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# ARMOUR 101

By the Cosplay Repair  
Station

# COSPLAY REPAIR STATION



Located in ECS 128

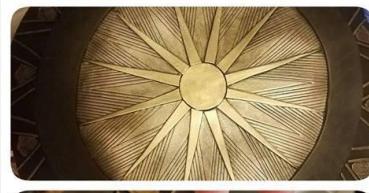
We specialize in quick fixes,  
'cos it breaks!

Fri: 2p - 6p  
Sat: 11a - 6p  
Sun: 11a - 4p

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# TOPICS

Patterning

Types of Armour Material

Supplies and Techniques

Priming Armour

Painting

Sealing / Varnish

Attaching

Question Period

# PATTERNING

## Method 1: Plastic Wrap+Tape

- Step 1: Cover desired area with plastic wrap
- Step 2: Cover again with masking tape over the wrap
- Step 3: Draw outline of armor  
Cut wrap off, paying attention to seam line placement
- Step 4: Trace out pattern onto paper



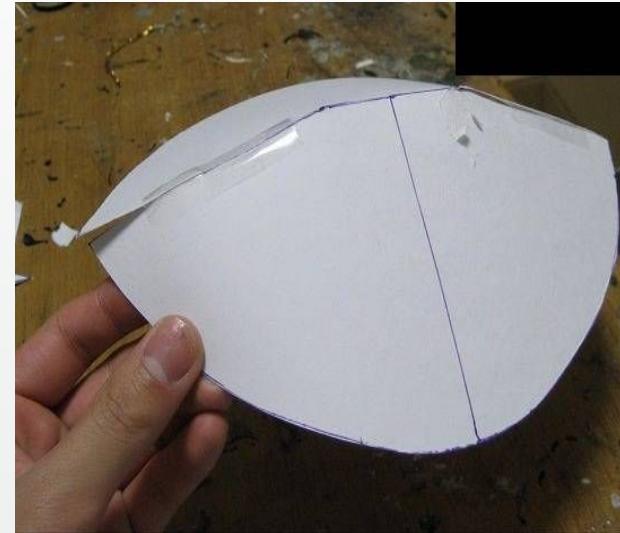
# PATTERNING

Method 1:  
Plastic Wrap  
+Tape



# PATTERNING CONT.

Method 2: Franken-pattern



Step 1: Start with a basic shape for the piece, cut from paper

Step 2: Note the measurements your piece needs to be

Step 3: Cut and tape paper onto or off the pattern until it matches the measurements and looks how you want.

Step 4: Trace this mess onto a new sheet

# PATTERNING CONT.

Method 2:  
Franken-pattern



# TYPES OF ARMOUR MATERIAL

	Price	Where to Find	Difficulty Lvl
Paper Mache	Free to \$	Recycling bin	Low
Cardboard	Free to \$	Recycling bin	Moderate
Craft foam	\$	Craft stores	Low
EVA foam	\$\$	Hardware stores, sport goods stores, online	Low
Thermoplastics	\$\$\$ -\$\$\$\$	Online, some craft stores	Moderate to Hard

# TYPES OF ARMOUR MATERIAL for Base

Craft foam or EVA foam

Styrofoam

Insulation foam (pink or purple)

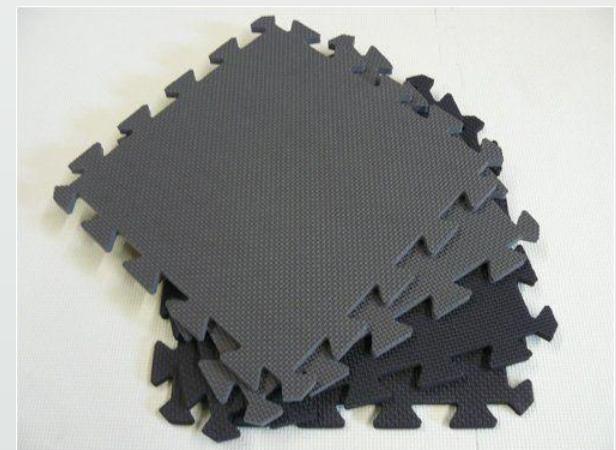
Expanding foam

Thermoplastics:

Wonderflex

Worbla / Black Worbla

and more!



# TYPES OF ARMOUR MATERIAL for Details

Resin clay

Friendly Plastic

Stretch vinyl/pleather

Hot glue and puffy paint

Thermoplastics:

Various Worbla products

Thibra

and more!



*Pro tip: Pipe hot glue or Worbla into silicone fondant molds for precise details*

# TYPES OF ARMOUR MATERIAL

for Base or Details



# TYPES OF ARMOUR MATERIAL not covered

- ABS plastic
- Fiberglass
- Resin casting
- 3D printing (PLA or resin)
- Everything else!

# SUPPLIES AND TECHNIQUES

- Heat gun
- X-acto knife
- Sharp scissors
- Contact cement, super glue
- Hot glue
- Dremel
- Sandpaper
- Cutting mat or surface
- Ruler/straight edge
- Markers

# SUPPLIES AND TECHNIQUES CONT.

- To cut foam: use a sharp blade/X-acto knife. You can use straight edge if needed.
  - For thermoplastics and foam: heat material to shape with a heat gun and form object as needed.
  - For round shapes: Worbla: stretch around acrylic ball.  
EVA foam: press into round bowl.
  - Be sure to protect your work surface with a cutting mat or alternative.
  - Worbla: cut slightly larger pattern to cover craft foam base.
- Make your own foam ruler for exact measurements.*

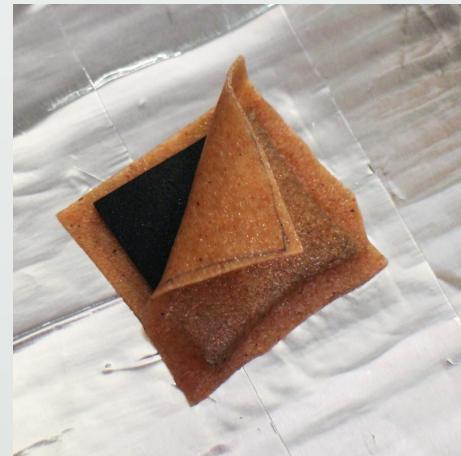
# SUPPLIES AND TECHNIQUES CONT.

- Contact cement - It is good for large foam surface areas and seams. It creates a strong bond – you apply to both sides of the foam. Be sure to follow instructions.
- Superglue is useful for small foam attachments.
- Hot glue is very general and good for quick and simple attachments. However contact cement and superglue are both cleaner and stronger when used correctly.
- For beveled edges, cut foam at a slant with sharp knife or x-acto knife, and you can also Dremel or sand. Beveled edges make the final product look more dimensional.

# SUPPLIES AND TECHNIQUES CONT.

## WORBLA

- Craft foam typically should be the base of your Worbla structure, as Worbla can be fragile alone.
- To combine materials, heat the Worbla (shiny side up) and apply craft foam layer.
- To conserve Worbla, fold Worbla over edges of foam.
- Alternatively, you may “sandwich” whole pieces of Worbla and trim excess.



# PRIMING ARMOUR

*Why do we need to prime?*

Though sometimes you can get away without priming, it prepares your armour for its paint job.

Creates a smooth, sealed, and clean surface for your paint job. EVA foam absorbs paint, and Worbla has a rough surface. Priming solves these issues.

Especially important for metallic paint



# PRIMING ARMOUR CONT.

	Price	Method	Where to Find	Sandable?
Wood Glue	\$30~ for 3L (cheaper in bulk)	Brush	Most hardware stores	N
Gesso	\$30-40 for 1L	Brush	Michaels**, Opus, Deserres	Y
Mod Podge	\$20~ for almost 1L	Brush	Michaels**	Y
Plasti-Dip	\$20-25 per can in Canada	Spray	Online, US, or Canadian Tire	N
Rust-Oleum Primer	\$8~10 for a can	Spray	Most hardware stores	N

\*\* Without coupon. Make sure you coupon up!

# PRIMING ARMOUR CONT.

- For the best paint job, keep your priming smooth
- Use sandpaper to erase brush strokes after drying
- For spray primers, follow instructions and keep your layers light
- Do not over apply your primer or you may be left with a runny surface



Black Gesso



Plasti-Dip

Wood Glue

# PAINTING

- After a clean priming job, time to start painting!
- There are many techniques to painting. If you don't need much detail, using spray paint can be a simple solution.
  - To ensure your spray paint does not "bead" against the primer, **test your paint first! Lacquer hates enamel and acrylic**
- For detailing and shading – Acrylics

# PAINTING CONT.

- Armour should begin with a base colour in between the darkest and lightest (spray paint is fine)
- Dab on a darker colour of the base where shadows would be, vice versa for lighter
- You can flick a paint brush with red paint to create blood effects



# SEALING / VARNISH

Why apply a finishing coat?

Protection against the elements

Scratches

Enhance final finish

What's your desired end result?

Glossy, Matte, Satin, Metallic

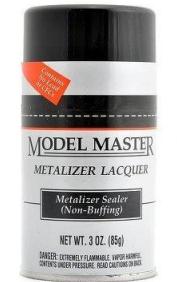
Test sample!

The test sample should be a scrap of the same material, with the same paint/finish as the rest of your armor.

# SEALING / VARNISH CONT.

What paint type did you use?  
Laquer

- Alclad Lacquer Klear Kote, Testor sealer metalizer



Enamel

- Enamel Clear coat (spray can)



Acrylic

- Krylon Acrylic Spray Paint Crystal Clear
- Liquitex Varnish



Latex or Plasti-Dip

- Plasti Dip Clear (matte) or Glossifier



# ATTACHING ARMOUR

## Common Materials

- Velcro
  - Preferably not adhesive Velcro
- Nylon Webbing
- Sewing Elastic
- D-Rings
- Side Release Buckles and Slides
- Snaps and Hooks
  - For Fabric to Armour
- Cords or Ribbons
  - Not as strong, but can be useful for character-specific designs.



# ATTACHMENTS CONT. - COMBINATIONS

Elastic



You can glue directly on the armour

Nylon / Side Release Buckle



Can be sewn like a bra or belt!

Nylon / D-Ring / Velcro



Before priming, you can attach D-Rings to the Worbla

Snap



Photo by Bill Doran

There are many combinations. Plan ahead!

Questions?  
Thanks for attending!

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