

# Mattresses: what are the characteristics highlighted by tests conducted at Catas

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November 2024

CATAS, at its Lissone laboratory, began testing mattresses as early as 1996, when the EN 1957 standard “Beds and mattresses - Test methods for the determination of functional characteristics and assessment criteria” was still in draft form.

The purpose of this standard is to scientifically determine **parameters** that describe highly subjective functional characteristics, such as the “**soft**” or “**firm**” perception of a mattress when someone lies on it, and to **measure how these parameters change** after a fatigue cycle that simulates long-term use.

The standard describes only the test methods and does not define minimum numerical or qualitative requirements or pass/fail criteria. This was done at the Italian national level by publishing UNI 10707 “Mattresses - test methods and requirements”.

Among the requirements listed there are also those relating to “mechanical performance” based on EN 1957.

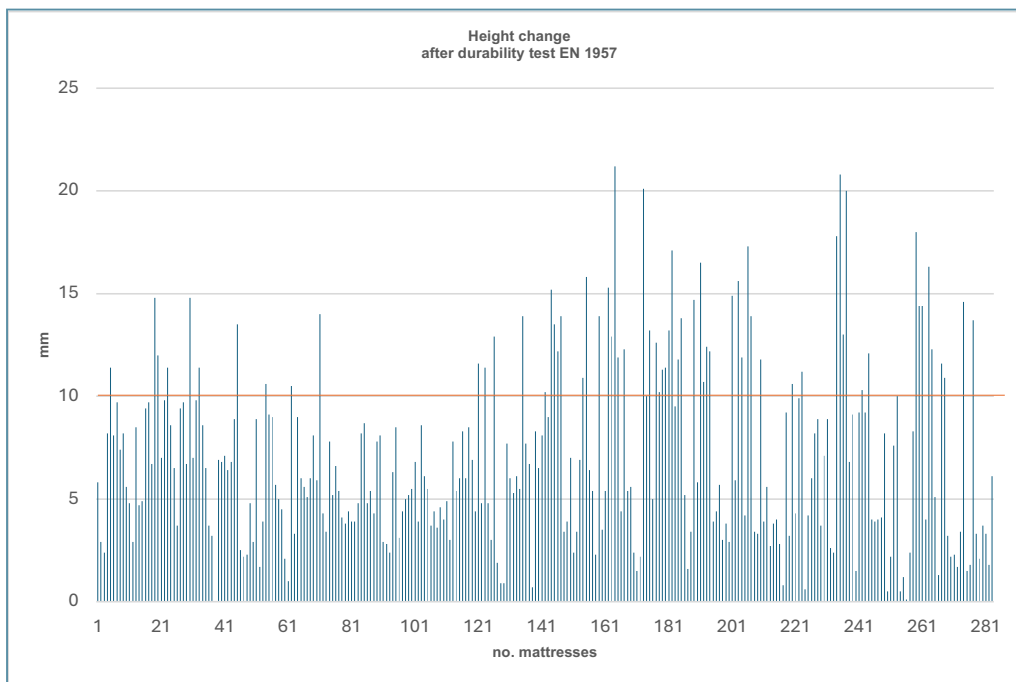
From 1996 until today, we have conducted **thousands of tests**, averaging around 100 mattresses per year. This amount of data offers a valuable perspective on the production quality of this essential item for our sleep.

Based on the data we have gathered over the years, we will **analyze mattresses tested** in the last three years.

The accompanying charts display data distributions for the following key parameters::

- **change in mattress height** after the durability test
- **change in firmness rating (Hs)** after the durability test.

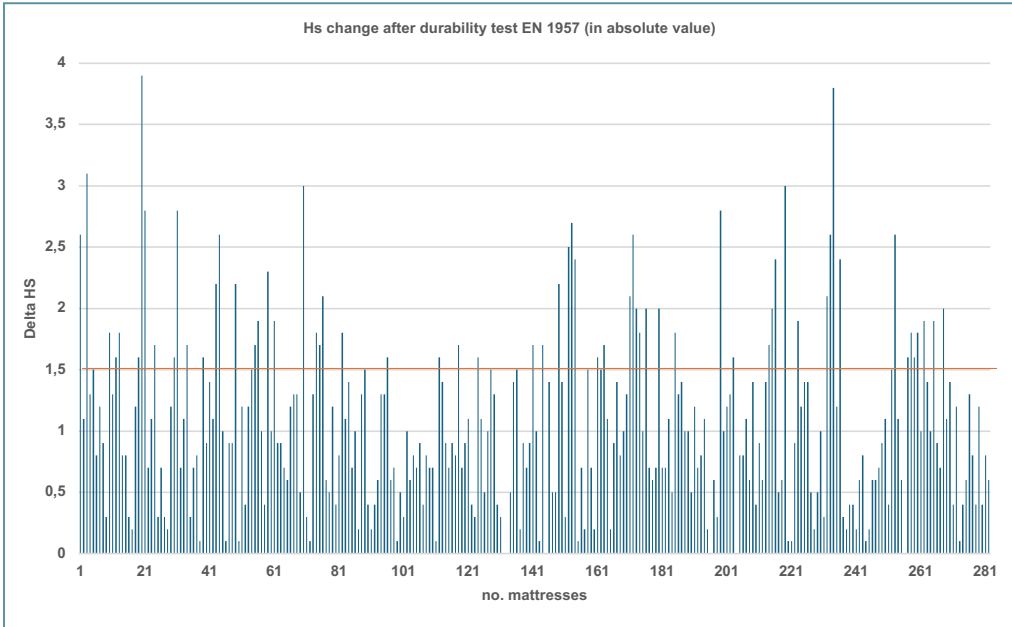
Chart 1



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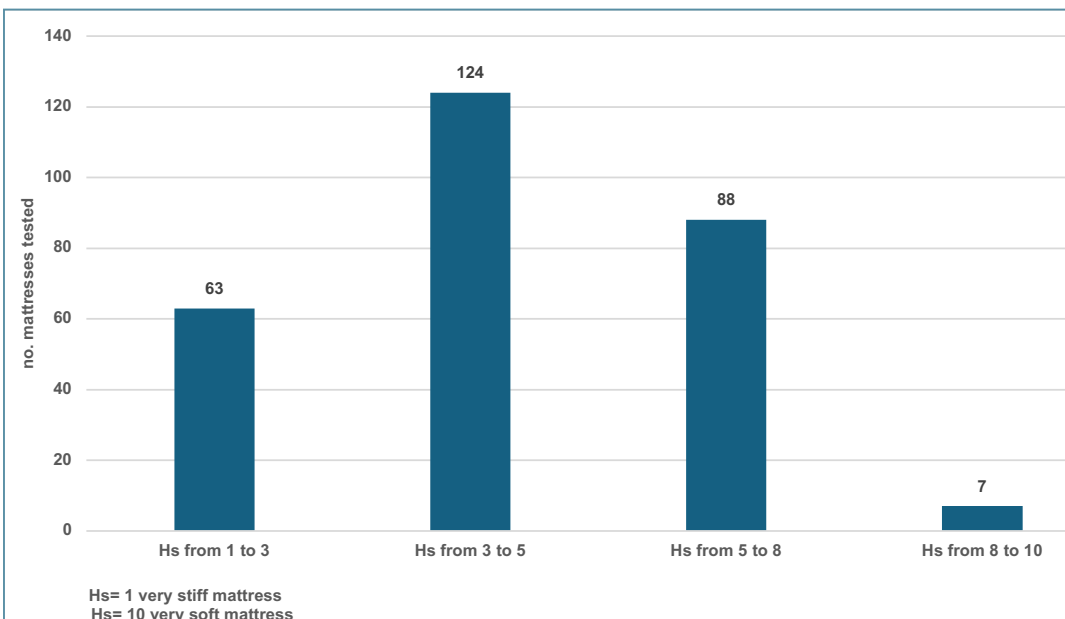
Chart 2



From this significant amount of data, we can derive, with caution, average values and standard deviations (the data dispersion around the mean) and indicate the range (minimum and maximum values) reached by these parameters. It is important to note that all values are considered in absolute terms, regardless of sign.

Chart 3 immediately shows the distribution of mattresses with regards to the “soft” or “firm” factor. We recall that the Hs value is reported on a scale from 1 to 10, where 1 identifies a very firm mattress and 10 a very soft one.

Chart 3

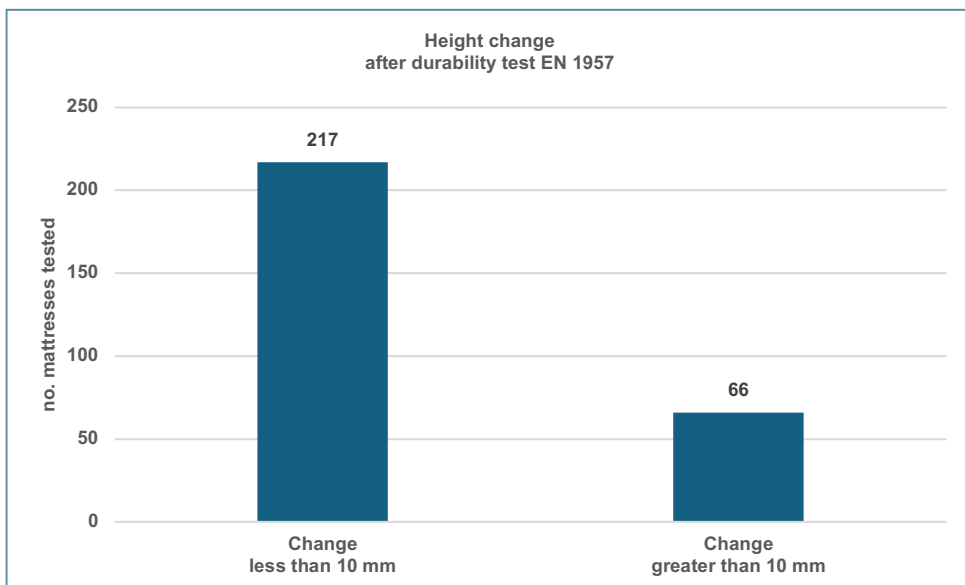


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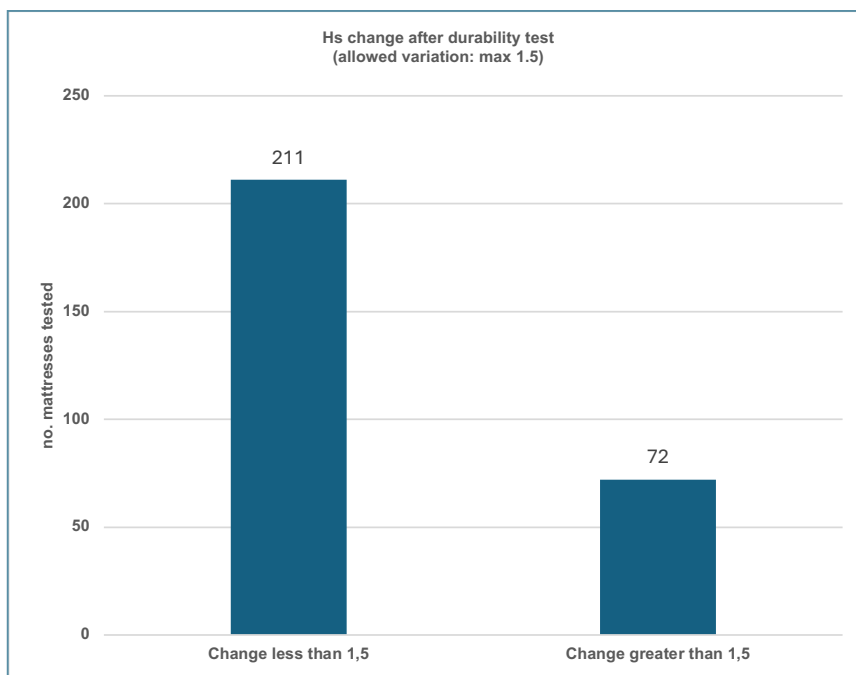
If we now compare the recorded variations with the requirements set by UNI 10707, simplifying the one of mattress height to the required value of < 10 mm (the most restrictive requirement), the trends are shown in charts 4 and 5.

Chart 4



Mean = 7,0 mm  
 Std. Dev. = 4,4 mm  
 Minimum = 0,2 mm  
 Maximum = 21,2 mm

Chart 5



Mean = 1,06  
 Std. Dev. = 0,71  
 Minimum = 0,00  
 Maximum = 3,90

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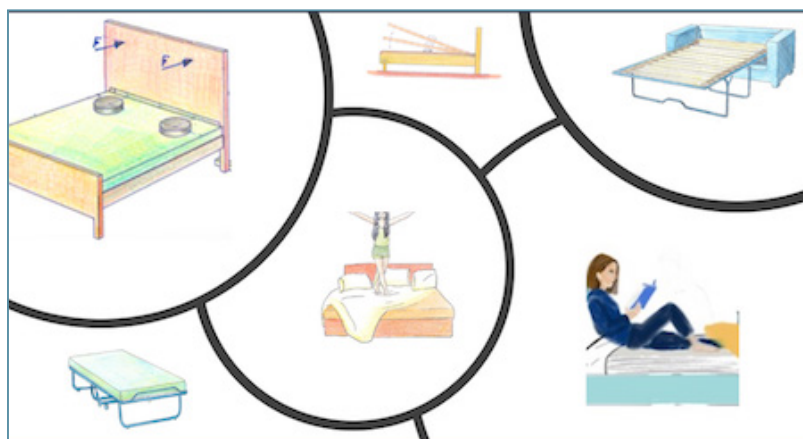
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One finding from the Hs distribution histogram (chart 3) is that the consumer preference, and therefore the production, seems to favour firm or hard mattresses. In fact, approximately 66% of tested mattresses have an Hs value below 5, with around 33% having values below 3.

For height variation, nearly 77% (histograms with value 217) of tested mattresses meet the UNI 10707 standard. Regarding Hs variation, 75% (histograms with value 211) of mattresses comply with the standard's requirement (absolute variation of Hs <1.5)

We remind you that bed bases and beds are also subject to verification according to "EN 1725:2023 "Furniture. Beds - Requirements for safety, strength and durability".

By clicking on the image below, you will find the article with insights on this standard.



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