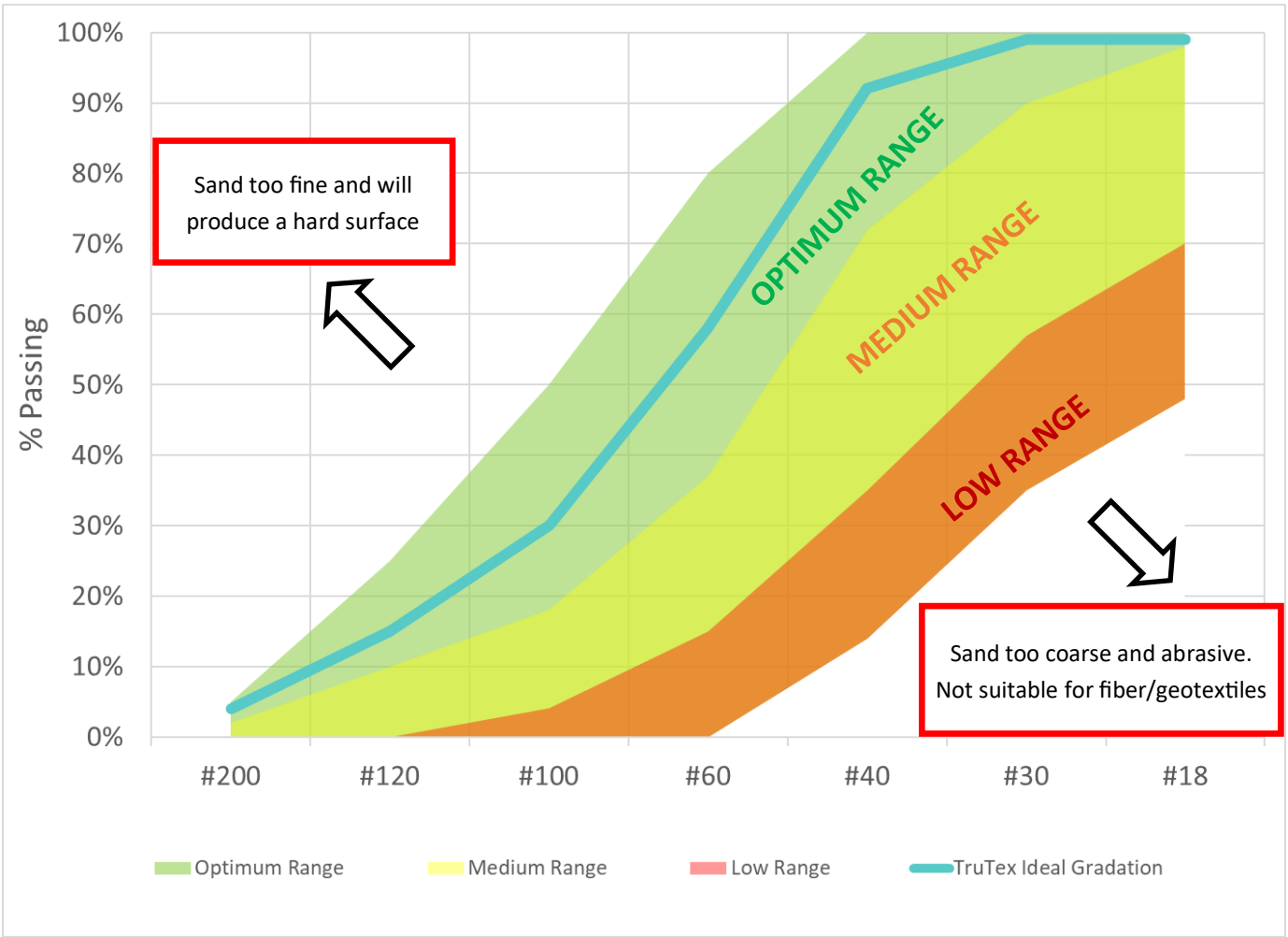
TruTex Sand Data - Guide for sourcing new sand

TruTex offers a range of footing products designed to enhance sands that can often be sourced from a local sand supplier or will work with your existing arena sand.

Not all sands will perform the same way - when purchasing a new sand, the most important factor is the **particle gradation**. You should aim to get as close to the optimum range as possible, to get the best end result with your footing. (See graph & chart below)

Particle shape is the second most important factor. **Sub-angular** grain shapes work best.



Sieve Size [ASTM / US]	#200	#120	#100	#60	#40	#30	#18
Sieve Size [mm]	0.075	0.125	0.150	0.250	0.425	0.600	1.000
Optimum Range	2 - 5%	5 - 25%	18 - 50%	37 - 80%	72 - 100%	90 - 100%	98 - 100%
Medium Range	0 - 2%	0 - 5%	4 - 18%	15 - 37%	35 - 72%	57 - 90%	70 - 98%
Low Range	-	-	0 - 4%	0 - 15%	14 - 35%	35 - 57%	48 - 70%

TruTex Oasis should only be used with sands in the optimum range.

TruTex Eclipse works best with sands in the optimum and medium ranges.

TruTex Element can work with sands in all three ranges.

TruTex Sand Data - Guide for sourcing new sand

WHERE TO START

When contacting your sand supplier, narrow down what you're looking for by requesting a finer, **silica** or **masonry** sand. There is no such thing as "arena sand" and sand names can vary widely from one quarry or state to the next. After narrowing their options down, it's always better to go by the sand data rather than just by the name of a sand to ensure accuracy.

Your sand provider or local quarry should be able to produce a sieve analysis or data sheet for the sands they have available. You can use their data to plot the values into the graph on the previous page yourself for comparison. The aim is to select a sand as close to the "TruTex Ideal" gradation line as possible.

UNDERSTANDING & USING THE GRAPH ON PAGE 1

The % values represent the cumulative % of sand that **passes (passing)** through each sieve mesh size and the sieve numbers represent the sizes of the sieves (with #200 being a very fine sieve and #18 being very coarse).

Some quarries will provide the **% retained**, which produces different numbers so it is important to understand which one you are looking at.

Once you have identified a potential sand(s), sending us a physical sample for confirmation of the data and particle shape is the best way to confirm accuracy as data from the quarry can sometimes be out of date.

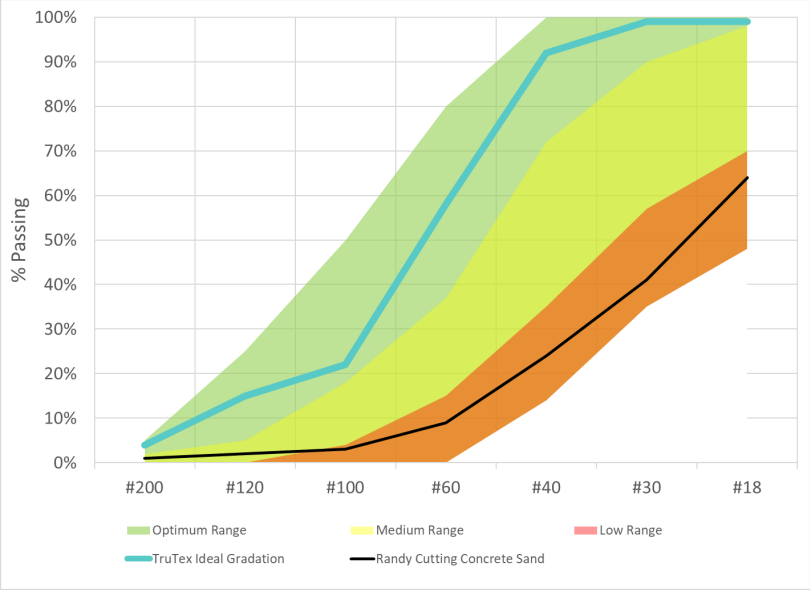
Note - Manufactured sands (such as crushed limestone) should be avoided as the footing layer as they tend to compact very easily and will break down more quickly than natural sands, thus requiring a lot of extra maintenance that could be avoided. Sands with a high silica content will be the most durable but river rock sands that meet the gradation and particle shape criteria described in this guide can also produce excellent results.

See the next page for examples of different sand gradations and how they affect the footing properties

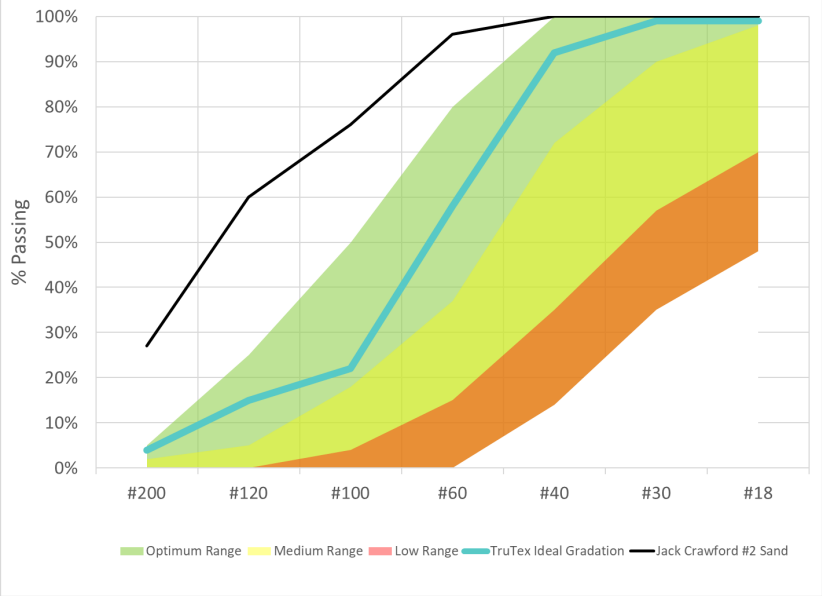
TruTex Sand Data - Guide for sourcing new sand

Examples of less ideal gradations and how they effect footing characteristics

The gradation of the sand (combined with it's particle shape) determines what properties that sand will produce as an arena footing. Sands that have a higher % of coarser particles and a lower percentage of finer particles, for example, will tend to be very loose and shifty underfoot as there is too much void space between the grains, allowing them to roll around easily. (see example below)



On the other hand, sands with too many finer particles will have a tendency to compact easily and become too firm for a daily training surface. (see example below)



TruTex Sand Data - Guide for sourcing new sand

Particle shape is the second most important for stability and then the final consideration is the mineralogy, which will effect the durability and lifespan of the sand.

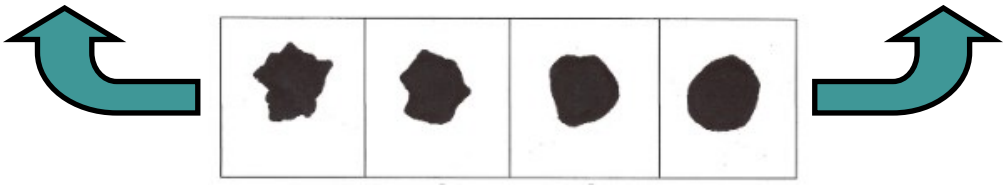
Particle Shape

Particle shape determines how well the particles will interlock with each other.

Angular sand particles will lock together very easily and will have a tendency to become overly compact and hard.

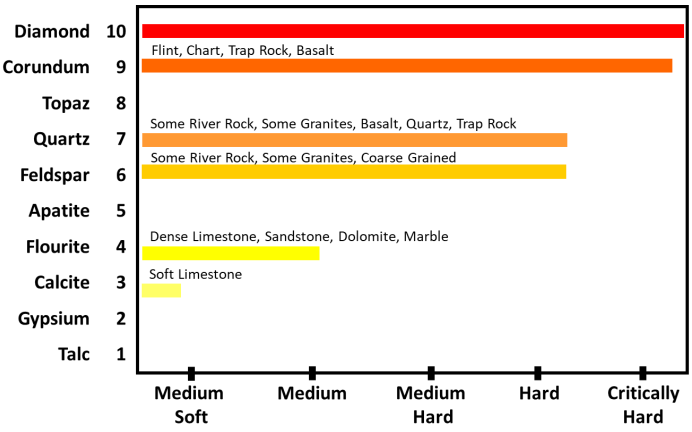
Sub-Angular to sub-rounded particles are the ideal shape for healthy performance. They will nest together well while still maintaining enough void space to provide cushion.

Rounded particles will not nest together and will roll around easily like tiny marbles. This makes the surface unstable as it shifts around too easily.



Mineralogy

Mineralogy might be a big word but really its just the technical term for the types of minerals the sand is composed of. The hardness of those minerals will dictate how durable and long lasting the sand will be.



Silica and Quartz are make very durable sands since they are particularly hard minerals, however, they are only available in certain regions of the United States and so trucking them to your arena location can get expensive. River rock sands can also produce excellent results if they meet the other criteria in this document and are often a more affordable option.