



GRIDGRIPS: A NEW KIND OF GRIP FOR A NEW KIND OF RIDE

Application Introduction

GridGrips has established itself as a prominent player in the biking industry, catering to professional riders with a distinct product offering. The company's bike grips feature a standout characteristic: vertically oriented independent 3D lattice layers. Departing from conventional single contiguous layer designs, GridGrips integrates stacked layers of lattices, intricately interwoven at vertices across the surface. This innovative design enables the outer hand-contact layer to move independently of the inner bar-contact layer, delivering tangible benefits such as enhanced shock absorption and reduced hand/arm strain. Particularly advantageous for riders tackling challenging or rugged terrains, this innovation underscores GridGrips' dedication to reshaping the biking experience through thoughtful design and cutting-edge technology. With a commitment to providing dependable and professional-grade grips, the company caters to riders across various disciplines and riding styles.

APPLICATION:

Professional-grade bike grips.

MATERIAL:

LOCTITE 3D IND475

The Challenge

The development of these innovative bike grips presented numerous challenges. Greg Vehlies highlighted the complexity of the R&D process, noting, **"The overall concept and idea were simple, but the R&D process of testing shapes and lattice structures took multiple reiterations, as well as user testing, to find the best design that unlocked the full potential of Loctite resin."** Material selection posed a critical consideration, necessitating a resin that could offer both flexibility and robust physical properties to meet the diverse requirements of mountain bike, BMX, and cold-weather fat tire riders. The unconventional negative space designs inherent in GridGrips rendered traditional manufacturing methods impractical, prompting the adoption of 3D resin printing for in-house production. This approach not only provided more efficient control over the process but also minimized material waste, addressing the sluggish pace and high costs associated with traditional product development methods.

The Solution

- Material selection: LOCTITE® 3D IND475 Black

Henkel Material Used								
	Color	HDT at .455 MPA (°C)	Tensile Stress at Break (MPa)	Elongation at Break (%)	Young's Modulus (MPa)	Flexular Modulus (MPa)	IZOD Impact Notched (J/m)	Shore Hardness
		ASTM D648	ASTM D638	ASTMD638 D412	ASTM D638	ASTM D790	ASTM D256	ASTM D2240
IND475	Black	-	3.2	140	2.5	-	-	48 A (5 sec)

In tackling these challenges, LOCTITE® IND475 resin was selected for 3D printing, with an average print duration of 8 hours per job. The quantity of prints per job varied depending on grip model, printer model, and customer orders. The superior performance of LOCTITE® IND475 resin, meeting stringent quality control requirements and garnering positive customer feedback, emerged as the pivotal solution.



BENEFITS

Leveraging 3D printing technology in conjunction with Loctite 3D IND475 resin has profoundly transformed the operational landscape, presenting a multitude of advantages. Integrating in-house printing capabilities unlocked the potential to swiftly produce prototypes and gather feedback from pilot testers within weeks—a process previously spanning months with traditional manufacturing methods. This newfound agility not only expedites our product development cycle but also facilitates rapid design iterations based on direct input from a network of intermediate-to-professional riders. With unwavering confidence in the quality of Loctite 3D IND475 resin, GridGrips is empowered to make swift adjustments, ensuring their products consistently meet the highest standards. Moreover, this innovative approach not only enables GridGrips to scale at a sustainable pace but also yields competitive edge in their grip production costs.

Want to learn more about Henkel's unique material solutions for the additive manufacturing industry?
Visit Henkel's LOCTITE 3D Printing at [LoctiteAM.com](https://www.loctiteam.com) or reach out to us via loctite3dp@henkel.com

About **LOCTITE**

LOCTITE Additive Manufacturing delivers unique photopolymers with production capability, customized resins and engineering services to identify the best application to address your needs. With a constantly growing portfolio of high-performance materials, specialized equipment and post-processing solutions, LOCTITE overcomes the limitations of conventional 3D printing to enable additive manufacturing for the production of durable, functional parts. Through its strategic partnership with technology leaders for specialized equipment, LOCTITE is driving the adoption of 3D printing beyond prototyping and toward the production of final parts.
www.loctiteam.com

About **GRIDGRIPS**

GridGrips is a manufacturer of 3D printed resin grips for mountain bikes, BMX, and motocross and boasts of being the first such a grip design on the market. Dedicated to revolutionizing the riding experience through innovative designs and cutting-edge technology, GridGrips is guided by a commitment to superior performance and achieving the highest possible quality in their finished product. With new designs constantly under development, GridGrips continues to push the envelope of what is possible with grip designs and additive manufacturing technology.
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