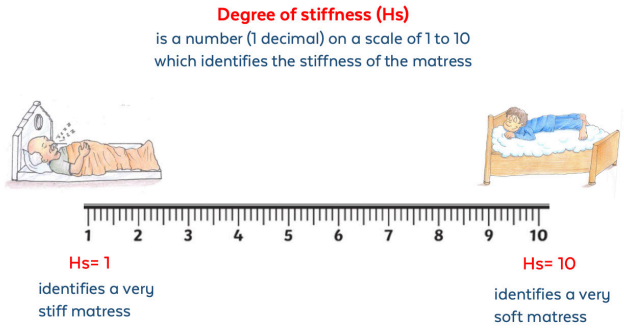

The method for determining the **firmness rating (Hs)** is based on empirical research conducted in several European countries.
In these research programmes, values measured in accordance with the standard were compared to subjective evaluations given by people lying on mattresses with different degrees of firmness.
The indentation depth obtained by the method indicated corresponds to that produced by people lying on the mattress and not to people performing manual palpation or sitting or kneeling on it.
For the sake of clarity, the standard also emphasises that the firmness rating (Hs) cannot be used to demonstrate the comfort of a mattress.

At the end of the fatigue test, the initial and final values (mattress height and firmness rating) are compared to verify that the mattress after a certain amount of time of use does not significantly change the characteristics for which it was chosen at the time of purchase.

EN 1957 also provides for checking the **resistance of the mattress edge** by applying a force of 1000 N to it 5,000 times, in order to verify that it withstands stress every time a person sits down and gets out of bed.

To assess whether any variations in height and degree of stiffness (Hs) found after testing are acceptable, the Italian standard UNI 10707 *"Mattresses - Test methods and requirements"* is used.
The document defines the **limits of variation** and requires to **check for obvious damage** to the mattress such as tears in the seams, the presence of lumps in the upholstery material, breaks or protrusions of springs, or other defects that can be detected by careful visual analysis.

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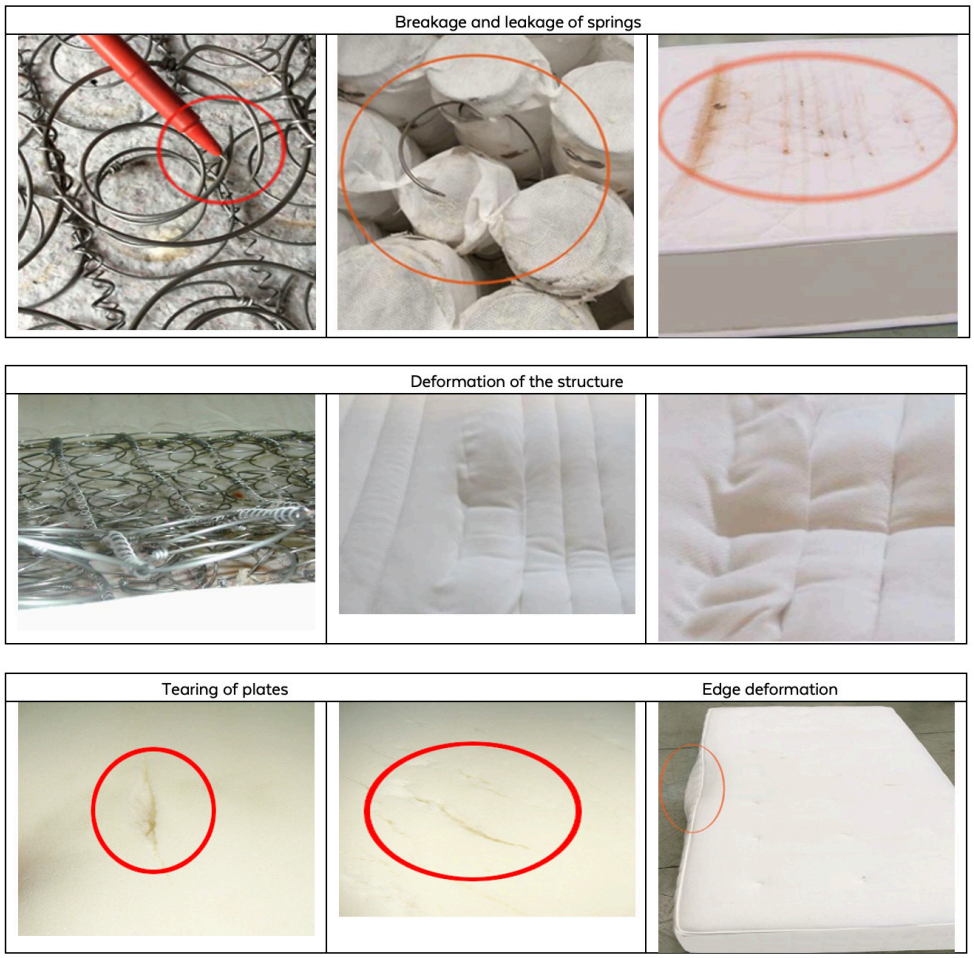
In addition to any excessive loss of height and a significant change in the firmness rating (Hs), **typical defects** that can be found with the durability test are breakage of the springs, with their possible protrusion from the mattress surface, permanent deformation of the structure, tearing of the stressed sheets, and failure of the mattress edge.

Images of the main defects found in tests according to EN 1957



In more than 25 years, thousands of mattresses from all over the world, of different types, sizes and characteristics, have passed under our test rollers.
The total number of test cycles performed by our equipment exceeds 60,000,000 and the results obtained have shown that **the standard is an excellent tool** at manufacturer's disposal to validate the product, to check the goodness of the materials used and their matching, and to verify their durability.

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