



## Reduced Stopping Distance (RSD) and Aftermarket Friction Questions & Answers

### 1. Why should I care about RSD?

In 2011, the National Highway Traffic Safety Administration (NHTSA) mandated a 30% reduction in stopping distance for over-the-road heavy trucks with the goal of improving highway safety, avoiding highway fatalities, and reducing the number of rear-end collisions.

### 2. How do I know if I have a Reduced Stopping Distance (RSD) vehicle?

RSD covers all Class 8 tractors post 2013.

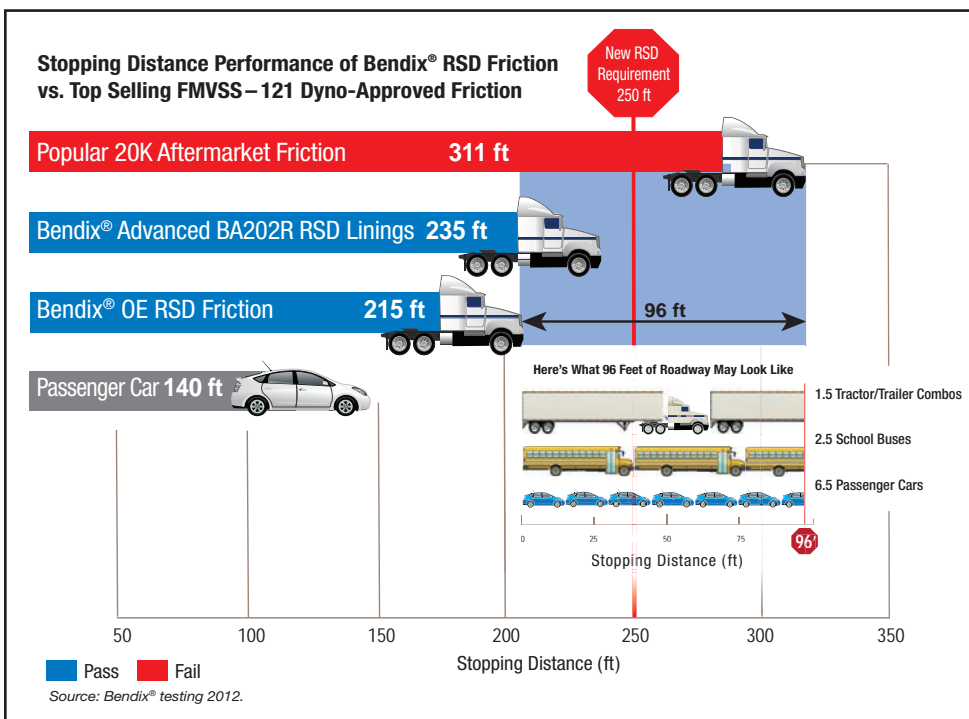
## Does Your Tractor Have RSD Brakes?

RSD		Non-RSD
Yes	Probably... Depending on Configuration	No
All tractor combinations starting 8/1/13	6 x 4 tractors below 59,000 GVWR, built since 8/1/2011	All tractor combinations built before 8/1/2011

### 3. Is there any regulation that mandates RSD after service? If not, why would I choose to?

*Although there is currently no legal requirement to maintain RSD compliance, your choice of aftermarket friction can have a significant impact on your vehicle's stopping distance, performance and safety.*

If you reline with non-compliant friction (friction material that is not RSD-certified), you may not maintain the stopping distance performance your vehicle is capable of. Review this chart to see how friction selection impacts stopping distance.



According to Federal Motor Carrier Safety Administration (FMCSA) 393.40, "Required brake systems (b) (2), air brake systems, buses, trucks and truck-tractors equipped with air brake systems and manufactured on or after March 1, 1975, and trailers manufactured on or after January 1, 1975, must, at a minimum, **have a service brake system that meets the requirements of FMVSS-121 in effect on the date of manufacture.**"

#### 4. Can my friction choice impact my collision mitigation system (CMS)?

Yes. Choosing inappropriate friction may reduce the effectiveness or functionality of the collision mitigation system by increasing stopping distance. In particular, if you use a non-RSD certified friction on an RSD-equipped vehicle, it may increase stopping distance. Proper friction selection can help mitigate, or potentially lessen the severity of a crash. Consider the potential implications of your friction choice:

- Loss of vehicle, and/or driver
- Associated downtime cost
- Cargo damage/replacement
- CSA score
- Insurance cost
- Cost of possible litigation

#### 5. Are all linings required to be RSD?

If your vehicle was manufactured with RSD brakes (refer to Question #2), based upon FMCSA 393.40(b)(2), the best choice is to replace friction “like for like” which means relining with the same friction your truck was equipped with at the time of manufacture. If OE friction is not a viable option, there are RSD-compliant aftermarket friction options available.

#### 6. What is the difference between OEM RSD-certified and AM RSD-compliant friction?

OEM RSD-certified friction is qualified by the OE manufacturer to meet and/or exceed FMVSS-121 requirements. Most of the OEMs exceed the RSD requirement for stopping distance by as much as 10%. Aftermarket RSD compliance may meet the Technology Maintenance Council (TMC) RP628 conditions for RSD; however, depending on the level of testing, it may not actually meet the RSD stopping distance of 250 feet. A vehicle test provides a much more accurate indication of actual performance than dynamometer testing alone. Bendix® Aftermarket RSD-compliant friction has undergone vehicle testing to verify performance.

Be sure to ask your friction supplier if their RSD certification process includes actual vehicle testing.

Bendix® RSD Friction Codes*	
Steer Axle	Drive Axle
BX950™	ES420™
BX920™	BX415™
BX380™	ES1180™
BA202R™	BA202R™
BA202R™	BA232R™

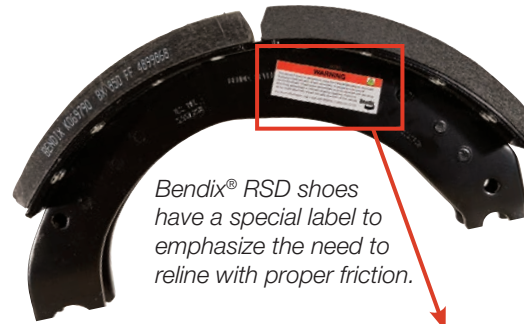
\*The appropriate friction varies by application. To ensure that your vehicle maintains RSD compliance, when servicing your vehicle, Bendix recommends replacing brake assemblies with like lining and shoe assemblies.

#### How Does Your Brake Shoe Rate?

RSD Certification	Bendix®		Other Options	
	OEM RSD Certification	Bendix AM RSD	Claims to Meet RSD	Non-RSD
Meets Torque Requirement (Dyno Tested)	✓	✓	✓	✗
Vehicle Tested	✓	✓	✗	✗
Meets 250 ft. Stopping Distance Requirement	✓	✓	?	✗
Meets OEM Requirement	✓	✗	✗	✗

**7. Are there any specific markings on a drum brake shoe that identify it as being RSD (i.e. friction edge code, tag, etc.)?**

Unfortunately, there is no industry standard for a visual identifier for RSD shoes. Bendix provides two visual identifiers to help with this process. Bendix® RSD shoes feature a warning label to encourage technicians to replace RSD shoes with another RSD shoe (see Figure 1). In addition, the Bendix edge code includes an RSD friction identifier. (See Figure 2 & table on page 2).



*Bendix® RSD shoes have a special label to emphasize the need to reline with proper friction.*

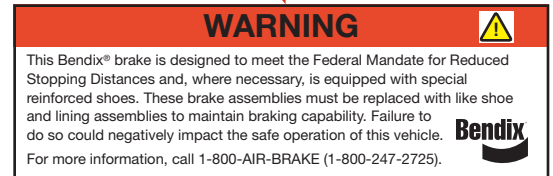


Figure 1



*Bendix® BA202R™ Friction is on the list of Bendix® RSD friction options. See chart on page 2.*

Figure 2

**8. Which FMSI combinations fall outside the requirements of RSD?**

The older FMSIs (1308, 1443, 4524, 4311, 4515) were common prior to the RSD Mandate. While they are still in the marketplace, they are not commonly associated with RSD applications. Consult your brake manufacturer to be certain you are selecting the proper FMSI for your application and RSD needs.

**9. Should I have RSD friction on both the tractor and trailer?**

Trailers are outside the scope of RSD, so fleets are free to choose friction that maintains FMVSS-121 compliance. Some fleets may look to utilize common frictions at all wheel-ends; however, Bendix recommends that you consult your brake manufacturer.

**10. If torque is what's needed to meet RSD requirements, can I simply run higher rated GAWR?**

Use of a higher rated friction (i.e. 23K material in place of original 20K rated friction) will not guarantee a reduction in your stopping distance to the mandated 250 feet. There are multiple factors that contribute towards overall brake performance.

If you have additional questions about RSD and friction selection, please call our Tech Team at 1-800-AIR-BRAKE (1-800-247-2725).

