

# Material Test Report



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**Order No:** 600 135 310

**Customer:** terra-S GmbH  
Bahnhofsstraße 38  
94081 Fürstenzell

**Purchase-No:** Email from 13.11.2023, Mr. Johannes Rauprich

**Test object:** Profiled sheets for gardening (soil edging)  
3 sample profiles, each 400 mm long, profile width 150 mm  
1 x smooth profile: raw material  
1 x partly corrugated profile: Gartenprofil PRO  
1 x full corrugated profile: Gartenprofil 3000  
refer to picture 1, attachment 1

Partly and full corrugated sheets are produced by profiling the smooth raw material.

Wall thickness of smooth profile: 1,8 mm  
Material: steel, galvanized  
Internal specimen no: 23-1715

**Test purpose:** The samples should be subjected to a bending test. The force-deflection curves of all profiles shall be compared with each other. A possible improvement in the bending stiffness of the partly corrugated or full corrugated profile compared to the smooth profile needs to be quantified.

**Testing:** Bending test on the part, see pictures 2-4, attachment 1

**Test result:** The gradient in the elastic area of the curve (Hook's line) is a measure of the bending stiffness of the profile.

Accordingly, the smooth profile (raw material) showed the lowest bending stiffness with 120 N/mm.

The full corrugated profile (Gartenprofil 3000) achieved 8 times the stiffness of the smooth profile.

The partly corrugated profile (Gartenprofil PRO) achieved 10 times the stiffness of the smooth profile.

Date: 11.04.2024

Our sign  
IS-AN2-STG/winkl-ha

This document consists of  
2 Pages and 1 attachment  
Page 1 of 2

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The test results refer exclusively to the test objects examined.



The smooth profile (raw material) showed the lowest maximum force little below 1000 N.

The full corrugated profile (Gartenprofil 3000) achieved the highest maximum force of over 4000 N.

The partly corrugated profile (Gartenprofil PRO) achieved a maximum force of 3300 N.

**Evaluation:**


The increase in bending stiffness of the partly corrugated and full corrugated samples is due to profiling. Therefore, it can be assumed that the increase in bending stiffness is independent of material type.

Accordingly, profiled sheets made of stainless steel, corten steel or aluminum also show such an increase in bending stiffness due to profiling.

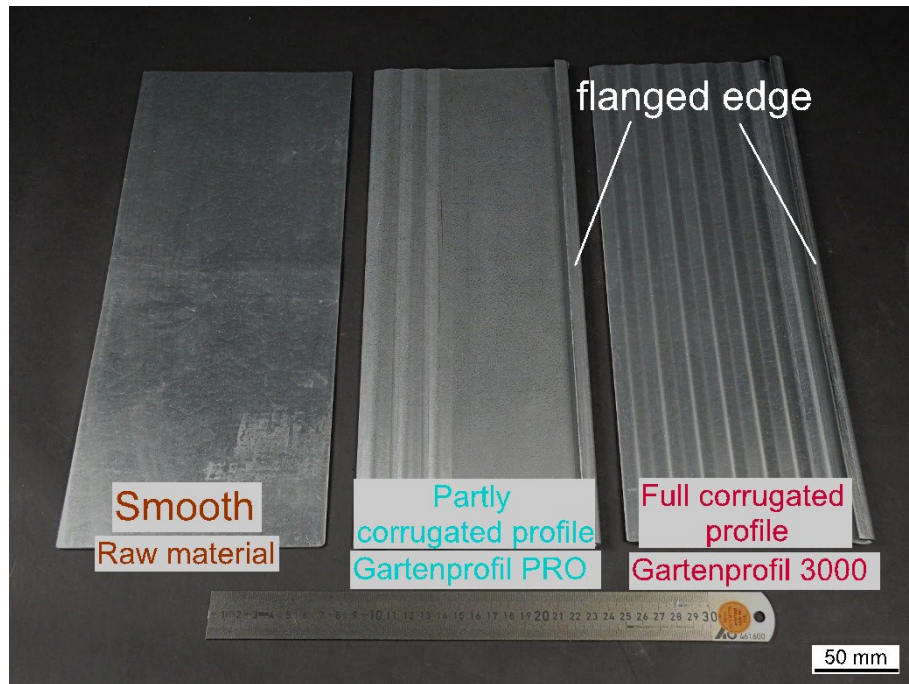
In terms of bending stiffness, the partly corrugated profile (Gartenprofil PRO) achieved the best results.

Department  
Plant Safety, Material Testing  
The expert

Tester / testing date  
A. Wieland / 11.04.2024

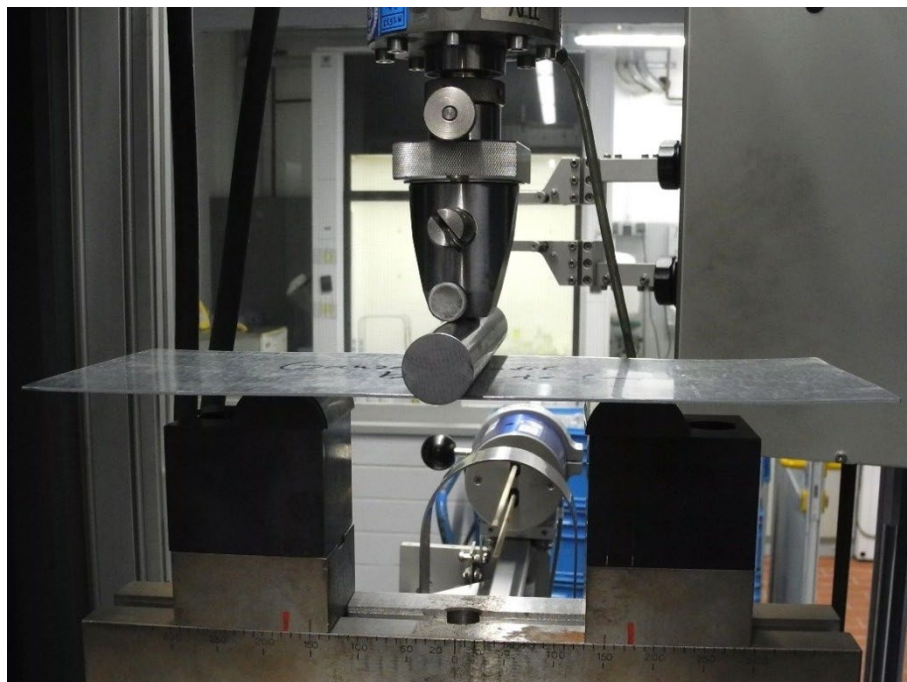
  
M. Sc. Hans-Jörg Winkler





**Picture 1**  
Delivered test profiles

600135203\_001\_0026



**Picture 2**  
Bending test - testing set up

600135203\_001\_0016



**Picture 3**  
Bending test - snapshot during testing

600135203\_001\_0039



**Picture 4**  
Bending test - snapshot during testing

600135203\_001\_0033



Force-Deflection-Graph

