



# BUILD A FARADAY ENCLOSURE USING TITANRF™ FARADAY FABRIC

To ensure maximum success with your RF/EMF/signal blocking project, make sure your expectation is understood and met. For example, EMF reduction is very different than complete signal blockage. Every signal environment is different, and the methods of accomplishing your goals may vary based on the environment and your desired result. To reduce EMF, you may simply need to cover a few walls or your router with TitanRF Faraday Fabric. To completely eliminate Wi-Fi, however, may require construction of a full faraday cage with 100% conductive surfaces and zero penetrations. These are vastly different projects with different challenges. Placing a sheet of faraday fabric on top of a router cannot completely eliminate RF signals. Covering the router COMPLETELY with two layers of fabric (with no cables protruding) CAN eliminate all Wi-Fi. **You must understand what you're looking to accomplish to achieve the right result.** If you are not clear on what you are trying to accomplish, feel free to contact us to discuss your project.

## DO-IT-YOURSELF ENCLOSURES AND PROJECTS

TitanRF Faraday Fabric can be easily cut, sewn, or taped to surfaces for creating DIY RF shielding projects. TitanRF Faraday Tape is a high-shielding conductive adhesive tape used to connect sheets of TitanRF Faraday Fabric, as well as, seal or repair faraday cages and other RF enclosures. Use the materials together for projects such as making custom faraday bags and cages, EMI/EMR reduction, building an isolated environment, and more.

- 1» For radiation reduction, simply placing the fabric over the object may reduce direct radiation, but it WILL NOT completely eliminate signals. Radiation reduction can be accomplished with one layer of fabric but testing with your phone will not show it (as Wi-Fi, cell aren't blocked). A TriField meter can show radiation reduction (though testing with TriField meters can be inconsistent due to the nature of signal environments).
- 2» For higher reduction or complete blocking of signals/radiation, you must COMPLETELY cover the device. Even the tiniest hole can leak signal.
- 3» Blocking high strength signals like Wi-Fi may require two or even three layers of fabric on ALL SIDES. Blocking low MHz signals like some access cards or two-way radios may require three or four layers of fabric on ALL SIDES. Two-way radios are VERY high powered and low frequency. To block their signal, use three layers and completely wrap one radio, then move 30 feet away with the other radio (up close at point blank range may go through). If radios receive signal very close to each other, this DOES NOT mean the fabric isn't rated for high altitude EMPs. Our fabric is SUCCESSFULLY tested to MIL-STD-188-125 HEMP resistance by an accredited lab (test report available). This means it works for EMP protection using the same tests that the US military uses!
- 4» If lining a box, cover completely edge to edge, and use conductive gaskets. Conductive gaskets are compressible foam with faraday fabric that allow surfaces like doors to squish together when closing repeatedly. Conductive gaskets can be purchased on the MOS Equipment website.
- 5» Resealable entries on a bag or flexible enclosure should fold over TWICE to create a signal-proof seal. Some bags and enclosures on the market fold once. This doesn't provide a military-grade closure and cannot be trusted. All MOS Equipment Wi-Fi/cell blocking bags include a double roll.
- 6» To connect multiple sheets of fabric, sew together or use TitanRF Faraday Tape. To connect multiple sheets, place the fabric panels together and overlap at least one inch. Adhere the tape to the FRONT AND BACK SIDES to ensure signal cannot penetrate the joined panels. The tape is extremely strong and cannot be removed easily once in place (may damage the fabric if removed).

## CONSTRUCTION PROJECTS, SIGNAL PROOF ROOMS, AND TENTS

- 1» For complete signal blockage, use two layers of fabric on the floor, ceiling, and walls, ensuring that the material covers all corners and surfaces. To block Wi-Fi, cell, and Bluetooth ALL surfaces must be covered. It is not sufficient to cover one wall and expect Wi-Fi to be blocked.
- 2» Make sure all panels of TitanRF Faraday Fabric overlap one inch to maintain conductivity. Use TitanRF Faraday Tape to cover the front and backside of seams.
- 3» Use TitanRF Faraday Tape to hang the fabric in place or easily connect multiple sheets.
- 4» If placing fabric between drywall or lining walls, make sure to cover any punctures or screw holes with TitanRF Faraday Tape or TitanRF Faraday Patches, to maintain conductivity. Nails, screws, or puncture holes should be used sparingly.
- 5» Fabric can be glued to surfaces (or the primary fabric layer) with a general construction adhesive such as 3M spray adhesive. Only apply a thin layer and avoid using heavy adhesive.
- 6» For inhabitable faraday rooms or tents, you may need to incorporate additional components such as EMI/RFI shielded vents, windows, filters, etc., as well as a signal proof resealable doorway with conductive seals. Check the MOS Equipment website for these materials.
- 7» To make doors conductive, cover all surfaces with at least two layers of fabric and use TitanRF Faraday Foam Gaskets to allow compression around the perimeter of the door when it's closed.
- 8» Shielded vents, such as the Mission Darkness Shielded Honeycomb Air Vents, are required in order to allow the free-flow of air into a shielded room for ventilation and to prevent electromagnetic interference from entering the room.

## COMPLETE YOUR ENCLOSURE WITH ADDITIONAL FARADAY SUPPLIES

Mission Darkness offers a growing collection of TitanRF faraday supplies and accessories for building shielded enclosures. The comprehensive collection allows you to use the supplies together to maintain conductivity throughout your project. Most items are available in different sizes to fit your need.

View all faraday supplies at [www.mosequipment.com/collections/faraday-supplies](http://www.mosequipment.com/collections/faraday-supplies).



FARADAY FABRIC & PANELS



FARADAY TAPES



FARADAY PATCHES



SHIELDED VENTS & FILTERS



FARADAY FOAM GASKETS