

ARENA GUIDE

12 MIN READ

Arena Sand Selection Guide

How to read sieve analysis reports, interpret proven specifications, and select sand that protects your horse and improves performance.

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A landmark study by the Animal Health Trust and University of Glasgow determined that arena footing ranks among the major risk factors for dressage horses developing lameness. The survey of over 2,500 British Dressage members found that uneven surfaces significantly elevated injury risk across all skill levels. The sand beneath your horse's hooves determines everything from soundness to competitive success.

SECTION 01

What Is Sieve Analysis

Sieve analysis is the industry-standard method for classifying sand particles by size. A sand sample is passed through a series of mesh screens — from coarse to fine — and what percentage remains on each sieve is measured. The resulting distribution directly determines how your arena performs under hoof.

Stability & Traction

Depends on how particles interlock. Uniformly-sized round particles “roll like ball bearings,” creating an unstable surface. Sub-angular particles nest together for secure footing.

Cushioning & Shock Absorption

Correlates with pore space between particles. Too-fine particles compact into hard surfaces; too-coarse particles create excessive depth. The FEI established that particle size distribution determines impact absorption.

Consistency Across Conditions

The FEI found that “unexpected conditions hidden within an otherwise excellent footing were more devastating to horse soundness than riding on a footing that was uniformly poor.”

SECTION 02

Sand Sieve Specifications

Performance Footing developed specific sieve analysis targets for both indoor and outdoor applications based on decades of arena construction experience. The key targets:

US Mesh	Opening	Target % Retained	Performance Role
Mesh 18	1.0 mm	0%	No oversized particles
Mesh 35	0.5 mm	7.40%	Coarse structural fraction
Mesh 60	0.25 mm	48.50%	Primary working fraction
Mesh 100	0.15 mm	34.00%	Secondary interlock fraction
Mesh 140	0.106 mm	7.40%	Fine transition fraction
Mesh 270	0.053 mm	1.50%	Minimal fines
Pan	< 0.053 mm	0%	Zero dust-producing fines

KEY INSIGHT

Mesh 60 and Mesh 100 together capture over 82% of material — the interlocking structure needed for year-round performance. Both specs target near-zero pan content.

SECTION 03

Sand Selection by Discipline

Different equestrian disciplines place unique demands on arena footing. Understanding these requirements ensures you select sand — and appropriate additives — that support your specific riding goals.

DRESSAGE

Optimal particles: **0.42–2.0 mm** (sieve #40 to #10). Less than 5% fines passing #200; 60–80% passing #50. Footing must provide consistent support without being too deep or shifting during lateral work. Sand that compacts too tightly impedes collected movements; sand that's too loose makes extended gaits labored. **FoamFooting™** and **Levitare™** provide the cushioning and stability that pure sand often lacks.

JUMPING

Slightly coarser sand: **0.6–3.15 mm** (sieve #30 to #6). Fines under 5%, coarse particles below 10%. Provides better grip for the powerful push-off required to clear obstacles. UC Davis research confirmed that surface consistency matters more than any single specification. **Performance Footing Fiber™** and **Levitare™** excel at shock absorption during landing.

WESTERN

Medium to coarse sand: **0.85–4.76 mm** (sieve #20 to #4). Fines ideally under 2% — dust is problematic during fast-paced work and excessive fines create surfaces that pack too hard for sliding stops. **Levitare™** has proven particularly effective for western disciplines, providing the balance of stability and controlled movement for quick turns and sliding stops.

MULTI-USE

Center sand on **Mesh 60 and Mesh 100 targets** (48.50% and 34.00%) for a versatile foundation. From there, additives fine-tune performance: **FoamFooting™** adds cushion for jumping days, while proper grooming depth adjustments accommodate different discipline requirements.

SECTION 04

Why Local Sand Rarely Meets Arena Standards

Most horse owners discover that sand available from local quarries falls short of optimal arena specifications. Regional geology determines what's available, and few areas naturally produce sand with ideal particle distribution, angularity, and mineral composition.

Excessive Compaction

Too many fine particles or angular shapes that lock together. The resulting hard surface increases concussion on horses' legs.

Poor Stability

Particles too round or uniformly sized. Surfaces shift unpredictably, undermining horse confidence and creating uneven areas.

Dust Generation

High percentage of fines. Beyond unpleasant riding, excessive dust requires frequent watering that changes footing characteristics.

Drainage Failures

Improper gradation. Too-fine particles create dense layers that hold water; too-coarse particles drain so quickly moisture management is impossible.

How Additives Transform Local Sand

FoamFooting™

Cushioning & shock absorption when local sand compacts too hard. Binds with sand particles for consistent texture. Reduces fatigue, dust, and watering requirements.

Levitare™

Bio-based elastomer that excels at moisture retention and dust control. Maintains performance regardless of weather. 12–14 year expected lifespan.

EcoStride™

USDA-certified bio-based option. Delivers excellent shock absorption while eliminating concerns about synthetic additives.

ArenaGreen™

Complete footing solution that eliminates sand selection challenges entirely. Waterless, dust-free, installs directly on arena base. No additional sand or irrigation needed.

SECTION 05

6-Step Guide to Sourcing the Right Arena Sand

1 Obtain Reference Specs

Download sand analysis specifications showing target particle distributions. Take these directly to sand suppliers — a reputable quarry should be able to provide sand formulated to meet the analysis targets.

2 Request Sieve Analysis

Contact suppliers and request their sieve analysis or gradation reports. If a quarry cannot provide sieve data, consider this a warning sign. Avoid relying on generic names like “mason sand” or “arena sand.”

3 Compare Against Specs

Match quarry analysis against targets. Focus on Mesh 60 (should approach 48.50%), Mesh 100 (should approach 34.00%), and Pan content (should be minimal to reduce dust and compaction).

4 Evaluate Particle Shape

Sub-angular sand provides optimal results — particles with sharp edges worn off so they nest while still allowing some movement. Avoid perfectly round particles (poor stability) and highly angular particles (excessive compaction).

5 Assess Mineralogy

Silica and quartz sands offer the durability high-traffic facilities require. These hard minerals resist breakdown, maintaining gradation over years of use. The small premium typically pays for itself in extended life.

6 Plan for Additives

If local sand falls short of ideal specifications — as it does in most regions — plan to incorporate appropriate additives from the start. Investing upfront delivers better results with less long-term effort.

SECTION 06

Maintaining Your Investment

Regular Grooming

Prevents uneven compaction and maintains consistent depth. Frequency depends on use intensity — competition facilities may need daily attention.

Moisture Management

Keeps footing consistent and controls dust. Additives reduce watering requirements, but monitoring moisture levels remains important.

Periodic Assessment

Walk your arena regularly, noting areas that feel different underfoot. Address variations promptly rather than allowing them to worsen.

Depth Monitoring

Ensures footing maintains its designed profile. Sand migrates over time — periodic redistribution prevents

SECTION 07

Frequently Asked Questions

What sieve size is most important for horse arena sand?

Mesh 60 (0.25mm) and Mesh 100 (0.15mm) are most critical, with specifications targeting 48.50% and 34.00% retention respectively. These mid-range particles create optimal pore space for drainage, cushioning, and stability across all disciplines.

How do I know if my arena sand needs additives?

Signs include excessive compaction (hard surface after use), poor stability (shifting or uneven footing), visible dust during work, or drainage problems. Most regionally-sourced sand benefits from additives that address these common limitations.

Is there a difference between indoor and outdoor arena sand?

The target specifications are identical. However, outdoor arenas face drainage demands from precipitation, while indoor arenas require stricter dust control. Additive selection may differ based on these environmental factors.

Can I use concrete or mason sand for my horse arena?

Mason sand is often recommended as a starting point, particularly for dressage and jumping. However, quarries sell many products under generic names. Always request the sieve analysis report to verify the sand meets equestrian specifications.

How long does properly selected arena sand last?

Quality sand with appropriate additives can perform well for 12–14 years with proper maintenance. Factors affecting lifespan include usage frequency, maintenance consistency, weather exposure, and intensity of equestrian activities.

READY TO SELECT THE RIGHT SAND?

Get a Free Sand Analysis & Custom Sand Guide

Tell us your discipline, climate zone, and facility type —
and receive a specification tuned to your needs.

[Request Your Sand Guide](#)

877-835-0878 · performancefooting.com/contact-us



877-835-0878

Scottsdale, AZ 85260

performancefooting.com