

#### www.ParkProTek.com

## **PLAYGROUND PROFICIENCY**

Mastering Community Recreational Equipment

**Rod Beber |** *Owner & Operator* Park Pro Playgrounds & ParkPro Tek

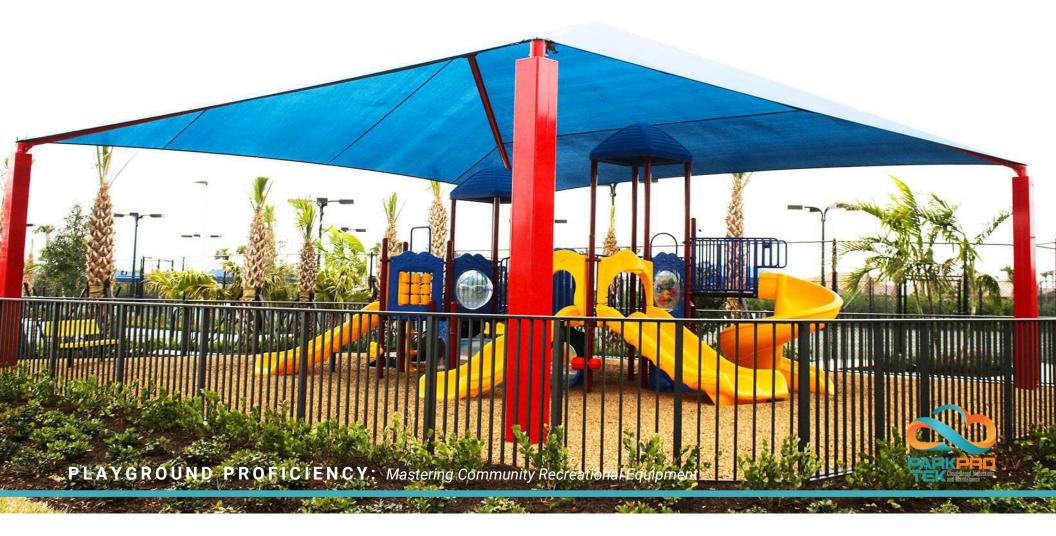


## INDEX

- Introduction
- Playgrounds: History & Background
- Safety Surfaces
- Shade Structures
- Inspection & Maintenance
- Constructing Fun
- Price Considerations



## **PLAYGROUNDS** Bringing Communities Together



## **PLAYGROUNDS** Bringing Communities Together

## **PLAYGROUNDS** *History: Danger in the Streets*

#### Urban Growth Challenges

Rapid urban growth in early 1900s Pittsburgh led to overcrowding and limited play spaces for children.



#### Safety Imperative

High child accident rates on busy streets highlighted the urgent need for safe play areas.



#### Municipal Response

Initiatives emerged to establish basic but crucial playgrounds, supported by New Deal policies in the 1930s.



#### Continued Importance

Ongoing maintenance and safety measures are essential to meet the ongoing need for safe play spaces for children.

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## **PLAYGROUNDS** Injuries Still Happen

### **Playground Accident Frequency**

- Despite nationwide safety standards and regulations, playground accidents persist.
- Emergency rooms annually treat over 200,000 children under 14 for playground injuries.

#### **Causes of Playground Accidents**

- Poorly maintained equipment poses a significant risk.
- Dangerous conditions on playgrounds contribute to injury occurrences.
- Product defects also play a role in causing serious injuries to children.



## **SAFE PLAYGROUNDS** *What Does it Take?*



## **SAFETY SURFACES** *Requirements*



#### Playground Surfaces & Equipment

 Must meet ASTM standards for CFH (Critical Fall Height) to reduce the risk of serious injury including traumatic brain injury.



## **SAFETY SURFACES** Top 5 Playground Surface Materials



## **SAFETY SURFACES** | Cost Comparison



## **SAFETY SURFACES** Surfacing Options

#### Wood Mulch



Price	$\bullet \bullet \bullet \bullet \bullet$	Low
Maintenance	••••	High
Accessibility	$\bullet \bullet \bullet \bullet \bullet$	Mid
<b>Color Options</b>	$\bullet \bullet \bullet \bullet \bullet$	None
Warranty	$\bullet \bullet \bullet \bullet \bullet$	15/25 Year

#### **Description**

- Manufactured from size-controlled softwoods and/or hardwoods that average 1" - 2" in length.
- Popular choice for budget conscious playgrounds.
- Organic nature may not be suitable for all climates.

#### Tips

- Requires ongoing maintenance and occasional topping off to maintain recommended compacted material depth.
- Use wear mats to reduce displacement.
- Containment systems will reduce spread of surfacing to non-play areas



## **SAFETY SURFACES** Surfacing Options

# **Artificial Turf**

- Polypropylene a•.
- Polyethylene
- Nylon Grass •
- Landscape Turf •
- Synthetic Grass •
- Pet Turf •



## **SAFETY SURFACES** | Surfacing Options

#### **Bonded Rubber**



#### **Description**

- Comprised of a precise combination on 100% wire free, clean recycled rubber, a polyurethane binder, and a pigmented colorant.
- Poured in place and troweled to provide a resilient, seamless appearance.

#### Tips

- Great option for accessible pathways within a loose-fill play zone.
- Use wear mats to reduce displacement.
- Schedule routine inspections and maintenance to keep high traffic areas sealed.



## **SAFETY SURFACES** | Surfacing Options

#### **Bonded Rubber**

#### SofCRETE" CROSS-SECTION OVER GRANULAR BASE



#### Wear Course

MDI Polyurethane & EPDM rubber granules 1/2 inch in thickness, mixed 22% binder to rubber ratio and installed according to manufacturers specifications.

#### Impact Attenuation Layer

MDI Polyurethane & SBR rubber buffings. 1 - 4" thickness based on fall height requirements. Mixed 12% binder to rubber ratio and installed to manufacturers specifications.

#### Sub-Base - A

Granite screenings, 1/2" depth compacted to 98% SPD with a planarity of +- 1/4" over 10' in any direction. Sub-base surface slope to be 2% or greater.

#### Sub-Base - B

Granular Packing Aggregate type A, 4-8\* depth (consult local soil engineers for required thickness) compacted to 98% SPD.









## SAFETY SURFACES

Poured in Place Surface

PLAYGROUND PROFICIENCY: Mastering Community Recreational Equipment

Surfacing Options

## **SAFETY SURFACES** | Surfacing Options

### Recycled Loose Fill Rubber Surfacing



Price	$\bullet \bullet \bullet \bullet \bullet$	Low-Mid
Maintenance	$\bullet \bullet \bullet \bullet \bullet$	High
Accessibility	$\bullet \bullet \bullet \bullet \bullet$	Low
Design	$\bullet \bullet \bullet \bullet \bullet$	Low
Longevity	$\bullet \bullet \bullet \bullet \bullet$	Low-Mid

#### **Description**

- Product is manufactured rubber chunks comprised of recycled tire rubber, with few oversized pieces.
- Most playground installation utilize 6" of loose fill rubber material.

#### Tips

- One of the highest impact attenuation ratings.
- Soft-touch, splinter free
- Mold, animal, and insect resistant
- Raking is required to maintain compliant depth.



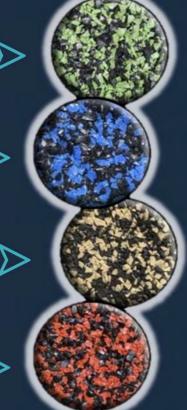
## **SAFETY SURFACES** The Standards

Standard Green & Black 🝃

Standard Blue & Black

Standard Beige & Black ≽

Standard Red & Black 🔰





## **SAFETY SURFACES** Surfacing Options

### **Interlocking Safety Tiles**

- Rubber Interlocking Safety Tiles
- Tested for all required fall height attenuation and exceed ASTM and CPSC guidelines.
- Easy to maintain mold, mildew and fade resistant.
- Aesthetically pleasing and easy to repair and maintain in high traffic areas.
- Available in various sizes and colors, including EPDM colors.

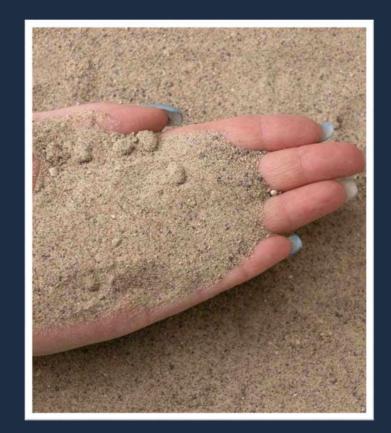




## **SAFETY SURFACES** Surfacing Options

### Sand

- Sand is a soft, tan material.
- Commonly used for:
  - Play Areas
  - Volleyball Courts
  - Artificial Beaches









### **Poured In Place Surfacing**







#### Wood Mulch







**Artificial Turf** 

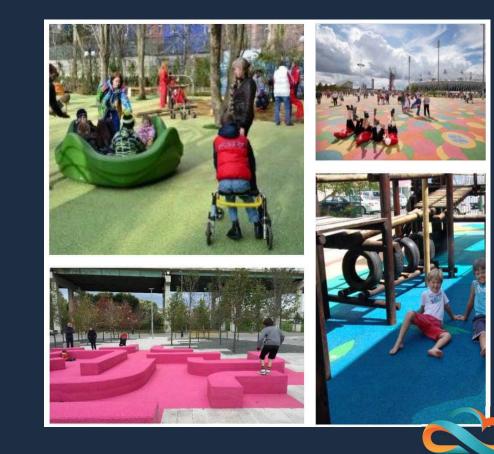






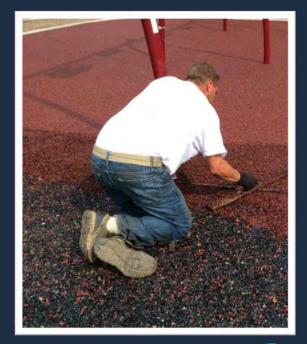
#### **Urethane Preventative Maintenance Coatings**

- Rolled or spray to cap layer.
- Performed with either aliphatic or aromatic binders.
- Recommended to use an aliphatic binder option due to ambering.
- Or consider a specialty maintenance binder option.
- Every 18-24 months after install.



**Polyurethane Binders** For Poured in Place Applications







#### **Aromatic Binders**

- Used in majority of playground surfaces
- Will amber from slight to very substantial based on the UV index for the particular time and day.
- Usually if not always less expensive that aliphatic binders.





#### **Aliphatic Binders**

- Different formulas for the weather conditions.
- Normally utilized in the top layer or "cap" layer.
- Some Aliphatic Binders do have superior tensile and elongation over aromatic binders.
- Recommended for certain colors to reduce ambering visibility.
- Recommended for aquatic spaces due to performance.





#### **Aromatic Binder**

- Most often used for playgrounds
- Will Amber
- Ambering will wear off (or Burn Back)
- Usually less expensive than aliphatic
- Can be used in attenuation layer even if aliphatic specialty binders are used for "cap" layer
- Education is KEY

#### **Aliphatic Binder**

- Will not Amber
- Usually more expensive option
- Depending on manufacturer, can possess superior tensile and elongation properties
- Should be considered to meet customer expectations – OR customer to be educated about ambering
- Formulations recommended for splash pads with chlorine



## **SHADE STRUCTURES** Fabric Shades



#### Sails

#### Integrated





## **SHADE STRUCTURES** | Fabric Material

#### **Fabrics**

#### **Commercial 95**

- FR Comshade
- Polytex
- Commercial 95
- Sunbrella
- Sola Mesh

- **Description:** Commercial 95 340 is a durable shade fabric designed for commercial and architectural use.
- Features: Made of strong HDPE fabric with a 10-year UV warranty, engineered in Australia for maximum sun protection and durability in harsh conditions.
- UV Protection: Provides up to 98% UV block for safer outdoor environments.
- Knitted Construction: Utilizes monofilament yarn and tape for stability and resistance to tears and frays.
- Heat Set: Undergoes advanced stentering process for pre-shrunk, stable material.



## **SHADE STRUCTURES** | Fabric Warranty

- 1. The structural integrity of all supplied steel is warranted for 10 years.
- 2. If assembly is provided by the Company, workmanship covering the labor for the removal, assembly, and cost of shipping will be covered for one year.
- 3. All steel surface finishes are warranted for one year.
- 4. Shadesure <sup>™</sup>, Colourshade <sup>®</sup> FR, Extreme 32 <sup>™</sup>, Commercial 95 <sup>™</sup>, SaFRshade <sup>™</sup> and Monotec 370 <sup>™</sup> fabrics all carry a 10-year limited manufacturer's warranty against failure from significant fading, deterioration, breakdown, outdoor heat, cold, or discoloration.
  - Shadesure <sup>™</sup> fabrics in Red, Yellow, Atomic Orange, Electric Purple, Zesty Lime, Cinnamon, Olive, and Mulberry carry a 5-year pro-rated warranty.
  - Fabrics attached to Coolbrella structures carry a 3-year warranty.
  - Individual fabric tops measuring greater than 40' in length are covered by a non-prorated 5-year warranty
  - Precontraint 502 <sup>™</sup> waterproof material is subject to an 8-year pro-rated warranty.



## **INSPECTION & MAINTENANCE** | Background

- 1. Playground safety transformed post-1970s, shifting from hard surfaces to safer materials.
- 2. Early playgrounds featured galvanized steel and chains, posing significant risks.
- 3. Historical accounts highlight the dangers, like a 1902 report from Boston.
- 4. Concerns for safer surfaces emerged in 1938, but solutions were lacking until later decades.
- 5. Progress was slow, with asphalt and concrete prevalent until the 1970s and 1980s.
- 6. Modern playgrounds adopted rounded edges and safer materials like artificial turf and rubber mulch.
- 7. Today, safety oversight is managed by the Consumer Product Safety Commission and American National Standards Institute.



## **INSPECTION & MAINTENANCE** | ADA Considerations



The Americans with Disabilities Act (ADA) of 1990 aimed to combat discrimination against individuals with disabilities.



The Architectural and Transportation Barriers Compliance Board set play area standards in 2000, updated in 2010.



These standards detail requirements for play components, routes, transfer systems, and surfacing to ensure inclusivity.



## **INSPECTION & MAINTENANCE** *Keeping up with Upkeep*

#### Keep it Fun

Playgrounds provide opportunities for physical activity, imaginative play, and social interaction for children.

#### Keep it Regular

Prioritizing playground safety through regular inspections and diligent upkeep is essential.

#### Keep it Safe

Maintaining playgrounds prevents accidents, injuries, and ensures safe environments.

#### **Keep it Proactive**

Proactively addressing potential hazards and adhering to maintenance schedules fosters fun and safety.











## **INSPECTION & MAINTENANCE** | ASTM International

#### Standard Consumer Safety Performance Specifications for Playground Equipment for Public Use ASTM F1487-21

**1.1** This consumer safety performance specification provides safety and performance standards for various types of public playground equipment and dimensional requirements for their clearance and use zones. Its purpose is to reduce life-threatening and debilitating injuries.

**1.2** The range of users encompassed by this consumer safety performance specification is the 5th percentile 2-year-old through the 95th percentile 12-year-old.

**1.3** Home playground equipment, toys, amusement rides, sports equipment, fitness equipment intended for users over the age of 12, public use play equipment for children 6 to 24 months, and soft contained play equipment are not included in this specification.

**1.4** Products or materials (site furnishings) that are installed outside the equipment use zone, such as benches, tables, independent shade structures, and borders used to contain protective surfacing, are not considered playground equipment and are not included in this specification.

**1.5** This specification does not address accessibility, except as it pertains to safety issues not covered in the DOJ 2010 Standard for Accessible Design.



## **INSPECTION & MAINTENANCE** ASTM International

ASTM International has developed voluntary technical manufacturing standards for public use playground equipment, surfacing, and fencing. These standards are developed to help manufacturers produce the safest equipment possible. When purchasing playground equipment and surfacing, documentation should be obtained.

The ASTM standards are required to have been met by the manufacturer, and products are required to be tested. A copy of these standards may be purchased from ASTM International by calling 877-909-2786 or visiting www.astm.org.

- F1148 Home Playground Equipment
- F1292 Surfacing
- F 355 Surfacing
- F1487 Public Use Playground Equipment
- F1816 Drawstrings on Children's Clothing
- F1918 Soft Contained Play Equipment
- F1951 Testing for ADA Compliance for Surfacing & Equipment
- F2049 Fencing
- F2088 Infant Swings
- F2075 Wood Fiber
- F2223 Standard for Surfacing
- F2373 Under 2



## **INSPECTION & MAINTENANCE** *Is it Required?*

- Regular playground inspection and maintenance not required by most agencies.
- National Program for Playground Safety reports few states have passed related legislation.
- Only 15 states have adopted guidelines on playground safety to date.
- Stringency and enforceability of guidelines vary greatly among these states.
- In some places, guidelines are suggested rather than required.
- California has the most comprehensive regulations.
- California insists all new public playgrounds conform to Consumer Product Safety Committee standards.



### **INSPECTION & MAINTENANCE** *Playground Diamond of Care*



At least 33% of playground accidents could be avoided with a planned maintenance program.



#### **CONSTRUCTING FUN** *Quality Components, Quality Play*

Superior Recreational Products (SRP) warrants that its product will be free from defects in materials and workmanship as well as maintain structural integrity for the periods listed below from the date of invoice and once SRP has been paid in full. This warranty is in effect only if the product has been assembled and installed strictly in accordance with the setup instructions provided by SRP, good construction practices, and has been subjected only to normal use and exposure.

- Lifetime\* Warranty on playground steel and recycled posts, all stainless-steel hardware, c-line fittings, and aluminum post caps
- 20-Year Limited Warranty on steel shade framework
- 15-Year Limited Warranty on playground pipes, rungs, loops and rails, roto-molded plastics, HDPE plastic sheets, punched steel decks, and recycled decks
- 10-Year Limited Warranty on shelter structures and shade fabric
- 7-Year Limited Warranty on textured polyethylene and thermoplastic coatings
- 5-Year Limited Warranty on site amenity frames, nets, and powder coat
- 3-Year Warranty on electronic play
- 1-Year Limited Warranty on moving parts, cables, and materials not covered above



## CONSTRUCTING FUN Overseas Sourced Equipment...

# **CONSTRUCTING FUN** ... They will burn







## **PLAYGROUNDS** | Las Vegas, NV







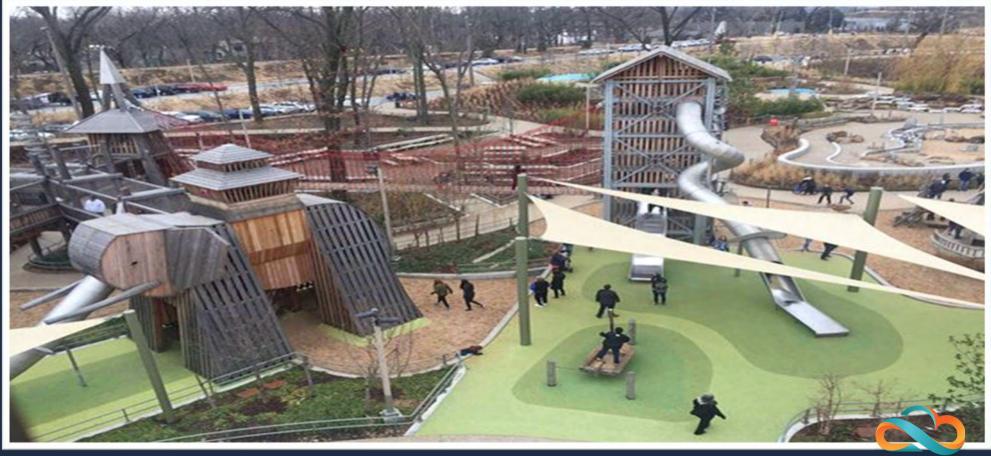
## **PLAYGROUNDS** | Spring Branch, Texas







## **PLAYGROUNDS** | Custom Built





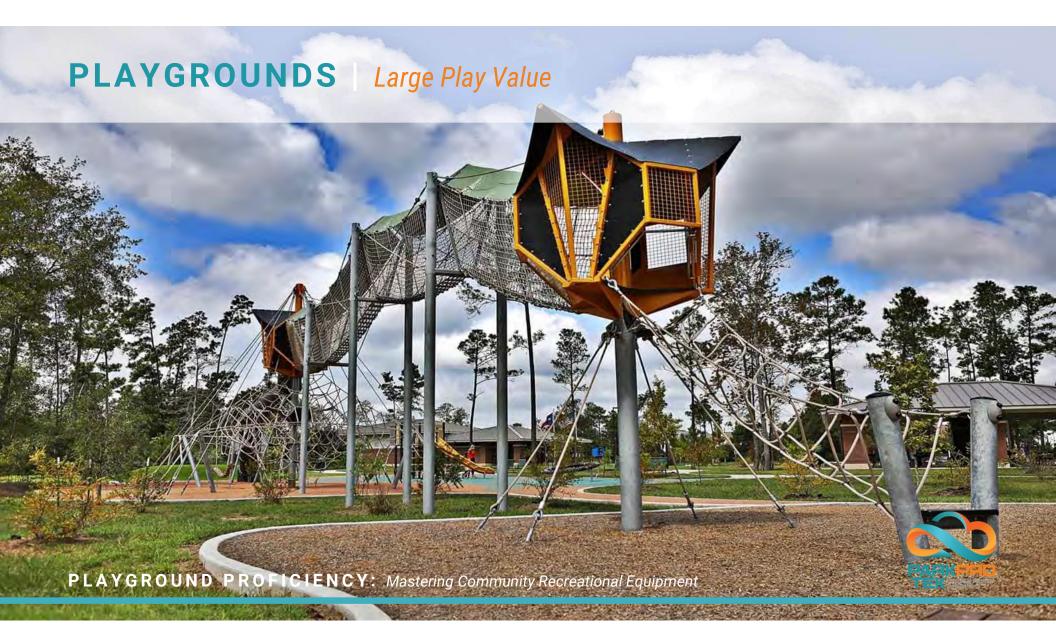
## **PLAYGROUNDS** Large Play Value











## **PLAYGROUNDS** Custom Built Large Play Value



### **PLAYGROUNDS** | Wallet Breakers



## **PLAYGROUNDS** *Physical/Deckless*



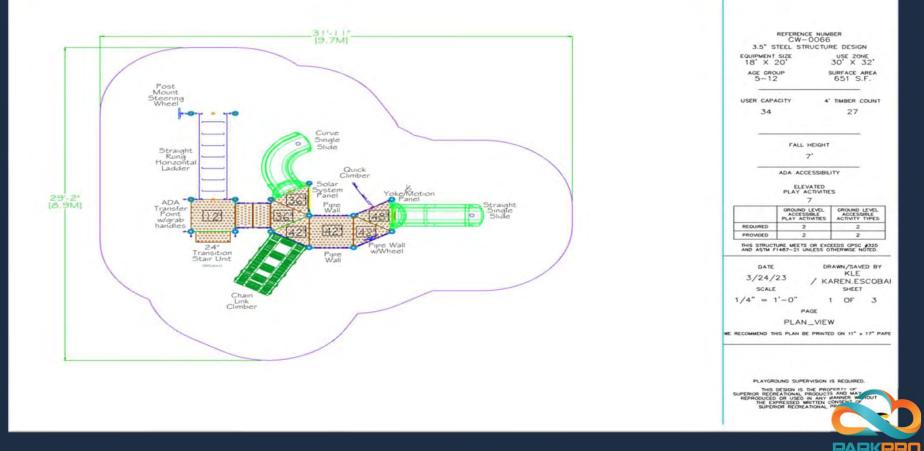


### **PLAYGROUNDS** | Rope Climber





## **CONSTRUCTING FUN** Bringing Communities Together









## **PRICE CONSIDERATIONS** Shade Installation

					Regular	Wages					
Job Name	Model	Shade Size	Columns	Rebar w/ misc @ 50 per	Conc @ \$250 per column	Dumps	Crane	Man hours	Labor costs (3 man crew)	Install cost	Install to client
Summerlin V25-Gra	nd Park (2) 2 columns	MT6X19-8.5Z-P	4	\$200.00	\$1,000.00	\$550.00		48	\$9,600.00	\$11,350.00	\$13,620.00
					Prevailing	g Wages					
				Rebar w/ misc	Conc @ \$250 per				Labor costs (3 man		
Job Name	Model	Shade Size	Columns	@ 50 per	column	Dumps	Crane	Man hours	crew)	Install cost	Install to client
	Cantilever	27'x12'	4	\$200.00	\$1,000.00	\$550.00		32	\$11,200.00	\$12,950.00	\$15,540.00
	Union Laborer (add :	10%)						3.2	\$320.00		\$15,860.00



### **PRICE CONSIDERATIONS** *Poured in Place Surfacing*

	Poured In P	Place Sur	facing			
Job Number:	2024-0110					
Job Name:	Waterfall HOA					
Square Feet	Inches Thick					
1275	2.5					
Wear Layer						
	bags of color		24 075	-	Cost	
	% Black		31.875 31.875		\$ 796.88	
	% Color			Blue	\$ 2,773.13	
0	% Color		0		\$ -	
Buffings			lbs	bags		
1275	2	2550	5100	102	\$ 2,244.00	
Binder						
Buffings	12.75			5 Gallon	\$ 1,683.00	
Color	15.9375			5 Gallon	\$ 2,103.75	
Total	28.6875			5 Gallon		
Rubber Cost					\$ 9,600.75	
Labor Cost					\$ 3,506.25	
					\$ 13,107.00	\$ 10.28
					\$ 16,383.75	\$ 12.85
Stan	dard Turn Do	wn   Stan	dard P.W	Turn-down	P.W.   +	



### **PRICE CONSIDERATIONS** *Amenities Install*

#### **Steel Surface Mount Amenities**

•	Trash Receptacles	\$165.00
•	Benches	\$215.00
•	Tables	\$265.00
•	Bike Racks	\$215.00
•	BBQ Grills	\$165.00

• Family BBQ Grills \$275.00

#### **Steel Inground Mount Amenities**

•	Trash Receptacles	\$215.00
•	Benches	\$265.00
•	Tables (2-post)	\$290.00
•	Tables (6-post)	\$340.00
•	Bike Racks	\$265.00
•	BBQ Grills	\$215.00
•	Family BBQ Grills	\$340.00

• Pet Waster Stations \$215.00



## **PRICE CONSIDERATIONS** *Heavy Amenities Install*

#### **Concrete Amenities**

- Trash Receptacles \$525.00
- Benches \$725.00
- Tables \$725.00
- BBQ Grills \$525.00

#### **Full Structures**

•

- Playground Equipment x 32% of retail pricing
- LSI Playground Equipment x 40% of retail pricing
- Water Features x 35%
  - Steel & Fabric Shades Use Shade Structure Install Calculator



## **PRICE CONSIDERATIONS** *Surfacing*

#### Surfacing

- Woodchips \$125.00 per cubic yard
- Haul off Poured in Place \$180.00 per cubic yard
- Haul off Playground Sand \$130.00 per ton
- Haul off Woodchips
- Compacted Type 2
- Concrete Slurry
- Concrete Pad

- \$130.00 per cubic yard
- \$115.00 per ton
  - \$3.75 per square foot
- \$12.00 per square foot



## PRICE CONSIDERATIONS | Extras

#### **Extras**

- Volleyball Setups \$365.00
- Tennis Setups \$365.00
- Shelter/Table Combos \$975.00
- Flagpoles \$1,975.00
- Temporary Fencing
- Windscreens
- Dumpsters
- Basketball Setups



PLAYGROUND PROFICIENCY: Mastering Community Recreational Equipment

\$10.00 per linear feet

\$3.00 per square foot

\$550.00 each

\$900.00 each



Thank you!

QUESTIONS? COMMENTS?