



Legend:

Red: Measurements

Yellow: Permanent non-moving joint

Green: Flexible joint

A Note on Parts D and F: To make a full “clamshell”-style suit, you’re going to want to connect D to F with strapping, tape, or some other durable, flexible material. You may also want these straps to be padded, depending on the material of the armor. Further, if you choose to make pauldrons of some kind (to fulfill Shoulder Coverage requirements, for example), you will most likely be attaching them to these strips.

A Note on Part J: three of part J should be linked together, side by side, to create a flexible, track-like unit, to curve around your side. Frequently, this is where quick release clips or ties come in handy for securing the armor to your person.

Materials:

You can use basically any material to make the armor plates as long as the material is able to hold its shape and isn't floppy. Some materials that have been used successfully to make this style of armor are: EVA foam, MDF board, Plywood, Masonite, Corrugated plastic, Cardboard.

EVA Foam

Weight: Light weight (5-10 lbs per armor torso)

Durability: Moderate (can hold up to usual wear and tear but would probably require repairs if you tripped and fell on it.)

Weather Resistance: excellent (the foam shouldn't be able to absorb water.)

Joints: the unmoving joints can be joined with CA glue, contact cement or hot glue. The moving parts can be attached with strapping. The front and back plates can be attached together with strapping or industrial velcro.

Finishing: Plasti dip and paint are your friends. Tape can also work.

Difficulty: Moderate (cutting EVA cleanly and cutting the inside angles of the joints can be annoying if you don't have an orbital sander or dremel.)

Cost: Depends on how much finishing work you do or how complex you make the straps and moveable joints but it is a time consuming material. \$\$, 10-25 labor-hours

Cardboard

Weight: Very lightweight (1-2 lbs per armor torso)

Durability: Moderate (Surprisingly durable if you use heavy duty cardboard)

Weather Resistance: Poor (Even if you completely cover all the cardboard prolonged exposure to rain will weaken the cardboard.)

Joints: the unmoving joints can be joined with duct tape and reinforced with hot glue. The moving parts can be attached with strapping or a hinge of duct tape. The front and back plates can be attached together with strapping or industrial velcro.

Finishing: Cover in layers of duct tape to seal the cardboard and make it more durable. Tape doesn't stick to duct tape very well but plasti dip may.

Difficulty: Easy (all you need is scissors or a box cutter and some tape.)

Cost: Cardboard is free so your costs will be your tape, fasteners and any tape you use. \$, 4-8 labor hours

Corrugated Plastic

Weight: very lightweight (1-2 lbs per armor torso)

Durability: Moderate (Surprisingly durable if you use hot glue and tape.)

Weather Resistance: Good (extreme Heat and cold can damage duct tape.)

Joints: the unmoving joints can be joined with duct tape and reinforced with hot glue. The moving parts can be attached with strapping or a hinged duct tape joint.. The front and back plates can be attached together with strapping or industrial velcro.

Finishing: Cover in layers of duct tape to seal the cardboard and make it more durable. Tape doesn't stick to duct tape very well but plasti dip may.

Difficulty: Easy (all you need is a box cutter and some tape.)

Cost: corrugated plastic can be found at sign shops and art supply stores. \$, 3-6 labor hours

MDF, Masonite, Plywood.

Weight: HEAVY (35-50 lbs per armor torso)

Durability: Excellent (You are more likely to hurt yourself than the armor in a fall.)

Weather Resistance: Good (If painted with a weather resistant paint)

Joints: the unmoving joints can be joined with pop rivets and metal plumbers tape; the gap can be filled with liquid nails caulking. The moving parts can be attached with strapping. The front and back plates must be attached with strapping. Paddling on the insides of the shoulders and rib plates (plates J and I) is recommended. It is also recommended that you have the rib plates strap to each other as well around the front.

Finishing: a few layers of paint and varnish are a good idea, the more layers the better as it will protect the armor.

Difficulty: High (cutting the parts out requires a jigsaw or a handsaw plus a lot of time.)

Cost: This is the most labor intensive option. I would suggest getting the rivets from McMaster-Carr because you will need around 200-250 of them for this build. \$\$\$, 40-60 labor hours.

Sample Corrugated-Plastic-and-Tape Armor in Progress



Sample Masonite Front Plate



Sample Masonite Back Plate



Top View, With Shoulders



Sample EVA Foam Chassis with Sintra Shoulders



Regarding Arms and Legs:

We recommend athletic protectors for use as arm and leg armor. Catcher's leg protectors aren't a bad place to start, and youth shin guards can make a good basis for arm guards.

If you have any questions, please feel free to reach out to Skye at Skye@hellcatjive.com