LIFE RESKIBOOT

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Slovenia’s Circular Economy SRIP

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Gianluca Pagano is Engineering Manager at Dalbello Srl, part of the american private equity group Elevate Outdoor Collective. The group comprises several winter sports brands, including K2, Marker, Völkl, Madshus, Line, among others.

Dalbello, founded in 1974 in Asolo, Italy, is one of the main producer of ski boot. Together with **Grifone** (Bulgaria), liners manufacturer and part of Dalbello, the company can produce all the main components internally and assemble the skiboots in Italy.

LIFE RESKIBOOT

New circular economy models for plastics, applied to a ski boot.
Collect end-of-life ski boots and use the material recovered to manufacture 1000 pa of new ski boots.

THE PROJECT AND KEY CONCEPTS

LIFE RESKIBOOT is characterized by a collection and re-use system for ski boots, **based on selection and re-cycling of multi-plastic components.**

The key concepts are:

- **recovery** of post-consumer ski boots from rental network;
- **selection** and reuse of recovered ski boots as sources of secondary raw materials;
- **characterization** of the properties of secondary raw materials and comparison with virgin raw materials;
- **optimization** of component design and manufacturing processes.

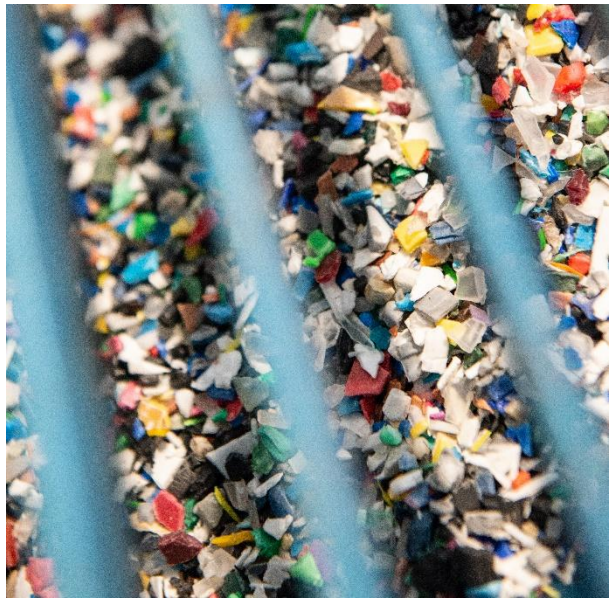
THE PROCESS AND THE PARTNERS

LIFE RESKIBOOT, **as a prototype circular economy model**, is supported by a network of seven essential partners, each representing a highly specialized and complementary expertise.

- **Rent and Go:** end-of-life ski boot collection;
- **Plastic Sort:** grinding of ski boots and sorting of the material
- **University of Bologna:** preliminary material study and eco-design;
- **Dalbello and Grifone:** adaptation and optimization of the industrial process;
- **Studio Fieschi and Epsi:** dissemination and LCA.

MAIN OBJECTIVES

Recover end-of-life ski boots, grind them and sort with precision all the materials, particularly polymeric ones



Optimize the production process, achieving the **use of approximately 90% recycled raw materials** and reducing production waste.

Environmental Product Declaration

In accordance with ISO 14025:2006 for:

Reskiboot

From
Dalbello

DALBELLO

EPD®
THE INTERNATIONAL EPD® SYSTEM

Programme:	The International EPD® System, www.environdec.com
Programme operator:	EPD International AB
EPD registration number:	S-P-12660
Publication date:	2024-02-20
Valid until:	2029-02-19

An EPD should provide current information and may be updated if conditions change. The stated validity is therefore subject to the continued registration and publication at www.environdec.com

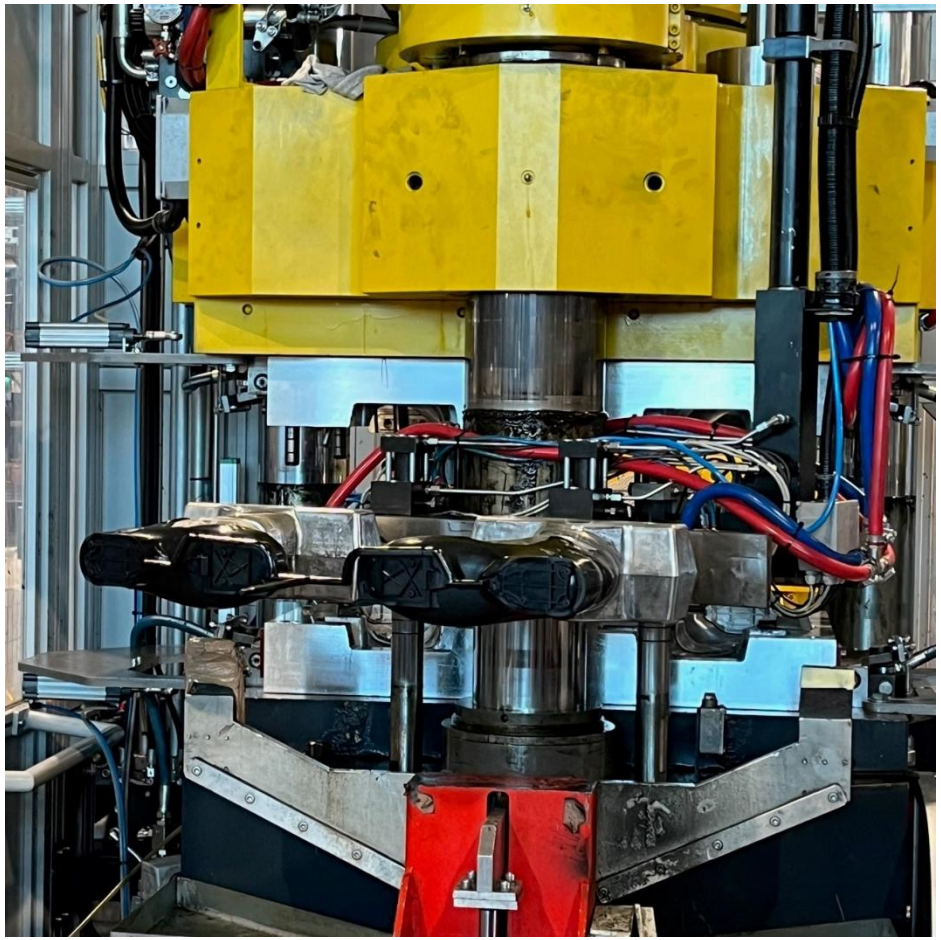
Measure the environmental performance of the product (**LCA**), in support of process validity, and certify the results through an environmental declaration (**EPD**)

MATERIAL TESTING AND PRODUCTION

Extensive testing of materials and finished product components was required to ensure that the Reskiboot ski boot could replicate the same performance and specifications as the corresponding model manufactured using virgin raw materials.

It was also necessary to adapt and optimize the injection molding production process, as the material recovered from end-of-life ski boots exhibited a behavior different from that of virgin raw materials and therefore required specific processing adjustments.

A key determining factor was the degree of material purity: the higher the purity level, the greater the material stability, which in turn facilitated the setup and calibration of the injection molding machinery.

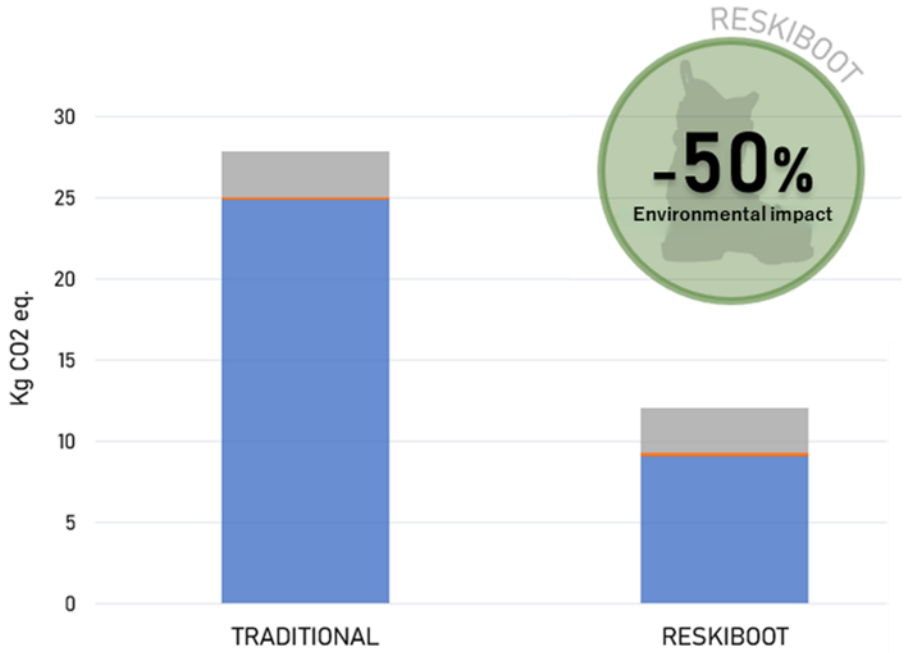


ENVIRONMENTAL STUDIES

The effectiveness of this circular economy model was confirmed through an environmental study based on Life Cycle Assessment (LCA), which showed that the environmental impact of the product is reduced by approximately 50% in terms of CO_2 emissions.

This benefit can be largely attributed to the substitution of virgin plastics with secondary raw materials recovered from end-of-life ski boots, given that plastics account for approximately 60% of the total weight of the ski boot and are associated with a high environmental impact in the production phase.

Finally, the results were published in an Environmental Product Declaration (EPD), which ensures transparent communication of the product's environmental performance and allows comparability with other products.



THE FINISHED PRODUCT

The LIFE Reskiboot is a ski boot developed from end-of-life rental boots and reintroduced onto the slopes as a rental ski boot. As such, it features a medium-to-low flex, is designed for high-volume production, and is equipped with standardized, widely available components, allowing for easy replacement when required.
Despite this approach, the product does not compromise on strength, durability or comfort. Laboratory testing and on-snow trials have demonstrated that the LIFE Reskiboot is fully comparable to the equivalent model manufactured using virgin raw materials.

THANK YOU FOR YOUR ATTENTION