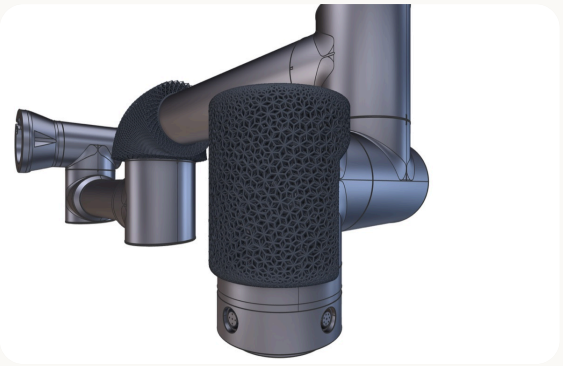
01 / LATTICE SKIN FOR COBOTS & HUMANOIDS

# Dermis

## A skin for your robot.

A lattice-structured elastomer add-on for the covers of collaborative robots and humanoids. It spreads impact energy over time and absorbs it on contact, making robots that work alongside people safer.



FEATURES

### Absorbs energy over time

The lattice buckles and recovers progressively, lowering peak impact force and extending contact time. It cushions physically even before sensors react.

### Fully programmable elasticity

Beam diameter and density grade continuously from surface to core: a soft surface and a load-bearing core, produced as a single part.

### Conforms to your robot

Designed from the 3D models of joints and covers to keep the full range of motion without gaps or interference. For robots without a model, we capture the geometry by reverse engineering.

FIG. 1 / CROSS-SECTION — SURFACE-TO-CORE GRADIENT

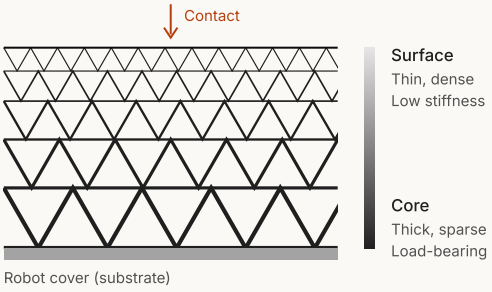
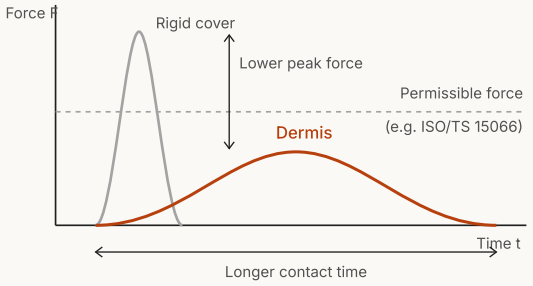



FIG. 2 / CONTACT FORCE OVER TIME (CONCEPT)




SPECIFICATION

| | |
|---|---|
| Material | Elastomer |
| Process | Carbon DLS (Digital Light Synthesis) |
| Structure | Variable beam diameter and density lattice, single part |
| Robots | Any make with a 3D model; robots without one via reverse engineering |
| Safety | Supports meeting ISO/TS 15066 permissible contact forces and pressures |
| Test data | Evaluation methods and data available on request |

PROCESS

01
### Receive 3D model
Or capture the geometry by reverse engineering

02
### Set risk areas and targets
Confirm contact areas, limits and range of motion

03
### Lattice design & analysis
Gradient design and cushioning simulation

04
### Manufacturing & delivery
Carbon DLS production, fitting and evaluation

**Send us your robot's 3D model and we will propose a Dermis solution.**

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