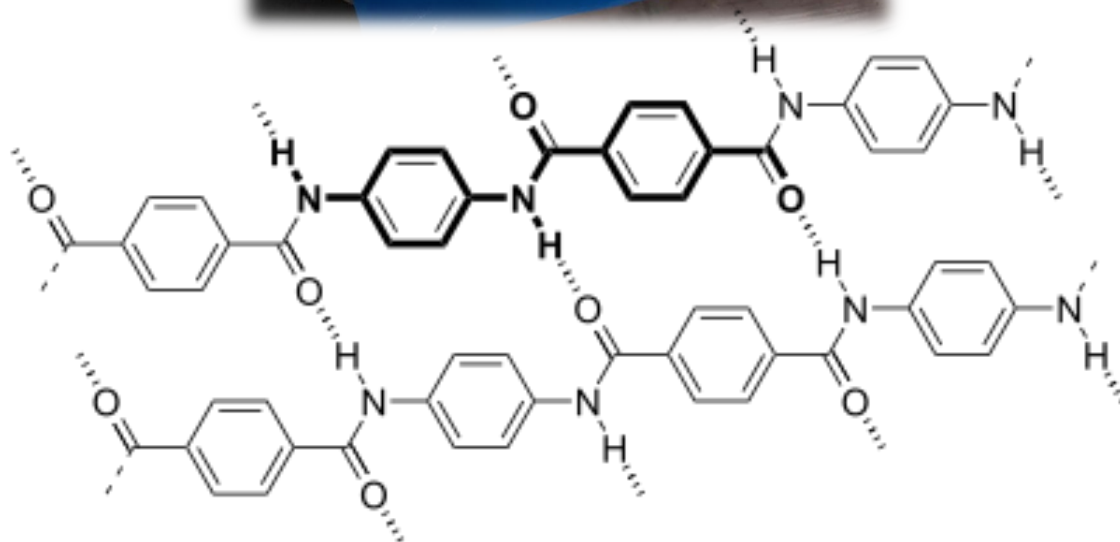


FortifiedEstate.com

## Para-Aramid (Kevlar) Wall Panels Submittal



Date: January 20, 2023

## **Para-Aramid Ballistic Wall Panels –**

Para-Aramid panels (commonly known as “Kevlar”) are made using an advanced and innovative proprietary adhesive formulated to reduce the number of layers needed to defeat NIJ IIIA rounds.

Para-aramid’s gain their bullet-stopping capabilities due to the chemical structure’s several repeating inter-chain bonds. These chains are cross-linked with hydrogen bonds, providing a tensile strength 10X greater than steel on an equal weight basis. The slight amount of flex they offer allows for a bullet to be captured, similar to how a speeding baseball is stopped by a simple net.

To ensure each panel is exactly the same, we use state-of-the-art high pressure hot/cold presses. We also insert heat sensors between each individual layer monitoring the inner core temperature to ensure an excellent para-aramid laminate able to stop up to NIJ IIIA rounds.

The 9mm, 357 mag, and 44 mag are no match for this light weight para-aramid ballistic panel. Kevlar Armor is perfect to use in safe room walls, bank teller partitions, judge’s chambers, behind court room desks and judge’s desks, guard booths, car armor, armored vehicles and anywhere a flexible lightweight bullet resistant solution is needed.

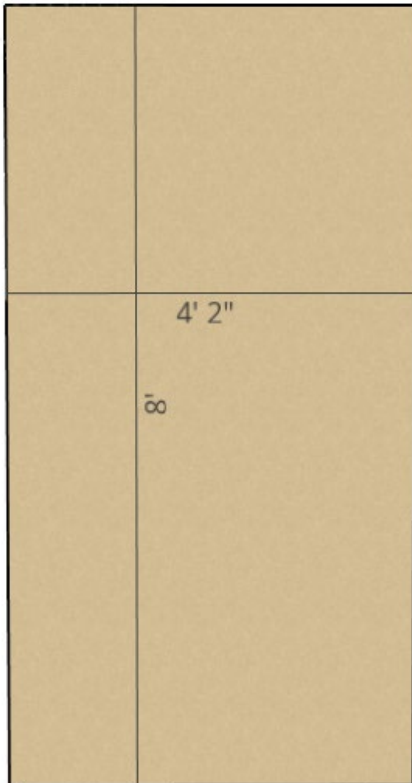
## **Kevlar Bullet Resistant panels are designed to meet the following specifications**

- Flexible and Thermoformable
- High strength, and low density
- Excellent energy absorption
- Defeats multiple round threats

## **Dimensions**

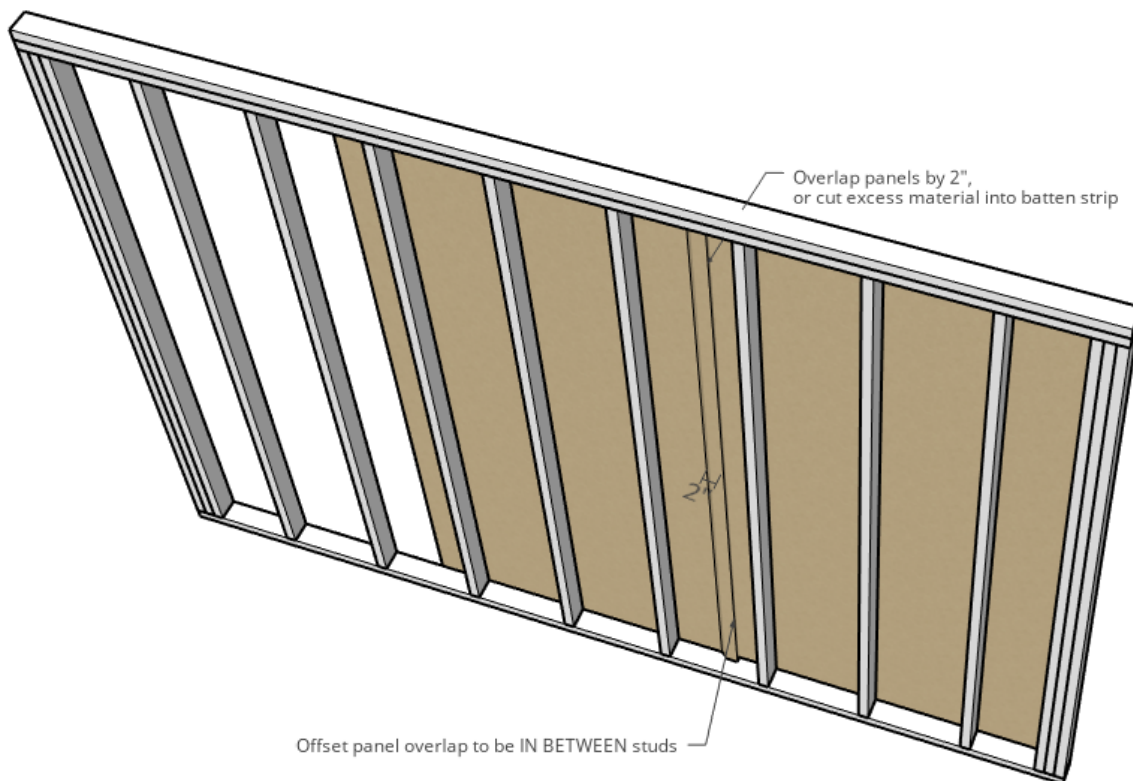
- The panels you will be receiving are 50" x 96" (W x H)
- The panels are approximately 0.2" thick
- Ultralight weight at 1lb. per square foot. Panel weight 34 lbs.

## **Visualization**



## Installation

Kevlar Panels can be installed in walls and behind desks and in vehicle doors using polyurethane-based glue such as Sikaflex 255. Also, these panels do not need predrilling as a self-tapping screw / drywall screw will go right through into a stud or a desk with little effort. Self-tapping drywall screws are the standard method of installation into walls. Panels can be installed with 2 inches of overlap between them in order to remove any unprotected areas. 2-inch overlap should occur between studs if possible.



## Cutting to Size

Beyond the standard 50" x 96" panel size, we can provide the panels pre-cut in the factory to smaller pieces. Panels can also be cut in the field. Avoid using a blade with big "teeth", as the breaking strength of the fibers will stop them. Instead, the easiest way to cut these panels is with a Jigsaw knife blade. The Bosch T113A3 is a jigsaw knife blade for soft materials that is commonly used successfully by clients.



## National Institute of Justice ballistic standards

| <u>NIJ Level</u> | <u>Test Round(s)</u>  | <u># Shots Required</u> |
|------------------|---|-------------------------|
| IIA              | 9 mm 124 gr FMJ at 1090 ± 40 fps<br>.357 Magnum 158 gr JSP at 1250 ± 50 fps | 5                       |
| II               | 9 mm 124 gr FMJ at 1175 ± 40 fps<br>.357 Magnum 158 gr JSP at 1395 ± 50 fps | 5                       |
| IIIA             | 9 mm 124 gr FMJ at 1400 ± 50 fps<br>.44 Magnum 240 gr LSWC at 1400 ± 50 fps | 5                       |
| III              | .308 Winchester 150 gr FMJ at 2750 ± 50 fps                                 | 5                       |
| IV               | .30-06 166 gr M2 AP at 2850 ± 50 fps  | 1                       |