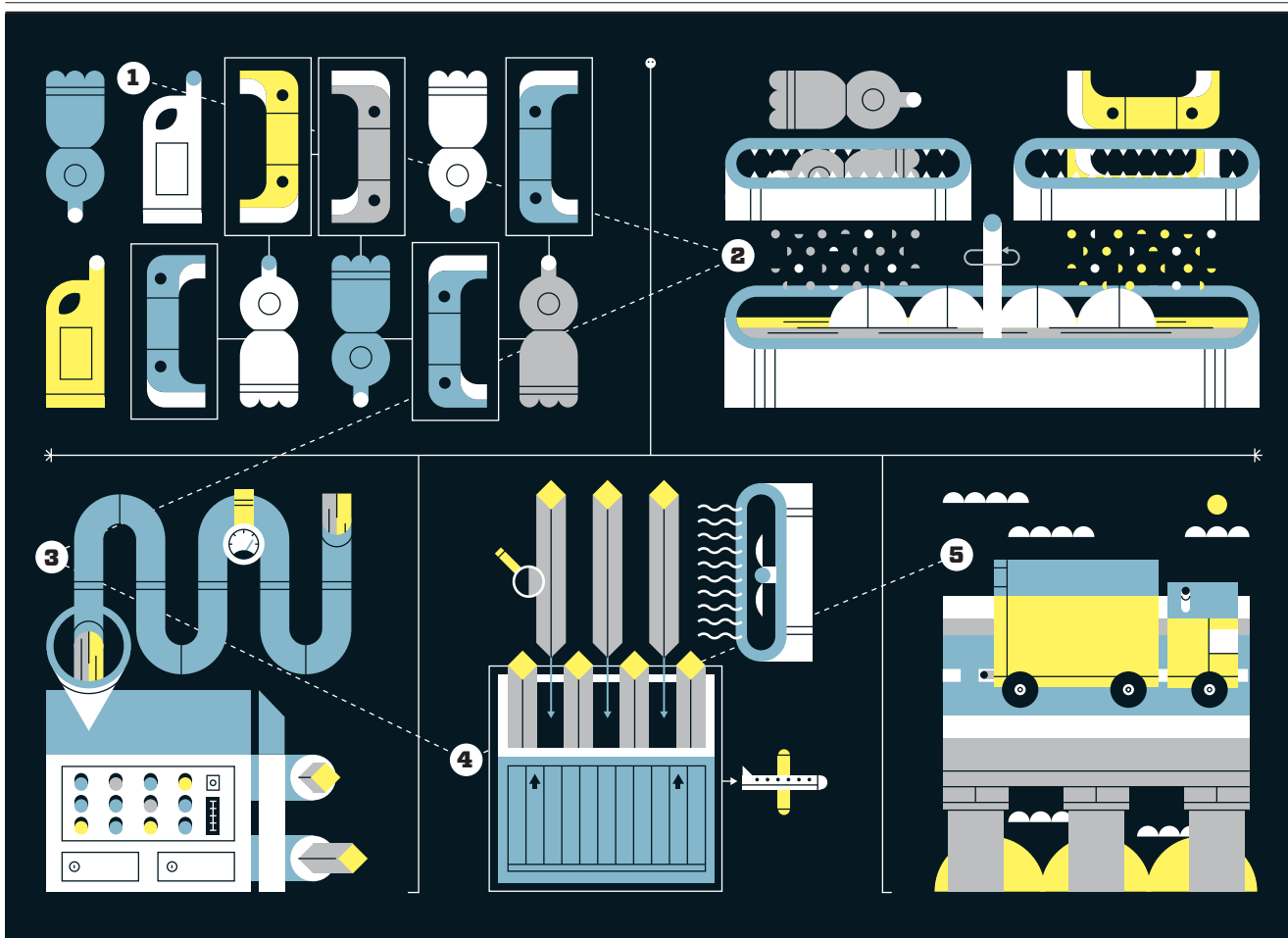


TECH

THE FUTURE IS NOW BOTTLES TO BRIDGES

Is plastic the new steel? Axion International of New Providence, N.J., is using technology developed at Rutgers University to build I-beams from recycled plastics. The beams today are used to build small bridges, a potentially big opportunity. [Studies say 80,000 such structures in the U.S. are nearly obsolete.] Axion says its beams are cost-competitive, and unlike rival materials they won't rust, corrode—or be eaten by termites. Here's how they're made. —Erik Rhey



1

RAW MATERIAL

Bales of No. 2 plastic [detergent bottles, milk jugs, and the like] and industrial-grade plastics [scrapped car bumpers] arrive at the Axion plant for processing.

2

LET IT SNOW

The plastics are put through a heavy-duty shredder and turned into snowflakes. Axion says each pound of an I-beam uses the equivalent of eight plastic bottles.

3

SECRET SAUCE

The flakes are combined with fiberglass and fed into a manifold where the mix is heated but not melted—and readied for molding into I-beams.

4

EXTRUSION

The softened polymer is extruded—or forced into molds of different sizes based on the specifications of the project—pressed into shape, and then cooled.

5

PLASTIC AT WORK

The beams are assembled into light-weight but strong bridges. How sturdy? An Axion structure at North Carolina's Fort Bragg supports tanks weighing 60 tons.