



## **All mats are not created equal!**

In the PCM system we use a 4'x6'x2" foam mat during prone immobilization procedures. The mats used must not only have certain dimensional attributes, but must also meet other clinical/safety requirements:

1. Mats must be relatively lightweight: Mats that are too heavy are difficult to move about quickly. There are times when it is safer to bring the mat to the individual in crisis than to attempt to transport the individual to the mat.
2. Mats must be ergonomically designed: Mats that can fold in half and have handles can easily be carried from one location to another.
3. Mats must be comfortable: There is a lower probability of escape motivated behavior if an individual is relatively comfortable. Also, an individual in crisis can more easily relax if they are comfortable.
4. Mats must be safe: Mats must prevent friction-based, impact-based, and compression-based injury. The surface must be smooth so there is little risk of abrasion, and they must be firm enough to prevent injuries due to falls (acute impact) and those to due sustained pressure (while the individual is being held). Mats must also be firm enough to prevent breathing difficulty (a person's face must not sink into the mat).
5. Mats must prevent competing stimulation: Mats must also be firm enough so that the individual cannot feel the surface beneath the mat and soft enough so that when full pressure is being applied the person is still comfortable. Stimulation from a hard or irregular surface can cause an escalation in crisis behaviors and prevent accurate feedback which could prevent relaxation.

### **Technical Characteristics of Foam Mats**

Mats that are both clinically effective and safe are chosen based on both static and dynamic foam characteristics. There are two widely used measurements of the quality of foam and they are density (static characteristic) and the IFD rating for the foam (dynamic characteristic). IFD is an abbreviation for **Indentation Force Deflection** (formerly known as Indentation Load Deflection).

**IFD** is one of the measurements used to demonstrate how soft, or stiff, a foam is. IFD values are determined by measuring the force required to press and hold an 50 square inch indentation foot (a metal disc) into a foam sample. The measurement is expressed as lbs. of force/50 square inches. The most common measurement is based on compression of the foam (usually a 15x15 inch square that is 4 inches thick) to 25% of its original thickness. Basically, the higher the IFD value, the harder it is to make the foam "bottom out" (compress it so much that you can feel the floor beneath the foam). For example an IFD of

20 would mean it takes twenty pounds to press the disc into the mat far enough to compress it to 25% of its original thickness.

**Density** of a particular grade of foam is simply its weight and is expressed as pounds per cubic foot (PCF). Density is not necessarily indicative of the IFD rating of a piece of foam, that is, it is possible to have a very dense piece of foam (heavy) that has a very low IFD rating (the foam may have a spongy feel).

**How does all this translate to crisis management?** That's a very good question. In short, although PCM specifies that the mat used for the prone immobilization must be at least 2 inches thick, it is easy to see that 2 inches of the wrong foam might not provide sufficient support to prevent "bottoming out." In particular, one should avoid using mats with cheap foams such as what are commonly referred to as bonded foams or "re-bond" which is basically ground up carpet remnants that are glued together. We strongly recommend the use of PCM mats as they are constructed from superior grade polyurethane foam and have a high IFD value (firmer than the hardest bed) yet a low density. What does this mean? Basically, they are lightweight, yet provide excellent support without being too hard or uncomfortable. Remember, regardless of thickness, a mat that is too stiff will be uncomfortable and one that is too spongy may result in injury during a fall (due to bottoming out), during immobilization, and may cause breathing problems if a person's face sinks too far down into the mat.

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