Welcome!

The event will begin soon.

The Base of Play

Safety, Accessibility, Sustainability & Performance in Playground Surfacing

March 31, 2026

CLARB
ADVANCING PROFESSIONAL STANDARDS IN LANDSCAPE ARCHITECTURE

PRO SERIES
COURSES BY CLARB

US Playground Surfacing
Surfacing Playgrounds Since 1986

LACES™

Tech tips

- Please mute your microphone
- This event is being recorded
- Chat enabled
- Captions

US Playground Surfacing

Surfacing Playgrounds Since 1986


PRO
SERIES
COURSES BY CLARB

The Base of Play

Safety, Accessibility, Sustainability, and Performance in Playground Surfacing

Presenters

Mark Arigoni PLA
US Built Environment Sector Lead
SLR International Corporation

Michael McGuffie CPSI
President/Owner
US Playground Surfacing

Stephanie Lapham CPSI
Recreation Manager
City of Newtown, Massachusetts

Session Description

- This course will examine the evolution of current playground surfacing safety requirements and performance standards intended to reduce injury risk, improve accessibility, and support long-term durability in public play environments.

- Presenters will review key installation design and specifications, commonly accepted surfacing systems, and maintenance considerations, and the challenges communities face in meeting universal accessibility expectations while balancing lifecycle cost and ongoing performance demands.

- Focus on real-world implementation pressures, including limited municipal budgets and ongoing maintenance demands, this session will provide practical guidance for selecting and evaluating playground surfacing solutions that support safe, inclusive, and resilient public spaces.

- Participants will also be exposed to emerging materials and product technologies that help balance safety, accessibility, sustainability, and affordability.

CLARB

Learning Objectives

- **Explain** how playground surfacing standards and specification decisions support public health, safety, and welfare by reducing injury risk and improving safe play environments.
- **Describe** general playground surfacing safety requirements, performance expectations, and applicable reference resources.
- **Assess** existing playground surfacing systems for potential hazards, durability concerns, and limitations related to universal accessibility and inclusive play.
- **Identify** key Health, Safety, and Welfare (HSW) best practices for specifying, installing, and maintaining playground surfacing systems that remain safe and accessible over time.
- **Evaluate** how emerging products and surfacing technologies may improve impact attenuation, accessibility, maintenance efficiency, sustainability, and long-term affordability.

Agenda

- The Evolution of **Playground Surfacing Standards**
- How Playground Surfacing decisions directly impact public **Health, Safety, and Welfare** of the users.
- Practical strategies for finding the best solutions that align with widely accepted and evolving safety standards and best practices.

Giant Stride ca. 1910-1915

1.

The History

Evolution of Playgrounds

… and Surfacing

19th Century (1850-1900) – Introduction of 'Sand Gardens' and playgrounds – England, Germany, US (Boston)

- *providing urban children a safe and softer area to play*

Early 20th Century (1900-1930) – The Playground Movement (PAA) Playground Association of America ca. 1906

- *Industrialization and over-crowding promoted playgrounds as tools for improving child welfare, public health, and socialization*
- *Playgrounds of this period were highly structured with designated play areas, instructors, and early equipment made of steel pipes, ladders, ropes, and chains on sand… or pavements of various types*

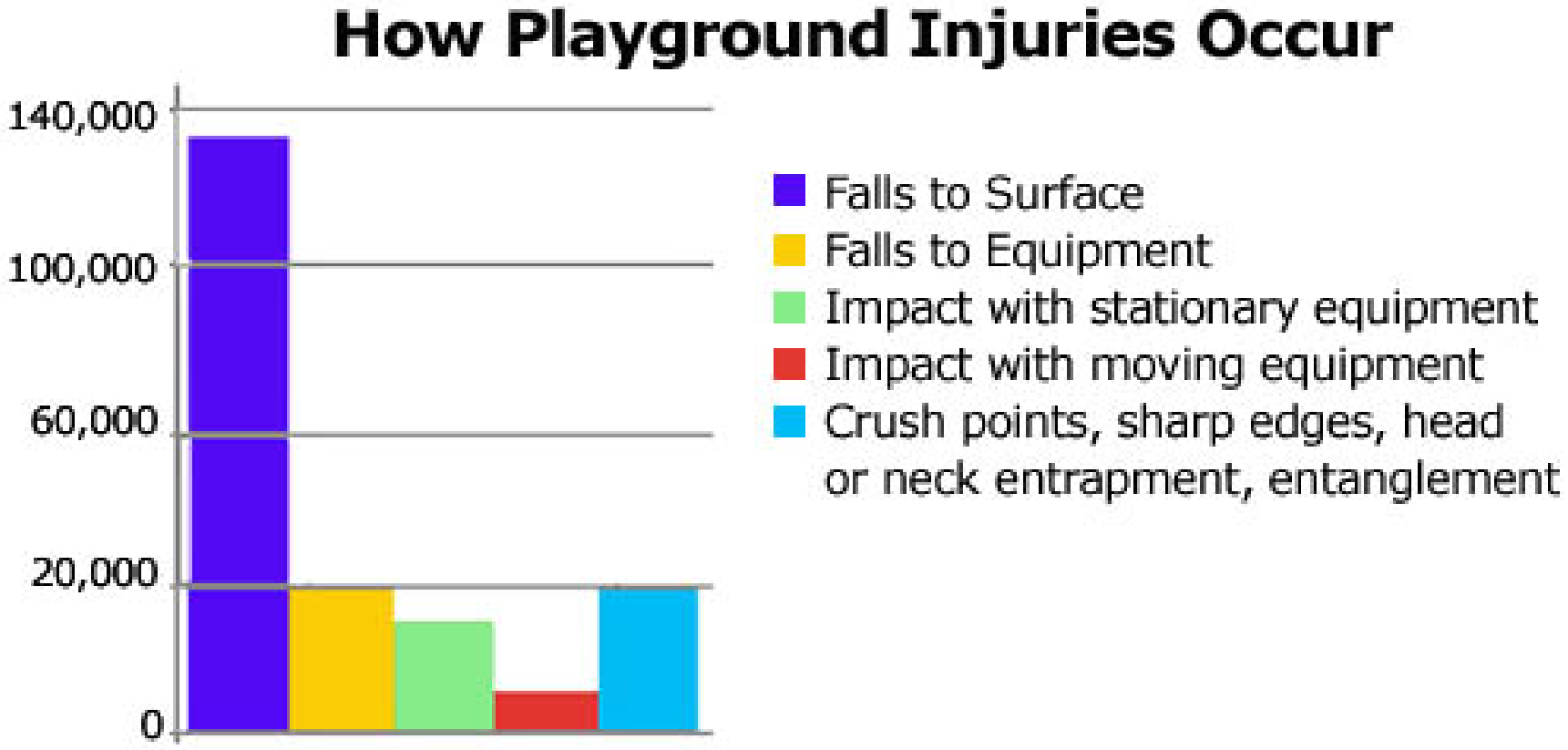
Mid 20th Century (1930-1960) – The Adventure Playground Movement – Originated in Denmark ca. 1940

- *With resources limited due to WWII and Great Depression, focus was on innovation, self directed risk, naturally available materials, and re-use of loose parts.*
- *Surfacing options remained sand, pavement, gravel and grass.*

Late 20th Century (1970-1999) – US Consumer Safety Commission (CPSC)- 1st Public Safety Playground Handbook (1981)

- *Increasing data collection on injuries led to published safety guidelines*
- *Elimination of concrete, asphalt, and hard paved surfaces, introduction of (EWF) Engineered Wood Fiber and ASTM F1292 standardized head-impact criteria for playground surfacing materials*

CLARB



70%-80% of playground related injuries are a result of falls to the surface

CLARB

Key Safety Standards: CPSC, ASTM, and ADA

CPSC Safety Guidelines (US Consumer Product Safety Commission)

CPSC sets comprehensive, periodically updated playground safety guidelines covering hazards and surface recommendations.

ASTM Standards (American Society for Testing and Materials)

ASTM provides voluntary standards focusing on materials, durability, structural integrity, and entrapment hazard prevention.

ADA Accessibility Requirements

ADA ensures playgrounds are accessible to children with disabilities through inclusive design and accessible routes.

CLARB

Regulations, Guidelines, and Standards

National Guidelines and standards provide consistent safety & accessibility frameworks in playground design and management (ADA, ASTM, CPSC)

State-Specific Regulations provide additional playground safety laws requiring compliance, inspections, and liability measures (State Access Boards, Inspection Requirements)

Local Environmental Considerations

Playground safety is influenced by local climate, material use, and maintenance practices

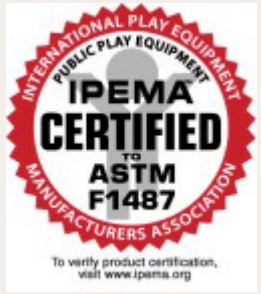
Integrated Safety Management combining national standards, state-specific rules and local considerations creates the best approach for overall playground safety, accessibility, maintenance, and long-term usability.

CLARB

Third-Party Certification

Simplifying Compliance and Liability

IPEMA INTERNATIONAL PLAY EQUIPMENT MANUFACTURERS ASSOCIATION



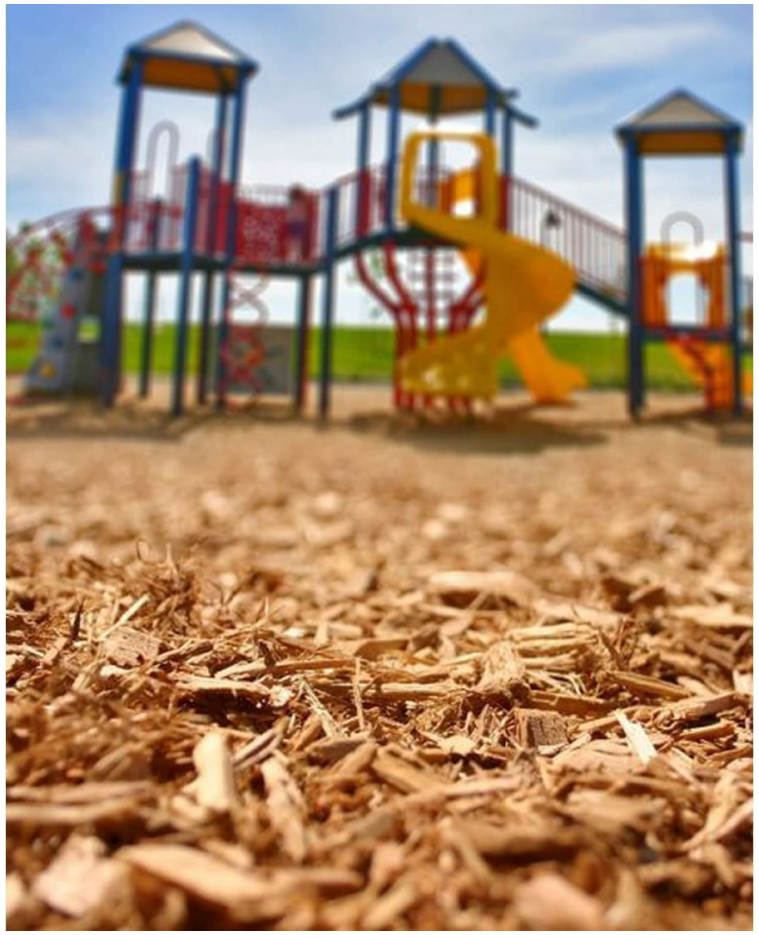
IPEMA certification verifies playground equipment meets key safety standards including CPSC and ASTM requirements reassuring **Consumer Confidence and Safety** simplifying purchasing decisions for non-experts. IPEMA certification also provides for **Industry Consistency and Risk Reduction** promoting safer designs, consistent manufacturing, and reduces injury risk across the playground industry.

CPSI Certified Playground Safety Inspector

CPSI certification is offered by the National Recreation and Park Association (NRPA) in coordination with the National Certification Board (NCB). CPSIs are certified to inspect playgrounds for safety issues, recommending improvements to ensure they meet current national industry standards developed by the American Society for Testing and Materials (ASTM) and Consumer Product Safety Commission (CPSC)

CLARB

Common Surfacing Options…on the surface

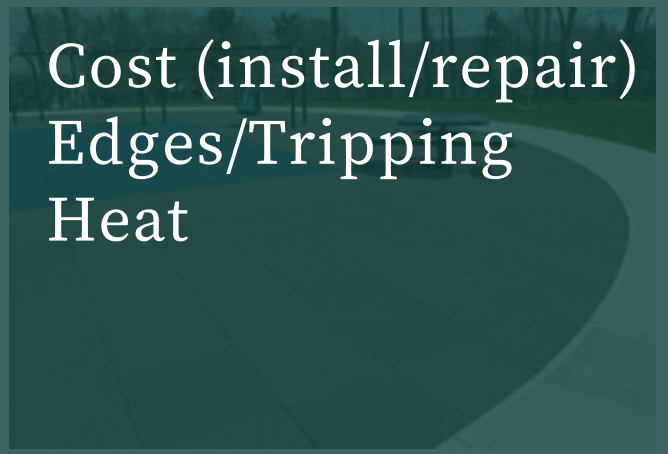


Common Surfacing Options…challenges

Annual Maintenance
Drainage Issues
Rutting
Non-Accessibility

Maintenance
Floating
Contaminants
Rutting
Non-Accessibility

Install Cost
Heat
Repair/Replace Cost
Downtime



Cost (install/repair)
Edges/Tripping
Heat

Cost (install/repair)
Heat
Requires shock pad

CLARB

2.

The Reality

Evolution of Playgrounds
… and Surfacing

Michael McGuffie

40 plus years playground surfacing industry

CPSI certified professional

Business Owner

Engineer

Problem Solver

***IPEMA, CPSIA, ADA, MAAB, CMR, ASTM Certified Products**

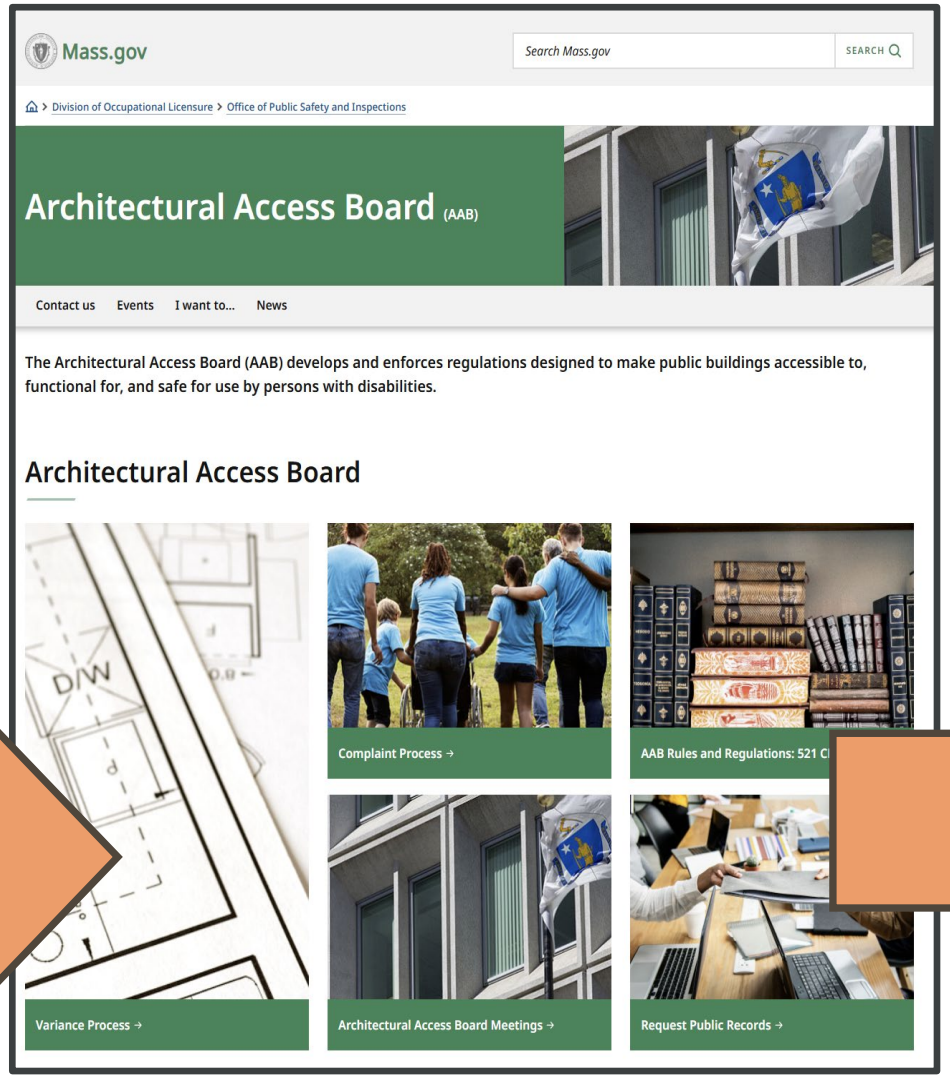
US Playground Surfacing
Surfacing Playgrounds Since 1986

IPEMA Certified Engineered Wood Fiber

16 ft CFH – IPEMA Certified Engineered Wood Fiber Playground Safety Surfacing

1. The Engineered Wood Fiber Playground Safety Surfacing is fully IPEMA Certified Engineered Wood Fiber and **meets or exceeds all ASTM (F-1292-18, F-3351-19, F-2075-15, F-1951-14)**, **CPSC**, and **ADA guidelines**.
2. Additionally, our Safety Surfacing is **certified to conform to the requirements of CPSIA 2008** (Consumer Product Safety Improvement Act of 2008).
3. More importantly, our Safety Surfacing has also been **tested to and exceeds the ASTM F1951-14 Wheel Chair Accessibility standard** required by the ADA law.
4. **It is also a 100% natural, renewable, green, and safe product.**

The Challenge… make it ‘Truly’ wheelchair accessible



LMADRS - Passing the Tests in the Lab & Real World

IPEMA INTERNATIONAL PLAY EQUIPMENT MANUFACTURERS ASSOCIATION

TÜV SÜD America

IPEMA ASTM F3351-19E1 CERTIFICATE OF COMPLIANCE

ISSUE DATE: March 3, 2025
Requested By: Michael McGuffie
Project: USPS – 10' CFH – LMADRS Mats w 6 inches of EWF

In the interest of public playground safety, IPEMA provides a third-party certification service whereby TÜV SÜD Americ uses this test method to determine the shock absorption properties of a playground surface at a specific impact heigh in order to evaluate a particular playground surfacing system using the g-max and HIC values described in Specificati F1292.

The manufacturers listed below have received written validation from TÜV SÜD America that the products listed confo with the requirements of ASTM F-3351-19e1.

TÜV SÜD America validates that the impact attenuating performance criterion specified by ASTM F3351-19e1 has bee met or exceeded.

MODEL #	COMMERCIAL NAME OF PRODUCT	PRODUCT LINE	THK/HT	MANUFACTURER
10' CFH - LMADRS Mats w 6 inches of EWF	10' CFH – LMADRS Mats w 6 inches of EWF	LMADRS Matting on EWF	6.875" / 10'	US Playground Surfacing

Michael McGuffie 860-309-9901 mmcguffie@USPlaygroundSurfacing.com

2 - Applicable Playground Subcommittees and Standards

Subcommittee F15.29 on Playground Equipment for Public Use

Subcommittee F08.63 on Playground Surfacing Systems

Standards

ASTM F1292 - 17a
Standard Specification for Impact Attenuation of Surfacing Materials Within the Use Zone of Playground Equipment

ASTM F2075 - 15
Standard Specification for Engineered Wood Fiber for Use as a Playground Safety Surface Under and Around Playground Equipment

ASTM F1951 - 14
Standard Specification for Determination of Accessibility of Surface Systems Under and Around Playground Equipment

The Engineered Wood Fiber and Matting should meet or exceed

1. CPSC Guidelines
2. IPEMA Certification to 16 ft CFH or 20 ft CFH, Critical Fall Height
3. Mass Commonwealth Certification of Accessibility Matting
4. Impact Attenuation — ASTM F – 1292 -22
5. Impact Attenuation — ASTM F – 3351 -19
6. Sieve analysis — ASTM F – 2075 -20
7. Heavy Metals — ASTM F – 2075 -20
8. Tramp Metals — ASTM F – 2075 -20
9. MAAB Accessibility — Mass 521 CMR 19.7
10. ADA Accessibility — ASTM F1951-14 Wheel Chair Accessibility
11. CPSIA 2008 (Consumer Product Safety Improvement Act of 2008)
12. Carry $ 3 million in Product Liability Insurance
13. Have a 15 year Limited Warranty on the EWF
14. All test results must be in writing from an independent certified test lab.

IPEMA INTERNATIONAL PLAY EQUIPMENT MANUFACTURERS ASSOCIATION MEMBER

IPEMA CERTIFIED TO ASTM F1292

IPEMA CERTIFIED TO ASTM F2075

LMADRS Matting over EWF & PIP

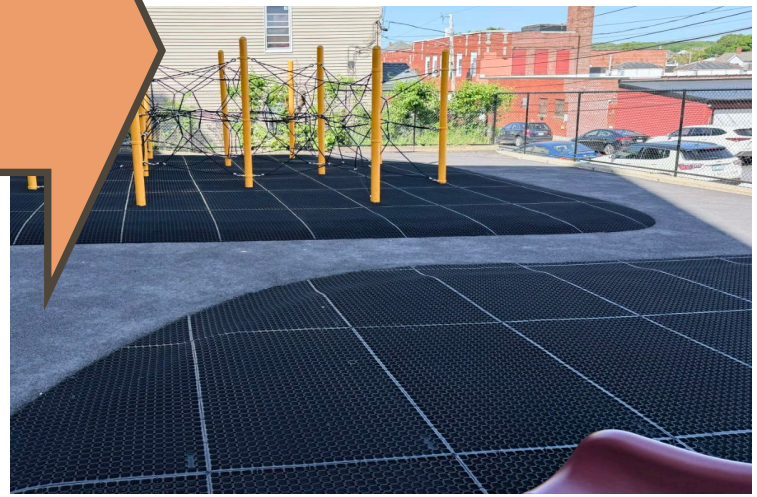
US Playground Surfacing
Michael McGuffie 860-309-9901
mmcguffie@usplaygroundsurfacing.com

LMADRS Matting Performance Improvement Testing When Installed Over Poured in Place

LMADRS Matting (Low-Maintenance, Accessible, Durable Rubber Safety Matting)

Certified Field Testing Data Available

		Before our LMADRS Matting		After our LMADRS Matting		Improvement from LMADRS Matting	
Playground 1	Drop Height	G-Max	HIC	G-Max	HIC	G-Max	HIC
Location 1	4'8"	86.5	362.5	74.5	295.0	16%	23%
Location 2	4'1"	102.0	415.5	79.5	297.5	28%	40%
Location 3	7'9"	154.0	1012.5	118.5	703.5	30%	44%
Playground 2	Drop Height	G-Max	HIC	G-Max	HIC	G-Max	HIC
Location 1	7'7"	127.0	748.5	103.0	560.5	23%	34%
Location 2	7'4"	181.0	1221.0	122.0	714.0	48%	71%
Location 3	6'6"	145.5	855.0	114.0	605.0	28%	41%




State-of-the-art LMADRS Accessible
Playground Rubber Safety and Low
Maintenance Surfacing
Bellevue, Washington

Stephanie Lapham

Recreation Manager

City of Newtown, Massachusetts

CPSI Certified Professional


Budget
Maintenance
Accessibility
Timing
Durability

US Playground Surfacing
Surfacing Playgrounds Since 1986

https://youtu.be/2CyN5GECEy0

CLARB

Key Takeaways

- **Look for CPSI certified playground designers and inspectors**
- **The Consumer Product Safety Commission (CPSC) has a set of guidelines that are updated every couple of years. The CPSC also issues product recalls and warnings on their website (cpsc.gov).**
- **The American Society for Testing and Materials (ASTM International) has issued a set of standards (ASTM F1487-95) for playgrounds.**
- **Standard for accessibility comes from the ADA (Americans with Disabilities Act)**
- **The International Playground Equipment Manufacturers Association (IPEMA) provides third-party certification of manufactured equipment, verifying that all CPSC and ASTM standards have been met. Look for the IPEMA seal before you buy.**

Questions?

CLARB

Complete by April 15, 2026

1. Post-session quiz (75% or higher)
2. Evaluation
3. Certificates will be emailed on April 16.

Provide your feedback:

Complete the CE quiz:

Upcoming ProSeries

June 24

- Spec for Success:
  The Benefits of Structural Soil

August 26

- Summer Learning Lineup
- 3 HSW courses
- Virtual, on-demand or in Calgary, Alberta

All $0 for active CLARB Record Holders

PRO SERIES
COURSES BY CLARB

CLARB

Thank you to our Supporting Parners

pland COLLABORATIVE

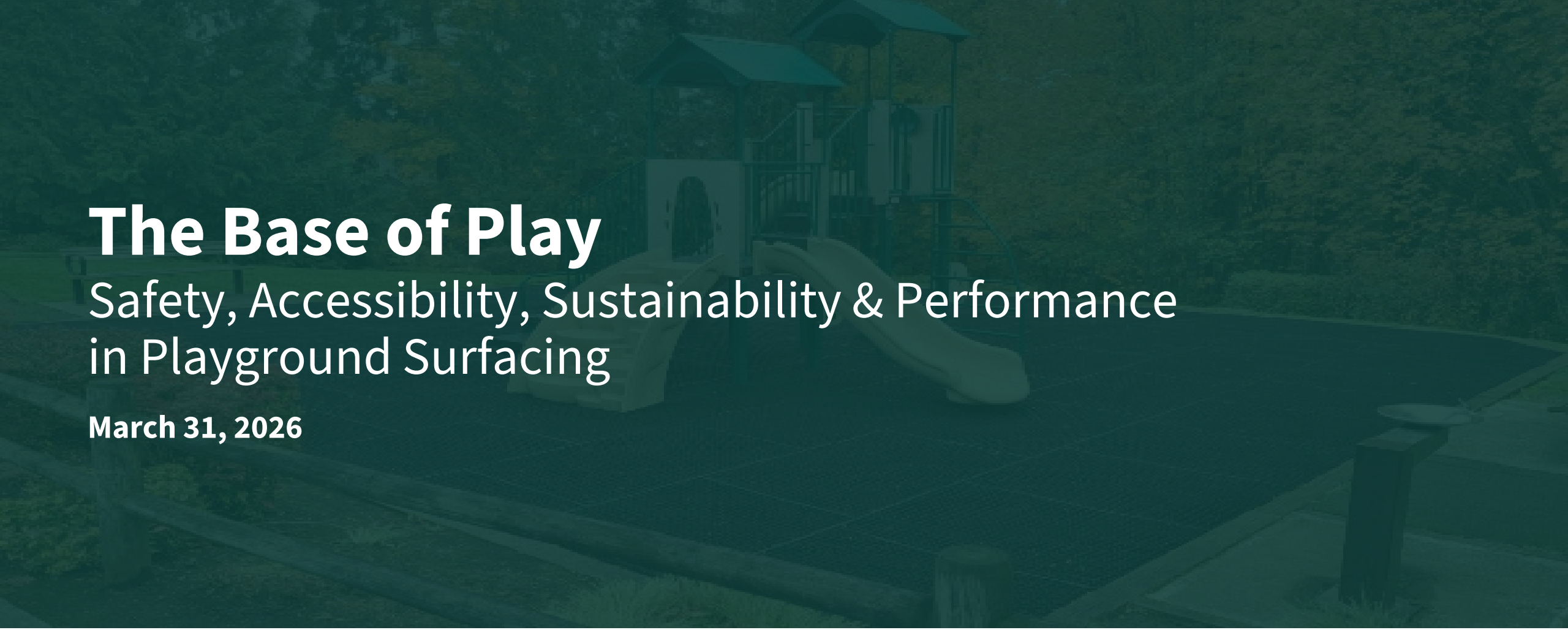
Crystal *where ideas flow™*

psi

COUNCIL OF LANDSCAPE ARCHITECTURAL REGISTRATION BOARDS

CLARB SUPPORTING PARTNER

CLARB



The Base of Play

Safety, Accessibility, Sustainability & Performance in Playground Surfacing

March 31, 2026

CLARB
ADVANCING PROFESSIONAL STANDARDS IN LANDSCAPE ARCHITECTURE

PRO SERIES
COURSES BY CLARB

US Playground Surfacing
Surfacing Playgrounds Since 1986

LACES™