



GRANIT
QUALITY PARTS

MOWER BLADES PRODUCT BENCHMARK

CUSTOMER INFORMATION

MOWER BLADES CM 120

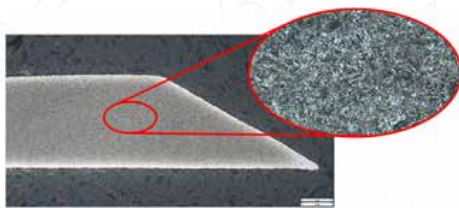
The mower blade from GRANIT with part number 525CM-120/25 was compared with a comparable mower blade from a leading original manufacturer and a mower blade from another brand.

COMPARISON OF FEATURES

- » Material and structural analysis and hardness test
- » Bending test according to ISO 5718/2013

TEST RESULTS

MATERIAL AND STRUCTURAL ANALYSIS AND HARDNESS TEST



These tests provide information about the materials used and the resilience of the products.

Selecting the right materials, hardness values and tempering structure is crucial in ensuring mower blade durability.

Fig.: Structure analysis with 200x magnification

- All three manufacturers use the same material for their mower blades - 36Mn5.
- This is an ideal choice as the manganese content increases wear resistance, which in turn extends the service life.
- Examination of the structure revealed that all the mower blades have a fine tempered structure. This indicates that heat treatment was carried out correctly.
- The mower blade hardness values are different for each of the three manufacturers. The standard requires a minimum hardness of 38 HRC.

The original manufacturer has chosen a relatively high hardness of 51 HRC. With a hardness of 46 HRC, the GRANIT mower blade occupies a perfectly chosen middle ground. With a hardness of 41 HRC, the blade from the other brand lies just within the required range.

- The material and tempering structure are the same for all three manufacturers. Only the hardness values were different. A hardness of 46 HRC represents a good compromise between service life and resilience (in this case the ability to resist blade breakage). Higher values increase the risk of blade breakage, which results in immediate blade failure (unlike creeping wear). Fragments can also fly around in an uncontrolled manner.
A low hardness value such as that exhibited by the blades from the other brand results in a significantly shorter service life, which increases wearing material costs.

TEST REPORT NO. 2020-01/1237



**Steinbeis-Transferzentrum
Werkstoff- und Bauteil-
prüfung (WBP)**

This product comparison was carried out on behalf of GRANIT PARTS by the Steinbeis Transfer Center laboratory.

BENDING TEST ACCORDING TO ISO 5718/2019

During this test the blades are bent in a press using defined geometric bodies.

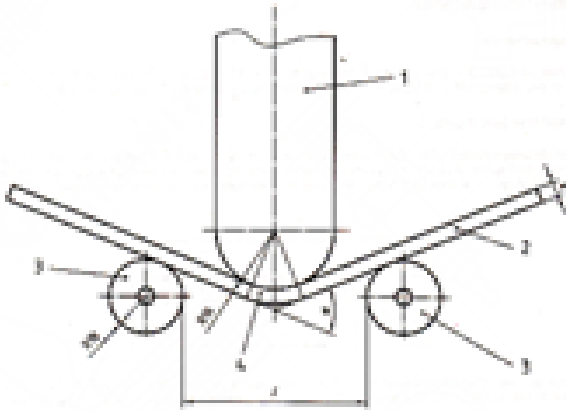
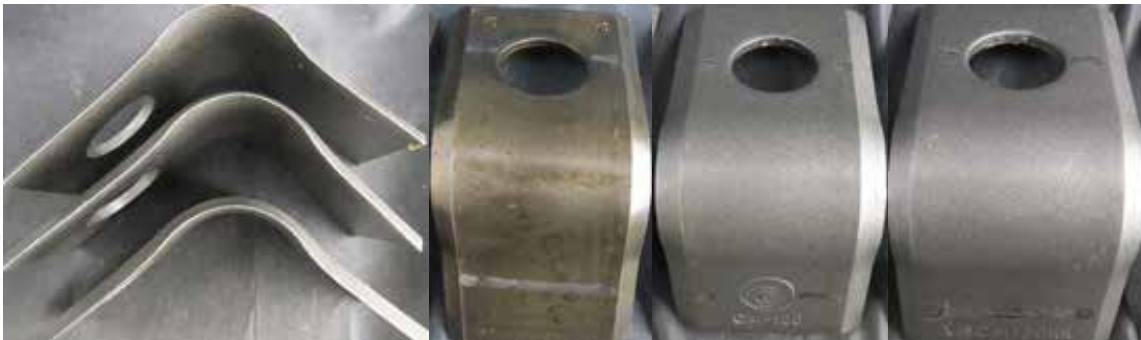


Fig.: Sketch of the test device

- The blades tested have a thickness of 3 mm, meaning that they should be able to withstand a bending angle of at least 75° without any cracks appearing in the material (according to the standard).



- All the mower blades from the three manufacturers passed this test: none of the blades showed any cracks.
- All three manufacturers are aware of the correct heat treatment and production method (e.g. observing the rolling direction) for mower blades. Failure due to manufacturing problems is unlikely with these blades.

CONCLUSION

GRANIT BLADES - THE BEST CHOICE

- The production quality of GRANIT mower blades is consistently high.
- A good balance between durability and resilience has been found, the advantages of which are evident in the field.
- The product qualification established in GRANIT's own laboratory results in consistently high product safety.
- GRANIT Quality Parts do what they promise and offer an optimum price-performance ratio.