



CASE STUDY
POLYJET

SolCold

MATERIAL SCIENCE COMPANY

Company Profile

SolCold is an Israeli material science company founded in 2016 that develops solar-powered, passive cooling coatings. Its thin film technology reflects solar radiation, converts excess heat into harmless light, and releases it through radiative cooling to reduce temperatures without electricity. The company operates a roll-to-roll manufacturing process to produce its advanced cooling materials for industrial and commercial applications.



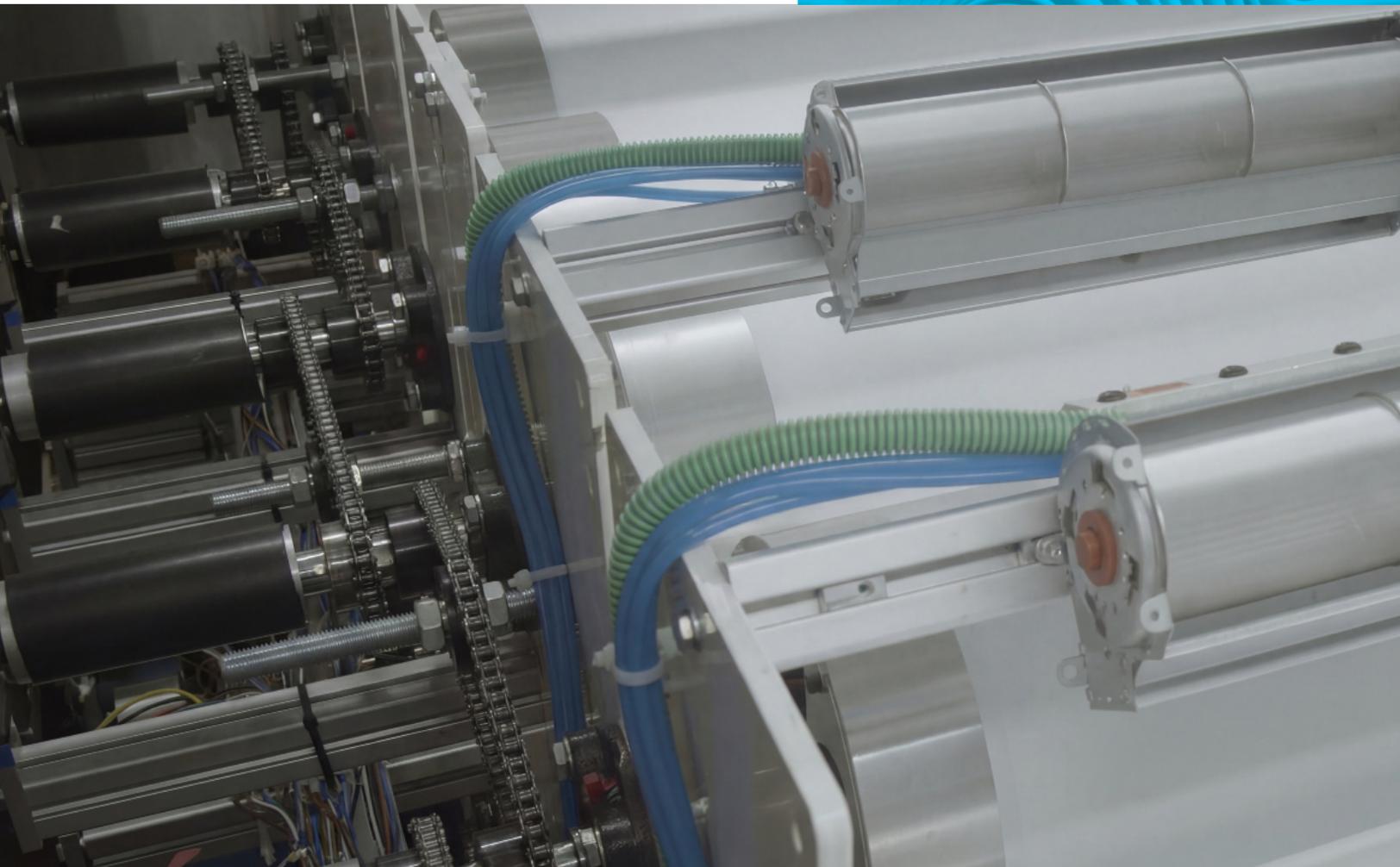
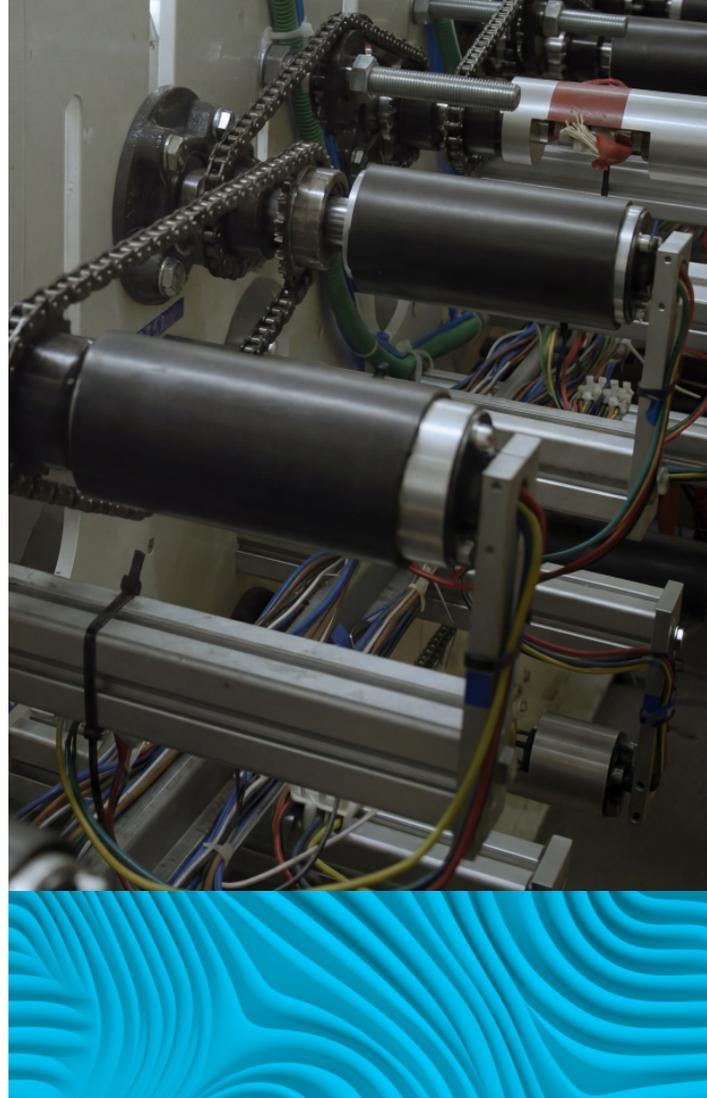


Challenge

During the buildout of a new production line, SolCold encountered a mechanical failure caused by incorrect gear ratios in a critical subsystem. The issue prevented smooth handling of the material membrane, halting production output at a time when the company had active customers and delivery commitments. A redesigned stainless-steel gear had already been ordered, but with a three-week lead time, production could not resume. SolCold needed a functional replacement part within 24 hours to restart its line.

Solution

SolCold consulted several service bureaus to explore rapid manufacturing options. Based on the mechanical requirements, the team recommended printing the gear using PolyJet ToughONE™. Despite initial skepticism about whether a polymer gear could withstand the load of a moving mechanical system, SolCold provided the design and proceeded with the expedited print. The ToughONE part was delivered within one day and installed immediately.





Impact

The ToughONE gear performed reliably, enabling SolCold to resume manufacturing while awaiting the metal component. The successful performance of the printed part changed the engineering team's perception of polymer durability for mechanical applications.

ToughONE is now considered a practical quick fix option for future production line needs requiring rapid turnaround.

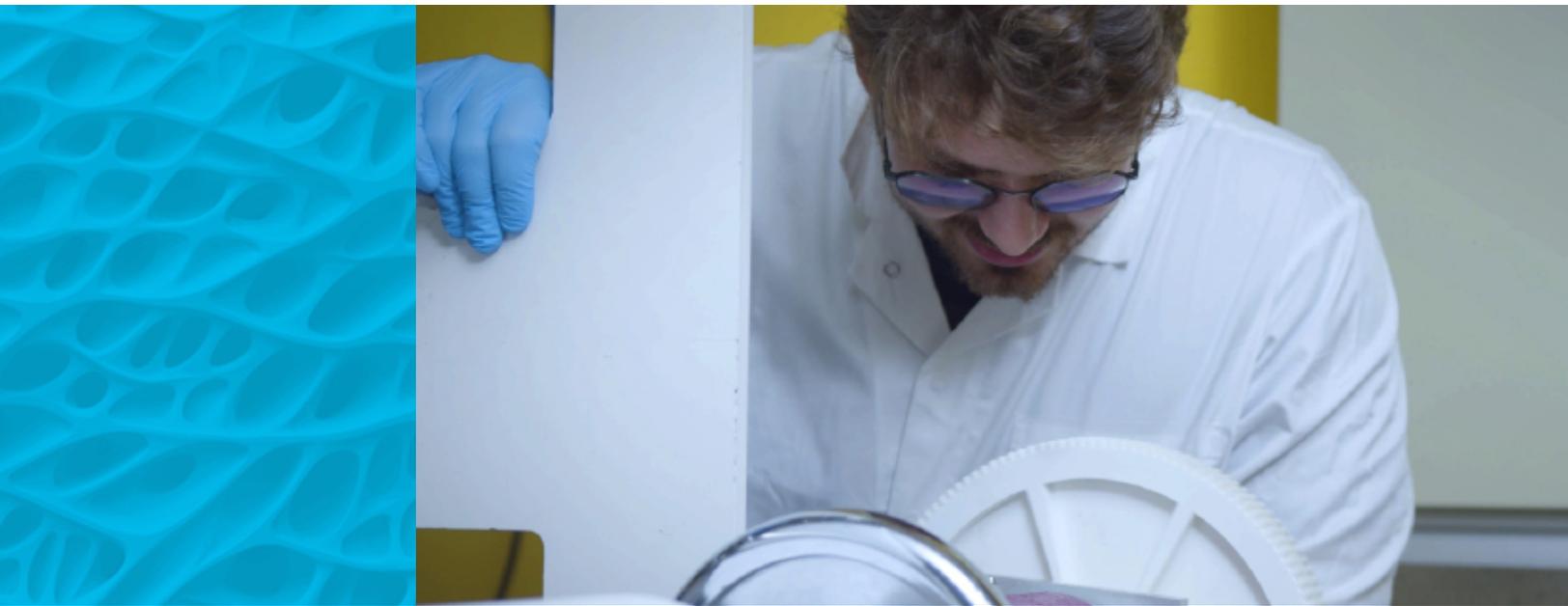
24 Hour Turnaround



Full Production Restored



3 Weeks Saved



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