

## CENTER STAGE LOAD RATINGS AND WHAT DESIGNERS SHOULD KNOW

by Chad Parrish

When you're choosing a new portable staging system for your auditorium or performance space, there are a variety of things to consider: stability, strength, flexibility, and safety, to name a few. But one of the most important considerations that people forget to ask about involves the different types of load ratings. There are three main load ratings to consider: the standard uniform load, the point load, and the dynamic live load.

### Standard Uniform Load

The standard uniform load rating is a measure of how much weight a portable stage has been rated to support safely, if the weight were equally distributed across the span. This specification is typically in pounds per square foot. For example, a portable stage that measures 10 feet by 10 feet, with a uniform load rating of 125 pounds per square foot, may safely support 12,500 pounds of weight (10ft x 10ft x 125 pounds) evenly distributed across the stage. The higher the standard uniform load rating, the more weight a stage will safely support. Most building codes require that portable stages support a minimum of 125 pounds per square foot, but—depending on the number of people and equipment on stage—you may need more than that. Portable stage manufacturers will often have several different designs that offer additional legs, beams, or other support structure to increase the load rating. When deciding on a portable stage, make sure that the load rating is high enough for all of the people and equipment you plan to have on stage at any given time.

### Point Load

The point load rating for a portable stage lets you know how much weight you can place on a single point without leaving a permanent mark or dent in the stage surface. This information is important in the case where you may want to set a grand piano or really heavy prop on the stage. Manufacturers will often give this specification as a weight applied by a pin or a caster, for example: 1500lb applied via 1 inch diameter pin. What this formula means for

that stage surface is if you set 1500 pounds on a 1 inch diameter pin, it will not leave a permanent mark or dent in the stage surface. It is important to consider this number when looking at portable stages even if you do not intend on placing a grand piano on stage; a higher point load rating will mean a more durable surface that may better resist damage, such as in the case of an accidentally-dropped hammer. But there's another load rating many people don't think about. And it's not often included in the manufacturer's information.

### Dynamic Live Load

The standard uniform load rating is often static, but a group of high school students performing during a concert is never static. That is why it is important to consider the dynamic live load rating. The dynamic live load rating is the amount of lateral force a portable stage has been tested to safely support while supporting the maximum uniform load. For example, a 10 foot by 10 foot portable stage that has a standard uniform load rating of 125 pounds per square foot and a 15% dynamic live load rating, the side load is calculated as 15% of the total uniform live load, or 1875 pounds. (10ft x 10ft x 125 pounds x 0.15) The higher the dynamic live load rating, the greater amount of lateral force the stage can safely support without bending or collapsing.

### Ask the Right Questions

The bottom line is this: after you've considered everything you need in a staging system, ask about the load ratings and make sure you know that you have a sturdy, safe, reliable staging system that will last you for years to come. The load ratings should be a part of your criteria.

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