

A Guide to Positioning Sponges

Before you can understand and properly use positioning aids, you need to understand what the “field of view” for imaging is. Understanding the field of view is critical when using positioning aids properly.

When a technologist needs to take an image, positioning sponges are used for generally two purposes:

First is comfort and support for a patient while imaging a specific body part. Imagine if a patient was in a car accident and broke their hand. You need to take an image of the damaged hand. However, the patient’s arm is badly scrapped or cut and they are extremely sore or bleeding.

In order to position the patient properly, safely and comfortably, you may use a positioning sponge to prop up their arm. Since you are imaging only the hand, this sponge is not in the field of view. Because of this, it does not matter if this sponge is radiolucent or if it will show in an image. The sponge (if coated) is protected from the bodily fluids and can be wiped clean after use.

The other purpose is positioning of the actual body part in the image. Let’s say you need to image the hand of the patient in the car accident. However, the hand is so badly damaged that you cannot spread the fingers apart properly to get the angles needed. You may use a sponge to rest the patients hand on during the procedure. The angles or “steps” of a hand sponge will help spread the fingers and position them properly for the image. Since this sponge is in the field of view, it is extremely important that the sponge be radiolucent and will not show an artifact.

Different sponges are designed for these specific purposes.

Artifacts and Acceptable Images

Now that you understand what the field of view is, you need to understand an artifact. An artifact is anything that shows on an image that distorts or disrupts the *image of the body part being examined*. This is NOT to be confused with a sponge showing outside of the body part.

Using the damaged hand as an example again: If the hand is shown in the image and the only part of the sponge you see is the outer border (passing through the wrist or arm), this is not an artifact. This is considered an acceptable image.

Since the sponge only shows through a part of the body NOT being examined, it is not considered an artifact. It is ONLY when a line or mark shows THROUGH the body part or extremity being imaged that it is considered an artifact.

Artifacts are different than shadows. Shadows may occur with any sponge. However, a sponge will instantly show on an image if it has any sort of coating. A coated or vinyl covered sponge will show shadowing on any image. The chemical composition of coating and the thickness/material of vinyl shows during imaging. However, shadowing does not make an image unacceptable. As mentioned before, it is ONLY when a line or mark shows through the specific body part being examined that it is an unacceptable image.

Coated Sponges VS Non-Coated Sponges

A non-coated sponge is simply a bare piece of sponge cut into a particular shape. Think like a standard kitchen sponge. No coating, porous (absorbs liquid) and not very durable. These types of sponges exist because some applications and some facilities require nothing more than a basic piece of sponge. Most doctors' offices will rarely ever have a need for a positioning sponge. Since it is not a high commodity, they order basic (non-coated) sponges to keep costs as low as possible.

Some facilities and usage require protecting the sponge from absorption of liquids and bodily fluids. In the rare time that a doctor in a small practice uses a sponge and the patient bleeds on it, that sponge needs to be disposed of and they would have to order a new one. **ANY TIME you apply coating to a sponge it will show up under x-ray. The chemical coating reacts with the imaging to show under x-ray. The higher the Kv applied to an image, the more you will see.** A true technologist will know this and understand the proper levels of Kv to apply to an image. They are taught these concepts in school.

Hospitals (and some other facilities) absolutely require all positioning aids meet sanitary guidelines. In order to meet this standard, there are typically three types of positioning sponges that a hospital (or any place determined by regulations) can order:

First are coated sponges. These are standard sponges coated with a protective chemical surface. The chemical surface preserves the pliability (flexibility) of the sponge but creates a non-porous surface. These can be wiped clean and are sanitary to use repeatedly. However, the outer coating is simply a chemical film. Under enough pressure or certain types of impact, the coating can rip and tear.

Second are vinyl covered bolsters. These are firm foam shapes covered with a heavy duty, vinyl material. These positioners are extremely durable with a cleanable, non-porous surface (think like a boat seat). Techno-Aide currently offers completely sealed seams on our bolsters. Other manufacturers use "hook & loop" connections to close the vinyl over the foam. Though this will seal over the foam, it is not 100% sanitary like our bolsters are. The hook & loop is not a sealed edge and liquid can absorb into the foam. The vinyl will also show seams under imaging. As I explained before, it all depends on the type of imaging as to the need for this type of product.

Finally, closed cell sponges. These are relatively newer on the market. However, they are currently the top recommended type of imaging sponge. These positioners are made from a low density, non-porous, highly durable foam. Think like a high-quality pool noodle that won't absorb any water. The density of the foam is so high that no coating is required to be non-porous and durable! **These sponges are 100% radiolucent and will not show up under x-ray!** These sponges come in a charcoal grey color and will stay artifact free even with normal wear and tear. Field of view is not a concern due to their radiolucent properties.

Stealth Sponges – Stealth Core and Stealth Coat

The terms "Stealth-Core" or "Stealth-Coat" are trademarks of Techno-Aide for a specific style of sponge design. Techno-Aide developed and patented a way to make nearly any sponge design artifact free by applying proprietary angles to the design of the sponge. We take a design like a square and "flare" the sides to a patented angle to greatly reduce artifacts. It is important to note, proper application of any sponge will determine the chance for artifacts. Sponges are typically designed for specific procedures and failure to adhere to these purposes will typically result in artifacts and unacceptable images.

Stealth-Core - A typical (let's say a square sponge) is considered "core foam." This is where the "core" in Stealth-Core comes from. A Stealth-Core sponge is a non-coated piece of sponge that we have applied patented angles to the design to eliminate artifacts.

Stealth-Coat – We take a coated sponge design and apply our patented angles to it. This ensures that the sponge is artifact free. As mentioned before, if coating is applied to a sponge it will show under imaging. However, a sponge can show and not be considered an artifact, as I described before. Our design ensures the sponge does not show artifacts.

Website verbiage regarding a traditional sponge vs a "Stealth" sponge

"Traditional sponges are NOT our Stealth cut sponges. These sponges have the same medical grade coating applied as our Stealth Cote Coated sponges, but do not have angles applied to them, leaving a smaller footprint. Because the angles are not applied, we cannot document that they are artifact free. Our Stealth line of sponges have a unique angle applied to the sponge edges so that when coated with our proprietary mixed medical grade coating, the chance of artifacts is greatly reduced."