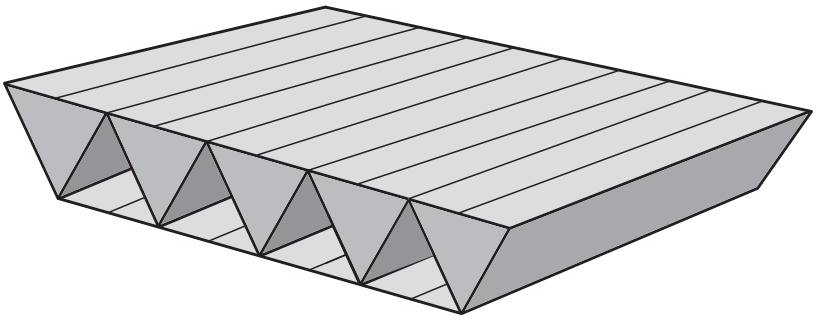
CORDION TECHNOLOGY

What IS Cordion?

The fundamental basis of Cordion technology is a folding geometry which forms an expandable panel. Cordion panels can create a wide variety of products such as folding boats for rescue, commercial, and recreational applications, folding antennas and other types of sensors for military and first-responder agencies, agricultural equipment, bridges, temporary shelters, landing pads, flooring, ballistic protection panels, and much more. Cordion can be made from metal, composite, wood, plastic—a vast range of materials and combinations to meet differing design requirements. Because Cordion is at its heart a truss system, it can be very strong and lightweight, yet still fold up to be more compact than a solid panel would be. Cordion products can be designed to balance both strength and space-saving properties.

Cordion panels can be flat, curved, or a combination of both. They can fold in a straight line, or radially like a fan. Cordion panels can be supported on their edges, they can be supported internally, they can be held in tension by cables, or they can be designed to self-extend.

The space-saving advantages of Cordion technology happen because the strong triangular forms can fold into quadrilateral shapes which reduce the total volume until the panel is in a much more compact state. At its most basic level, the Cordion technology geometry consists of three parts: Inner core sections and two outer faces. These faces and the inner core are made of smaller individual elements which are connected at various hinge points.



Different materials can be used in various elements of a Cordion panel to maximize the strength-to-weight ratio, or to optimize some other goal (like a folding antenna panel with a rigid face and a lighter structure behind to support that antenna element.) Changing the materials used in the sections and hinges can allow the whole structure to have very different capabilities for different applications.

Cordion is a versatile, material-agnostic technology, able to be adapted to suit a wide range of project requirements. It has been used for structural applications ranging from the simple (lightweight utility panels) to the complex (folding rescue boats/ultralight landing craft).

The materials used vary to suit the application. In the case of the boat projects, everything from carbon and Kevlar composites, aluminum, to the very traditional plywood! Varying the materials used can vary the strength and weight — and costs — to match the needs most appropriately.

The connections between the various components which make up a panel designed with Cordion technology — the hinges, in a way — can be tailored to meet each use, also. Cordion Corporation has developed several solutions to address a wide range of engineering challenges, from ultralight and very thin panels, to massive steel bridge sections. The "hinges" can be electrically and thermally conductive, while providing the strength required to suit each application. Hidden hinges to allow smooth surfaces (developed for folding touch-screen data panels) have also been demonstrated.

The key concept which makes Cordion technology unique is its ability to create objects which can expand to do their job...Meaning they can be folded for transport, storage, or launch, unfolded for use, then refolded for storage again. Cordion makes it possible to achieve this space-savings while still providing strong, lightweight designs.

In the case of antennas, the many flat parts of the basic geometry of Cordion can be tailored to match the intended antenna application, as in other designs. The front or back surface could be made conductive, antenna elements can be embedded in the surfaces (not just the parallel front and back surfaces, but potentially the diagonal interior core components as well).

For space-based uses, Cordion can offer large unfolding radiative surfaces which can also be structural components. The inner diagonal core sections of the Cordion design can be used as thermally conductive heat-transfer pathways, while still contributing to a strong assembly, in total.

Cordion offers efficient new ways to design objects, but because of its unique nature, it can sometimes be a little difficult for people to visualize how Cordion functions. We are happy to meet with people and introduce them to Cordion technology, let them play with samples, and start brainstorming. It's surprising how often people come up with entirely new ideas when they work with Cordion in person for a little while...

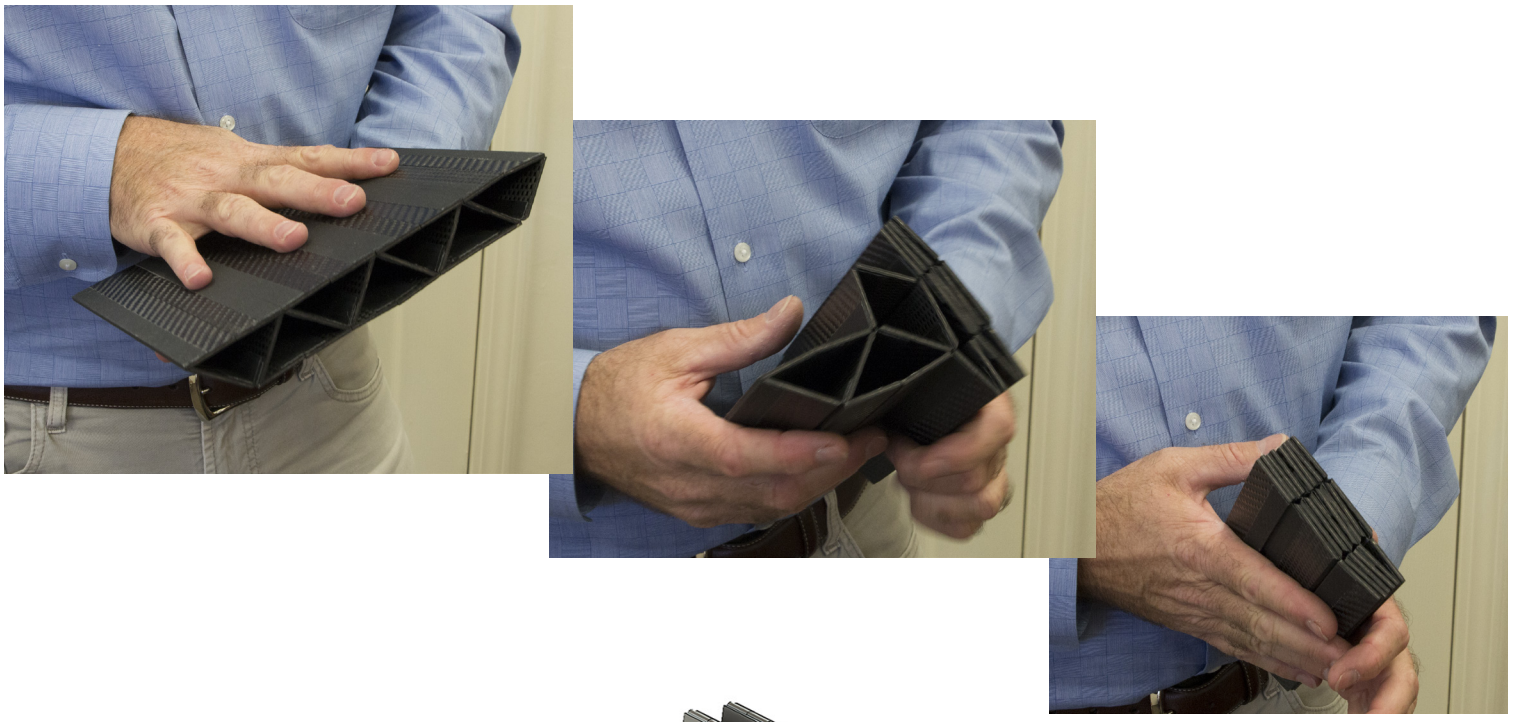
Please contact us and we can set up a meeting to start exploring how Cordion might help solve some of your design challenges!

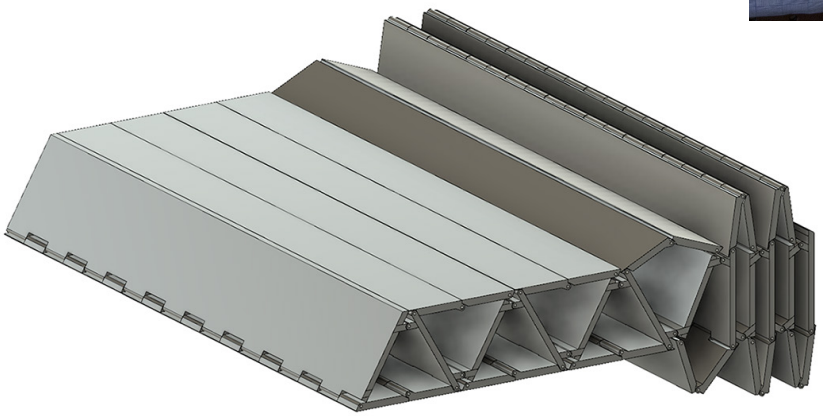
Some materials Cordion products can be made from:

● Carbon Fiber ● Aluminum ● Titanium ● Steel ● Plastic ● Copper
● Composites with Embedded Electronic Components ● Kevlar

Cordion products are:

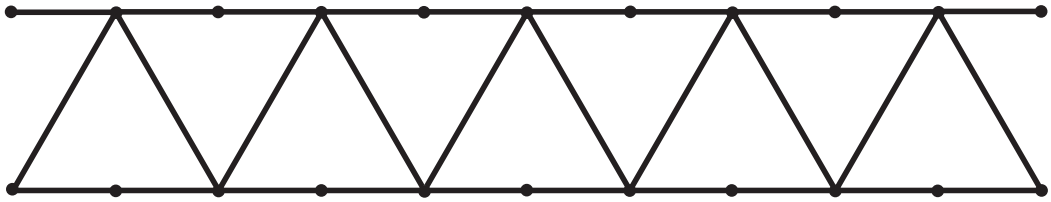
● Lightweight ● Extremely Strong ● Expandable/Collapsible ● Scaleable
● Rapidly Deployable ● Portable ● Very Compact When Stored



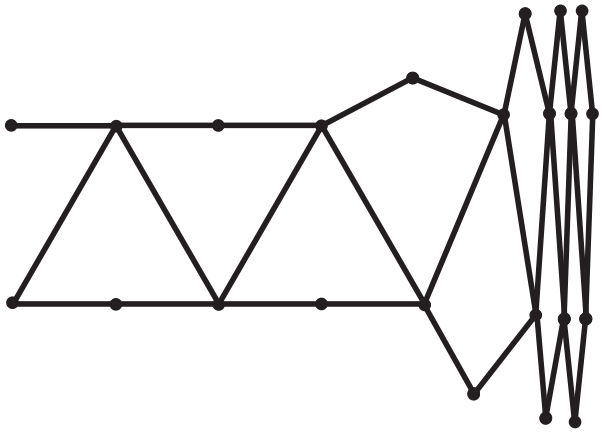


An example of Cordion technology unfolding to form a flat panel

How Cordion technology works:



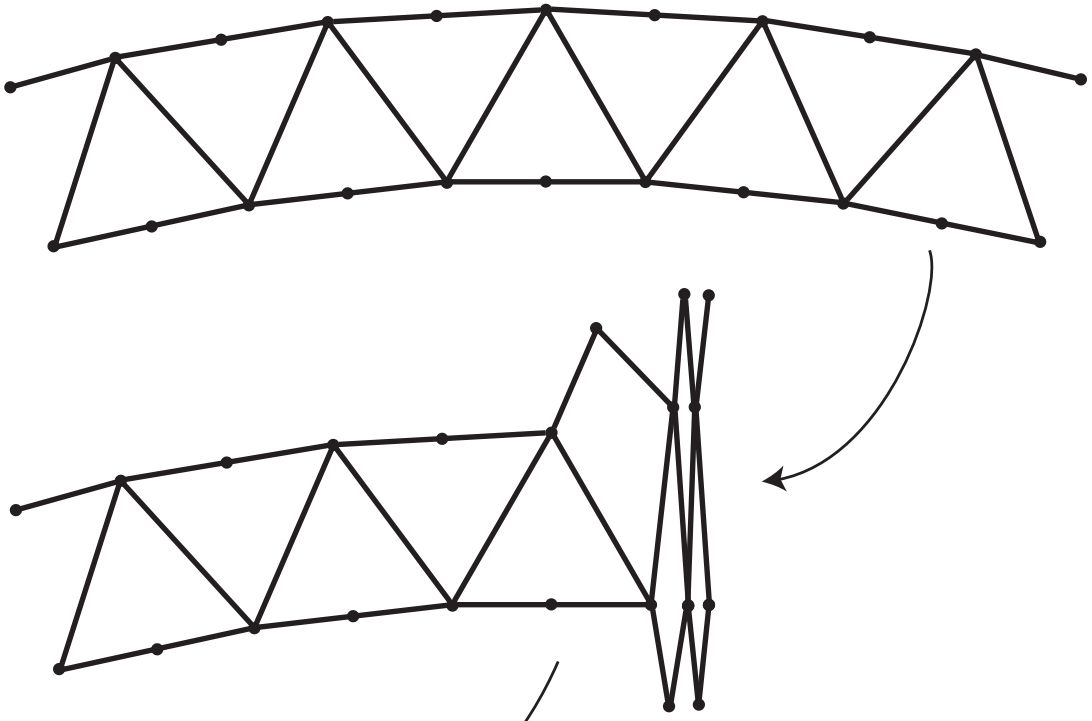
This is an example of an expanded Cordion Panel



Here it is beginning to fold...

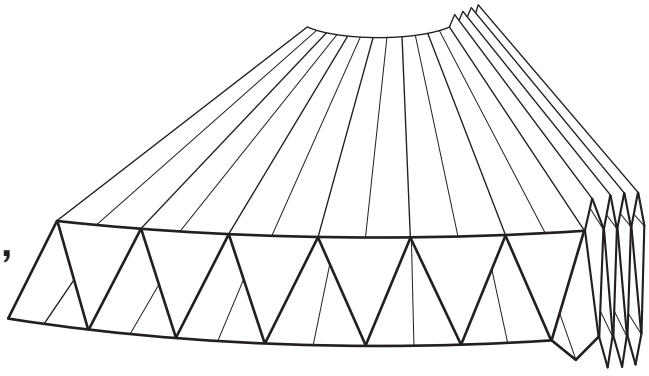
...to reach its compact state

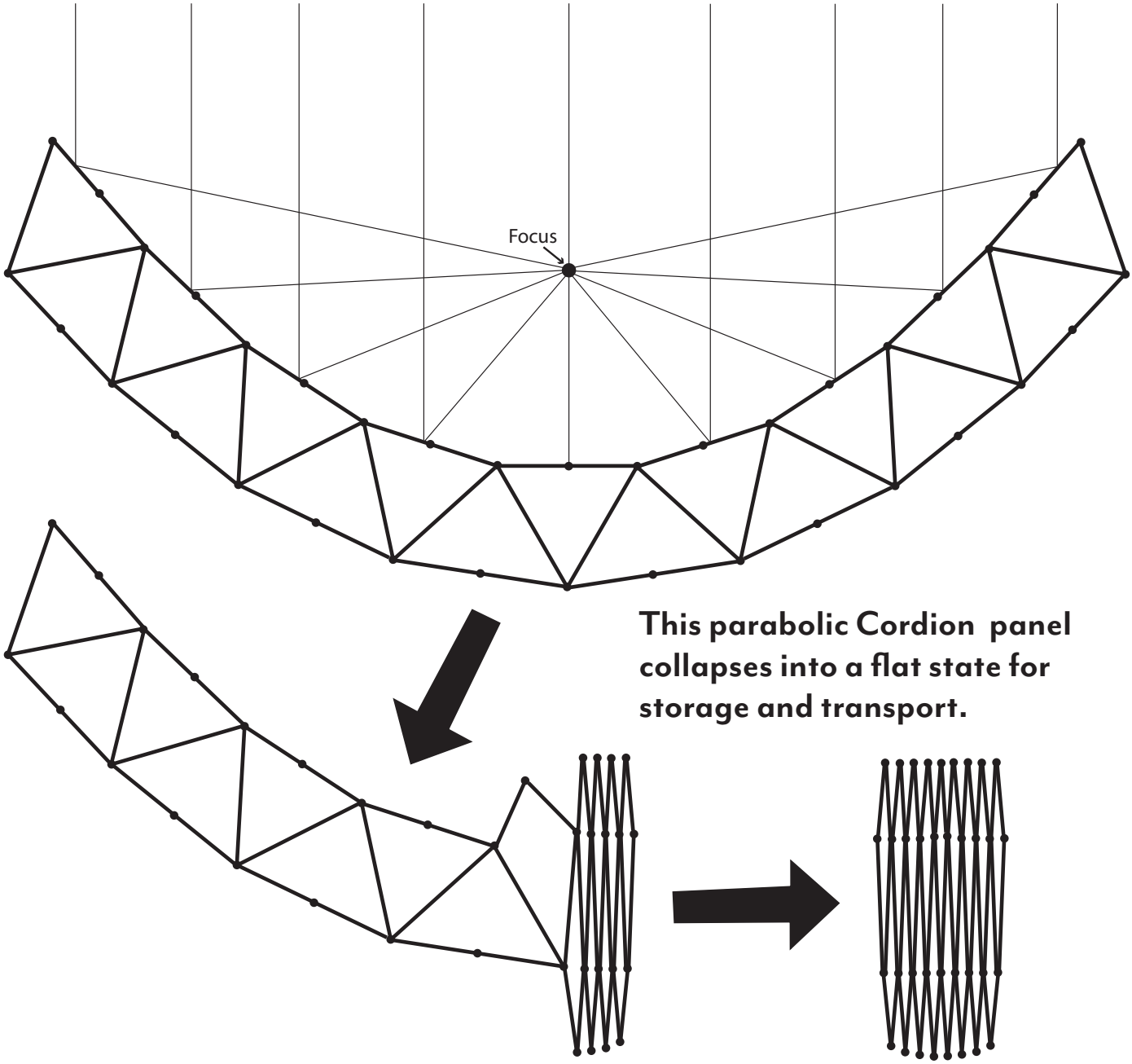
This curved section of panel collapses into...



...this flat state for storage.

An example of a radial, fan-shaped panel





This parabolic Cordion panel collapses into a flat state for storage and transport.

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