

## BeDry Pad Design and Testing

Updated 6-12-23

### Testing

**Requirements:** Base requirement was to develop a removable, reusable pad that can easily be washed and would be comfortable to wear. Keeping cost low, while not being the primary requirement, was a consideration. Purpose is to hold sufficient urine to allow the children to attend school and other activities confidently. According to a urology expert, unrestricted urine flow for a child is approximately 8 ounces every 4 hours, with less at night.

**Process:** We tested a number of different fabrics recommended for incontinence, diapers and period panties. These included various wicking fabrics, moisture barriers and absorbent layers. Fabrics were cut into the pad shape. Each was tested for wicking (how long it took moisture to absorb into the surface of the pad vs runoff the edge). Each was also tested for how many teaspoons of water it could hold before dripping out.

Once the fabric selections were narrowed down from the above testing, they were tested in various combinations and quantity of layers to achieve the best results.

1. Zorb 3D was selected as the next to body layer because it wicks moisture quickly away to the inside of the pad and remains relatively dry to the touch after being exposed to liquid.
2. Zorb original was selected as the interior layers because it holds the highest quantity of liquid. In an undisturbed pad, this construction contains 8 oz. of liquid without dripping.
3. The polyurethane film was selected to act as a lightweight moisture blocking barrier.

### Construction

1. Next to body is a layer of Zorb 3D fabric, designed to quickly absorb moisture and wick it away from the body to the interior of the pad.
2. The interior of the pad is composed of several layers of Zorb original to hold the liquids.
3. Next to the underwear, there is a thin fabric bonded with a layer of polyurethane film, to block moisture penetration.
4. The pad is constructed with polyurethane film bonded fabric gussets to prevent moisture leakage at the sides, as well as provide a comfort fit shape.
5. The pad is attached to the underwear with one snap in back and two snaps in front to hold it securely in the underwear, but still being easy to remove and replace as needed.
6. The underwear is also constructed with a center lining panel bonded with a layer of polyurethane film, so that should an unexpected pad leak occur, the underwear will not transfer the moisture from the inside to the outside and soil the wearer's clothing.

## Additional Performance Information

### Inner Pad: Zorb Original Features & Benefits

- Exceptional absorbency: Zorb Original Fabric can absorb 10 times its weight in under 2 seconds, surpassing bamboo, cotton, and hemp knits.

- Eco-friendly composition: Made from an optimum blend of cellulosic fibers combined with synthetic fibers.
- Chemical-free and sustainable: Free from harmful substances like PFOS, PFOA, BPA, and super absorbent polymers (SAP), ensuring an environmentally responsible choice.
- CPSIA certified: Meets stringent standards set by the U.S. Consumer Products Safety Commission on lead, phthalates, and flammability.
- Durable and consistent performance: Maintains its super absorbency throughout its lifetime for long-lasting, reliable use.
- Minimal shrinkage and stretch: Retains its shape and size, allowing for precise design and construction.
- Environmentally conscious choice: Make a positive impact by choosing a fabric that is eco-friendly and free from harmful chemicals.
- Safe and certified: Rest assured that Zorb Original Fabric meets strict U.S. Consumer Products Safety Commission standards, ensuring product safety.
- Time and resource-saving: Replace multiple layers of other materials with just one or two layers of Zorb Original Fabric, streamlining production and reducing waste.
- Consistent high performance: Trust Zorb Original Fabric for long-lasting absorbency and durability in various applications.
- Design precision: The fabric's minimal shrinkage and stretch allow for accurate design and construction, catering to a wide range of products.



## Outer pad: Zorb 3D Bamboo Dimple Heavy Duty Features & Benefits

- 100% Free of PFOS, PFOA, lead, dioxins, heavy metals & BPA; Free from phthalates: contains no DEHP, DBP, BBP, DINP, DIDP and DnOP.
- This fabric is Ready-to-Absorb when you purchase it. There's no need to prewash and dry it to activate its super absorbency.
- It can be used on its own, not as an interlining so it's ideal for reducing cost, increasing product performance and supporting the environment
- Absorbs 10 times its weight in under 2 seconds and soaks up 20 times faster than other material (bamboo, cotton, hemp knits)

## Direct to Source



- Durable & reversible, it contains thirsty Zorb® 3D fibers between a face and back of 70% bamboo and 30% organic cotton
- Unique, three-dimensional engineered dimple pattern provides greater retention, superior hold, faster distribution of moisture and less leaking under compression
- 2 layers will replace 12 layers of flannel, 8 of french terry and 7 of fleece.
- CPSIA certified, meeting stringent standards by the U.S. Consumer Products Safety Commission on lead and phthalates and flammability.
- Engineered to meet exacting USA requirements, this is the highest quality-assured organic fabric on the market.
- All Zorb fabrics are super absorbent by virtue of their knitting construction; they are not made with SAP (super absorbent polymers), so their super absorbency lasts for the lifetime of the fabric.
- All Zorb fabrics are designed with the ability to exponentially increase their absorbency; use multiple layers of Zorb to supercharge your products' absorbency.



## Waterproofing: Polyurethane Film Features & Benefits

- 100% Free of PFOS, PFOA, lead, dioxins, heavy metals & BPA; Free from phthalates: contains no DEHP, DBP, BBP, DINP, DIDP and DnOP.
- Soft & flexible waterproof fabric is created by laminating 1 mil polyurethane film to a premium quality lightweight fabric.
- 100% eco-friendly.
- Super soft, breathable and flexible.
- CPSIA certified, meeting stringent standards by the U.S. Consumer Products Safety Commission on lead and phthalates and flammability.
- Very durable, tested to withstand 300+ washings.
- Unique process permanently melt-bonds our specially-treated 1-mil TPU film to the fabric without toxic solvents. The process emits no toxic waste or VOCs that are harmful to the environment.

