## **CHOOSING THE RIGHT GUITAR CABLES**

A guitar cable is the primary cable connecting an electric guitar's output to its amplifier's input or to the input on the first effect pedal in the musician's pedalboard. Guitar cables are also used to hook basses to bass amps and keyboards to mixers. The broad category for these types of cables is "instrument".

Guitar cables are constructed using single-conductor audio cable (also called coax) with an overall shield, terminated in 1/4" phone plugs.

This chapter provides a really quick way to select your next guitar cable, plus it provides lots of information for those of you who want to know more about how your equipment should be connected.

#### The Benchmark

It is really difficult to buy a really flexible, really reliable, really rugged, really quiet, really great-sounding, really good looking 10' guitar cable for under 20 bucks.

# The guitar cable situation

There is a wide variety of guitar cables because there is a wide variety of guitarists. It is almost impossible to get two guitarists to agree on what a truly great "sound" is. Even if they did, one of them would change his/her mind by midnight.

In any case, to keep pace with the needs of this wide variety of players, we build eight different guitar cables in a wide variety of lengths, each with different standards for reliability, shielding, sonic quality, flexibility, appearance and price.

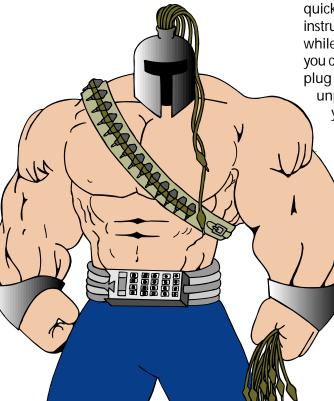
The primary guitar cable is the most abused on stage (besides the lead singer's microphone cable). Therefore, it must be built to withstand extreme trauma during performance. Also, in acts where appearance is critical, it also has to look like a million bucks.

Although the patch cables used between the effect pedals and between the last effect and the amplifier (or pre amp) need to sound good and be very quiet, the stress on them is not as severe as the stress on the primary cable. Light duty patch cables can be used here without much fear of failure. (Wait a minute.

This is not a license to go out and buy cheap molded cables for your equipment).

Because of the placement of the output jack on some guitars, a right angle plug may be needed, especially

"One of my problems is when the musician stomps his/her boot heel into the cable 500 times an hour on stage."



#### The Quick Way

(for those of you with only 30 seconds to spend on this purchase decision)

#### Ask yourself:

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Do I only want an inexpensive 10' guitar cable?
If so, your base price is\$5.00
Do I want it to be reliable?
If so, add five bucks\$10.00
Do I want it to be quiet, with no hum or buzz?
If so, add five bucks\$15.00
Do I want it to be flexible?
If so, add five bucks\$20.00
Do I want it to sound good?
If so, add five bucks\$25.00
Do I want it to look great?
If so, add five bucks\$30.00
Do I want it to last forever and be guaranteed,
regardless of cause, event abuse?
If so, double the price\$60.00
•

if your output is on the face of your guitar. Not all dealers carry right angle-equipped cables so you may have to special order one if you need it.

Also, for those of you who want to change from one instrument to

another quickly on stage, Pro Co builds two "silent plug" equipped cables, each with a mechanical switch on one end that allows quick on-stage transfer from one instrument to another instrument, while preventing "popping" as you change. (The tip on a regular plug hits ground as you plug and unplug without turning down your amplifier, and this makes an irritating pop.)

# The real world problems with guitar cables

Guitar cables have all sorts of potential problems. They are noisy. They are stiff and do not lie flat on stage (this alone is a huge irritant to players). Many guitar cables are unreliable and/or intermittent. One of the biggest problems is when the musician stomps his/her boot heel into the cable 500 times an hour on stage. Cables literally get destroyed through use.

Then, when the gig or rehearsal is over, cables get wadded up and stuck in the back of the guitar amplifier because they will not fit in the guitar case.

There are ways to wind cables so they stay nice and round. The 55 people on earth who do this correctly have cables that will last a lifetime. This section is for the rest of you.

It is really difficult to buy a really flexible, really reliable, really rugged, really quiet, really great-sounding, really good looking 10' guitar cable for under 20 bucks.

#### The solutions

Here are the three most important rules governing guitar cables:

Rule One for guitar cables is, "Buy the shortest cable you can live with".

Rule Two for guitar cables is, "If it doesn't have a copper tip on the connectors, don't buy it."



That's because the only 1/4" plugs we believe in are Show Savers<sup>™</sup> brand, 100% made in America by G & H Industries in Centerville, Michigan. These are the best plugs made for musical instrument cables on the planet and are the only 1/4" plugs we will use for our guitar cables.

Rule Three for guitar cables is to "find a cable that is as flexible and tangle-free as you need for your

performance". The wire in your cable must be flexible and sturdy. "Thin" is generally not as reliable as "thick" cable, and thin is generally not as flexible as thick (yet, "thick" can also hide a multitude of "cheap").

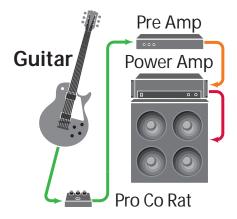
The things that matter most in guitar cable construction are strength, flexibility, sonics, shielding and appearance.

Strength in a guitar cable's wire is derived from the size (gauge) of the center conductor, the type and percentage of coverage of shield, the thickness and material making up the jacket and in the case of Pro Co's Guardian brand of cables, Kevlar-inthe-core, to prevent cable stretching and breaking — forever.

Flexibility in a wire is accomplished with the type of shield and its lay (pattern), flexible jacket compounds help, cable geometry helps (the way



**Bass Guitar** 



#### Let's talk technical about guitar cables

There is a natural roll-off of high frequencies (they get "quieter") in any high impedance cable that is caused by cable capacitance.

This is also enabled by guitar pickups which have a very high output impedance. (There are active guitar pickups available, with line level outputs which correct this problem.)

Depending on you ears, you will begin to notice this roll-off around 20' to 25'. This may or may not irritate you. If it does, use a shorter cable.

Capacitance is measured in picofarads per foot (pf/ft) and should be in the mid 20's to high 30's for a satisfactory guitar cable. Over 40 pf/ft., the high end drops quicker. Under 20 pf/ft. the high end is great, but the cable becomes extremely microphonic (mechanically noisy) as you move around on stage.

Many cheap guitar plugs use steel center conductors for strength. Steel is a poor conductor for audio and can set up a magnetic field, which severely distorts the sound that goes through it.

We use only G & H Industries Show Saver brand plugs in all our guitar cables. Their center conductors are 12 gauge oxygen-free copper — the best practical conductor for audio cable.

One of our competitors talks about how their cable improves your sound. We don't believe that for a minute, but even if a passive component like a cable could change your sound (oh, they change it all right by designing a capacitor into the wire, which does as much bad as good), we think cables should take what came in one end and deliver it to the other end with no change. If you want a different sound, that's why the Gods of the audio industry made tone controls, equalizers and processing equipment. We believe in making all attempts to send signals to your equipment, unaltered, from one component to another — flawlessly.

## **CHOOSING THE RIGHT GUITAR CABLES**

it all fits together), the thickness of the outer jacket (the bigger the better) and the number of strands in the center conductor. With good plugs and good wire and good soldering and a good mechanical strain relief, we generally get a good cable.

Appearance is in the eye of the beholder and the need for an attractive, or flat-out exotic cable depends on personal preference and the visual aspects of the performance. We think cables should at least look like they were worth what you paid for them.

Guitar cables carry minuscule signals that must be kept away from noisy light dimmers and audio frequency interference that can jump into a cable's signal path at any time. The cable's shield helps to prevent this. Braided shields work better than spiral shields, but they tend to saw themselves in two when you stomp your boot heel into them night after night. Shielding is so important that there is an entire chapter devoted to it in this guide.

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Finally we need to talk about "sonics", how our cable sounds. A beginning guitarist who cannot yet tune his/her guitar on the fly, does not need to have a real good cable. Anything will do, as long as it works and is relatively quiet (lets in little hum, buzz or crackle).

We can now put all this together

### So, what kind of guitar cable do I need?

Pro Co Brands:

	Advanced	Defender	\$57.50	(also available with right angle plug)
		Sir Tweed	\$57.50	(also available with right angle plug)
		Black Jack	\$57.50	
	Intermediate	Excalibur	\$40.18	
		Line Cable	\$21.35	(also available with right angle plug)
		Starguard	\$20.95	(equipped with Silent Plug)
		Silent Knight	\$15.73	(equipped with Silent Plug)
	Beginner	Excellines	\$13.10	(also available with right angle plug)

so you can start making decisions about your next guitar cable purchase:

Since we said earlier that a really good 10' guitar cable is going to cost you \$20 or more and say you want to buy one for \$10, what would you want us to leave out to get the cable down from \$20 to \$10?

- We can make the cable shorter. How about 3 inches?
- We can get rid of some of the shielding and add lots of buzz.
- We can extrude a thinner jacket on the cable, reducing reliability and flexibility.
- We can put less copper in the center conductor, reducing the cable's reliability.
- We can add clay to the jacket, replacing some of the exotic compounds we have designed to improve flexibility, sound and long flex life. It will look the same, but for a lot shorter period of time.
- We can use plugs which are sturdy but change your sound.

A final thought. Warrantees and well-built products often have nothing to do with each other. Cheap cable manufacturers put "lifetime" warrantees on poorly built cables, hoping you will just throw them away as they break. Or worse yet, do not put their company's name on the wire jacket, so that, when you need to use the warranty, you cannot determine who built the product or where you got it. That does not help much when it breaks during the best solo of your life or the best take of the day. Buy the good stuff. Ten years from now, when you get bored with your cable, then throw it away and buy another Pro Co cable for the next ten years of boring absolute reliability.

To find out what really matters to you, take the following test. When you are through, add up the points you have scored then decide which cable is right for you.

## How to choose the right guitar cable for you

Circle the right fit for you

Flexibility Doesn't matter much to me	1	2	3	4	5	6	7	8	9	10	My cable must lie down flat and follow me everywhere
<b>Reliability</b> I don't abuse my cables		2	3	4	5	6	7	8	9	10	My cables must be bulletproof. I stomp on it with my boot heel 500 times an hour
Sonics I can't hear the difference		2	3	4	5	6	7	8	9	10	l want to hear the natural sound of my guitar, with no change in tone from my cables
<b>Shielding</b> A little noise is OK with me		2	3	4	5	6	7	8	9	10	l want a dead quiet rig — no noise, just my music
<b>Appearance</b> All I want is a sturdy cable that works	1	2	3	4	5	6	7	8	9	10	A professional, even flashy look is important to my show
Attributes Add up your points below											
Flexibility											
Reliability											
Sonics											
Shielding											
Appearance											
Total Points =											
Suppose your points are dollars. Which cable is best for your use?											
Pro Co's Instrument Cables											
			10′ I	MSF	Rb						10' MSRP
Black Jack			\$	57.5	50	L	ifeli	nes			
Defender \$57.50						S	tar	Gua	ırds		
Sir Tweed \$57.50						S	Silent Knight \$15.23				
Excalibur \$40.18						E	Excellines \$13.10				