Synthetic Lane and Approach

MAINTENANCE MANUAL

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QubicaAMF Bowling Products, INC.
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SYNTHETIC LANE AND APPROACH

Maintenance Manual

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Summary of Changes

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List of Effective Pages

Page	Change No.	Effective Date
All	Rev. D	7/12/2013

Attention: New Synthetic lane Owners

1. Read this entire manual thoroughly prior to putting synthetic lanes into service to insure a trouble-free transition and years of enjoyable use.

2. **Construction hazards may be created during synthetic lane installation. It is your responsibility to insure that installation work does not create hazards for you, your employees, visitors, or the general public. All QubicaAMF employees, contractors, and subcontractors will cooperate with you fully in this effort.**

3. The synthetic lane surface can be easily damaged by ladders, sharp objects, dropped tools, accumulated grit, etc. Please take the proper steps to protect the synthetic lane surface prior to any overhead and other related work in the lane area.

4. Please note that excessive water and other liquids, or the use of any materials not specified by QubicaAMF to clean, condition, or otherwise care for synthetic lanes, will void your warranty. See your synthetic lanes warranty statement for details or contact your QubicaAMF Representative.

5. Synthetic lanes have specific humidity and temperature requirements to insure customer satisfaction and optimal equipment performance. A temperature in the normal comfort range (68°F-75°F or 20°C-24°C) and humidity range (40%-60%) is required. If the temperature or humidity is too low or too high, performance problems, not covered by the warranty, may occur and **cause your lane to become out of compliance with worldwide bowling federation rules**. For best results, monitor your temperature and humidity control equipment carefully and maintain them in good working order.

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1 Bowling Center

1.1 Bowling Center Cleanliness

Good synthetic lane maintenance starts with good, complete bowling center housekeeping. At the entrance and other high-traffic areas, we recommend the use of mats that are designed to remove dirt from shoes. Placement in the entry ways and concourse area should be such that the maximum amount of dirt, sand, and road salt are removed by these mats. These mats should be cleaned daily, by vacuuming, shaking, or as recommended by the manufacturer.

In the concourse area, good quality carpeting is essential to keep outside dirt, sand, etc. from being tracked onto the settee area and, if applicable, onto the approach. The concourse carpeting should be thoroughly vacuumed daily.

In the settee area, tile should be adequately sealed to prevent water penetration that would destroy the tile. If the tile is new, remove the manufacturers wax and then seal, using a good commercial grade tile sealer. If tile has been sealed and waxed previously, remove the old wax and sealer, then reseal with a good commercial grade tile sealer. The sealed tile should then be waxed with a good commercial grade metallic cross linked acrylic polish, which has low powdering characteristics. Two or three coats are normally adequate. Sealing of the tile and application of the new wax should be done prior to the installation of synthetic lanes.

The settee floor should be cleaned with plain water on a daily basis. If desired, a mild detergent solution using a PH neutral cleaner may be used. Follow the label instructions and rinse thoroughly to minimize powdering of the floor polish. Alkaline (high PH) cleaners such as ammonia and cleaners that contain acetone, toluene, or methylene chloride such as DBA Chlorinite Solvent #008 accelerate the floor polish powdering and slowly destroy the floor polish. In addition, do not use a cleaner that contains Butyl Cellosolve or other wax softeners. Consult the product's MSDS information if you do not know the contents. Butyl Cellosolve is a solvent that will soften the floor polish and make it sticky and easily tracked onto lane approaches. Do not use lane cleaner on the settee floor. Lane cleaners may contain Butyl Cellosolve.

WARNING: FLOOR POLISH WHICH HAS NOT BEEN PROPERLY MAINTAINED CAN POWDER OR SOFTEN. THE POWDER OR SOFTENED POLISH CAN BE PICKED UP BY THE SOLES OF BOWLING SHOES AND BE DEPOSITED ON THE SYNTHETIC LANE APPROACHES, RESULTING IN A STICKY SURFACE. BEVERAGE OR FOOD SPILLS MUST BE THOROUGHLY CLEANED AND DRIED IMMEDIATELY TO PREVENT TRACKING OR ABSORPTION BY BOWLERS' SHOES.

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1.2 Bowling Center Environment

Synthetic lanes have specific humidity and temperature requirements to ensure customer satisfaction and optimal equipment performance. A temperature in the normal comfort range (68°F-75°F or 20°C-24°C) and humidity range (40%-60%) is required. If the temperature or humidity is too low or too high, performance problems, not covered by warranty, may occur. For best results, monitor your temperature and humidity control equipment carefully and maintain them in good working order. In geographic regions with high humidity, it is advisable to run the HVAC equipment 24 hours a day to maintain recommended temperature and humidity level.

1.3 Protecting Synthetic Lanes and Approaches

While doing maintenance or repairs to the associated equipment, care should be taken to protect synthetic lanes from damage. The lanes should be covered with lane paper, cardboard, or a tarpaulin like material.

Before working on the pinspotter, the pin deck should be covered to protect it from damage and unnecessary exposure to dirt and oil that may drop down during the repairs. Loose parts and tools could also damage this area.

Care should be taken to protect the lanes when doing any repairs that could damage the lanes. Working on the masking units, overhead monitors, disassembling the ball return mechanism, or even changing the ceiling light bulbs are a few examples. When using a ladder on synthetic lanes, a clean piece of cardboard or other protective material should be used to guard the synthetic lanes surface.

Cover the lanes when painting to guard the surface from splatters and spills. Paint that does get on the lanes should be cleaned up immediately using water or mineral spirits, depending on the paint used. If the paint is allowed to dry, use a scraper blade to remove it, being careful not to gouge the surface.

No one should be allowed to walk or step onto the lanes and/or approach areas unless they are wearing bowling shoes or soft, rubber-soled non-marking shoes (e.g. tennis, trainer, or basketball type shoes that have not been worn outside [Do not bowl in these shoes.]). Other types of shoes can scratch, scuff, or leave unwanted residue that could affect the lane conditions or the slide of the approach.

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2 Lane Maintenance Introduction and Overview

Proper lane maintenance is critical, both to protect the lanes and to provide the proper sporting condition to the bowlers. There are three daily tasks that are required to maintain and protect your lanes, and to provide a good playing surface for bowlers to bowl on.

1. DUSTING - The lanes must be dusted prior to cleaning, and after every 15 games bowled. Dusting the lanes removes the top layer of dust, preventing it from mixing with the lane conditioner.
2. CLEANING - The lanes must be cleaned DAILY or more frequently if needed. This process involves completely removing all of the lane conditioner and dirt from the lane. Dirt and dust are abrasive and can damage your lane surface.
3. CONDITIONING - The lane must be conditioned daily, after every 30 games bowled, or more frequently if needed. “Conditioning” is the process of applying a very light coat of specially formulated lubricating oil to the lane surface.

Lane care products and lane maintenance equipment specifically designed for synthetic lanes should be used to clean and condition your synthetic lanes. QubicaAMF lane care products are specifically recommended for your lanes as they are designed and tested with QubicaAMF synthetic lanes for optimum longevity and performance.

NOTE: Excessive water and other liquids, or the use of any materials not specified by QubicaAMF to clean, condition, or otherwise care for synthetic lanes, **will void your warranty.** See your warranty statement for details, or contact your QubicaAMF Representative.

2.1 Lane Conditioning

Lane conditioner, sometimes called “lane oil” or “lane dressing,” is a lubricant specifically formulated to protect the lane surface from the bowling ball’s impact. Lane conditioning is the process of applying lane conditioner to the lane.

WARNING: Lacking enough lane conditioner, or improper application of lane conditioner, can result in damage to the lane surface that is not covered under warranty (refer to synthetic lane warranty).

Lane conditioning has two primary purposes: to protect the lane and to provide a good bowling environment for experienced bowlers.

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Lengthwise Taper of the Conditioner:

1. SKID – 2. TRANSITION – 3. ROLL

1. The "head" of the lane (first 15 to 25 feet [4.6 to 7.6 meters]) needs the most protection, and therefore the most lane conditioner. Enough conditioner needs to be on the head to make the ball SKID, or slide, the first 20 feet (6.1 meters) of the lane. It is critical that the ball impact area on your synthetic lanes be properly protected with lane conditioner. Depletion of lane conditioner in the head area of the lane is normal and is dependent on the number of games bowled, type of bowling balls used, and the skill level of the bowlers.
2. The "mid-lane" (from 15 up to 45 feet [4.6 up to 13.7 meters]) requires much less conditioner than the head of the lane. There can be as much as four or five times the amount of oil in the head area as compared to the mid-lane. The purpose of having less oil is to allow the ball to TRANSITION from a SKID to a "curve" or "hook."
3. The "back-end" of the lane (the last 15 to 20 feet [4.6 to 6.1 meters] prior to the pins) should be kept clean with NO oil applied. This area is where the ball begins to ROLL before the ball reaches the pins.

Crosswise Taper of the Conditioner:

OUTSIDE – TRACK – LEFT CENTER – RIGHT CENTER – TRACK – OUTSIDE

In addition to the lengthwise taper discussed previously, the amount of conditioner applied across the lane (crosswise) also varies. More conditioner is applied to the center of the lane with less applied to the outside boards. In all cases, the thickness of conditioner should comply with bowling federation regulations. There should be three to four times the amount of conditioner in the center of the lane as compared to the outside of the lane for high scoring conditions. Some tournaments and championships may dictate what crosswise ratio of conditioner to use.

1. Outside boards – Usually referencing board one (next to the gutter) to board seven. A minimal amount of conditioner is applied in this area (usually 1/4th to 1/5th the amount applied to the center boards).
2. Track – This references the area where proficient players aim. The track usually exists from board seven to board 12. There is typically 1/2 to 1/3rd the amount of oil in the track area as compared to the center of the lane.
3. Left Center and Right Center – The areas from the 10th board to the center board (20th board) on the left and right, respectively. More oil is applied to this area of the lane, because it gets the most wear. Most bowlers, recreational and proficient, release their ball somewhere in the center of the lane.

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Lane Conditioning – Lengthwise

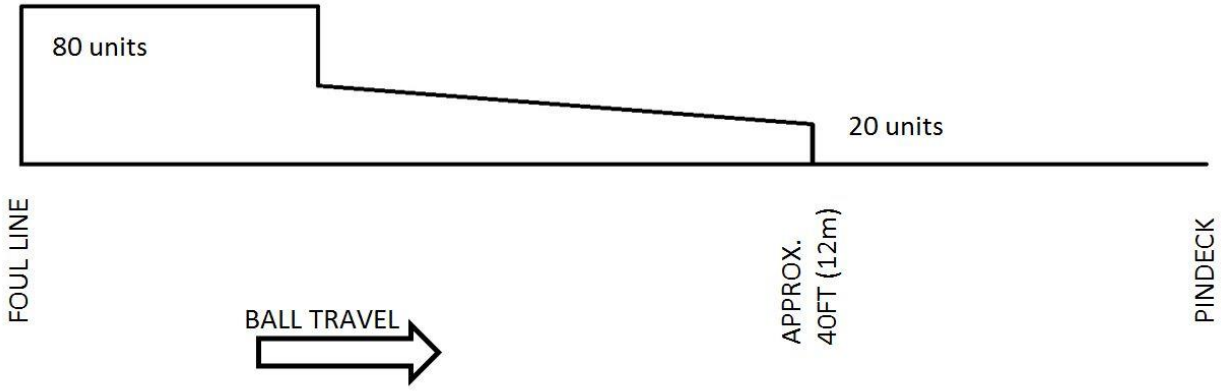

Fig. 1

Lane Conditioning – Heads
10FT (3m)

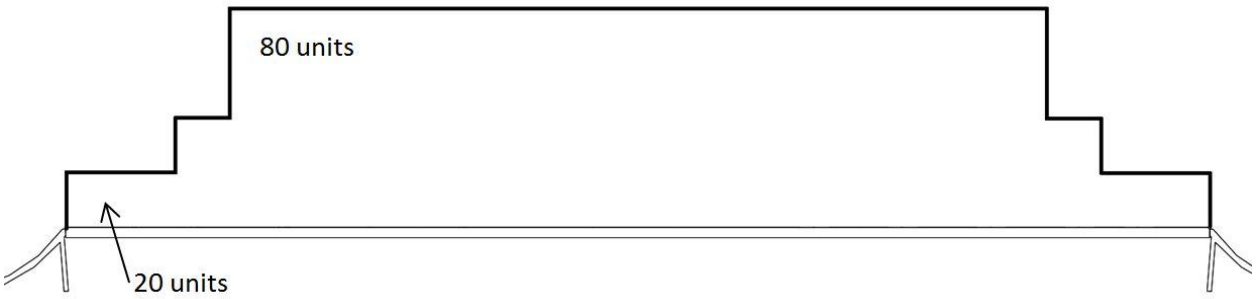

Fig. 2

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Lane Conditioning – End of Pattern
40FT (12m)

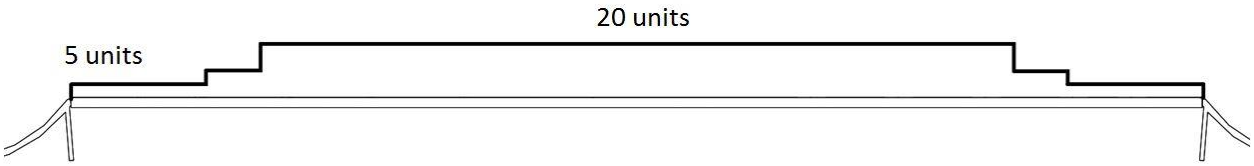

Fig. 3

Condition your synthetic lanes using a QubicaAMF conditioning and cleaning machine. Adjust the machine to apply conditioner to the lane in accordance to USBC, WTBA, or your country's bowling federation's lane conditioning specifications and rules.

The following QubicaAMF conditioners are recommended for use on synthetic lanes:

1. Utopia Lane Lubricant - Designed for maximum durability and protection. Can only be used in wickless machines or machines equipped with oil tank heaters.
2. Reactor Lane Conditioners – A high performance conditioner designed for most centers with a mix of recreational, league, organized, and tournament players.
3. VisFlo Conditioners – An economical choice that works extremely well in recreational bowling environments.

2.2 Lane Cleaning

Lane cleaning is very important. It is necessary to clean the lanes daily, or more frequently, if needed. The process of cleaning removes all of the old lane conditioner and dust that has accumulated on the lane since the last cleaning. Dust and dirt are abrasive and can scratch your synthetic lanes if bowling is continued without cleaning. Damage caused by lack of/improper cleaning is not covered under warranty.

Always clean your lanes prior to applying lane conditioner. Lane cleaners are specifically formulated to remove lane conditioner and clean synthetic lanes. DO NOT use cleaning products that are not specifically recommended for synthetic lanes. Use of other cleaners may void your warranty.

WARNING: DO NOT USE STEEL WOOL, SCOTCH-BRITE® PADS, OR ANY ABRASIVE GRIT CLEANERS THAT MAY SCRATCH THE SURFACE.

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Follow the label instructions on the synthetic lane cleaner. QubicaAMF recommends the cleaners listed below for use on synthetic lanes:

1. Formula ACC (All Conditioner Cleaner) – A strong cleaner designed to remove high performance or high viscosity lane conditioners
2. VisClean Concentrate – A strong concentrated cleaner in a small package to reduce shipping costs.
3. Formula 388 – An economical environmentally friendly cleaner recommended for most recreational centers.

2.3 Lane Dusting

Unless conditioning immediately follows the cleaning of the lanes, they should be dusted before each conditioning session, or more frequently as needed, with a QubicaAMF Hot Duster (Part #600130). It is recommended to dust the lanes just prior to league competition and after every 15 games of bowling.

2.4 Regulatory Lane Conditioning Rules

Units of oil (lane conditioner) are the basis of most lane conditioner application rules used around the world. A unit of oil is a measurement of the film thickness of the lane conditioner on the lane surface. One unit of oil is equal to 0.000007 inches (0.0001778 mm) of lane conditioner. The scoring level of any lane condition is directly related to the ratio of film thickness of conditioner on the outside areas of the lane compared to the center of the lane. That is why all lane conditioning rules regulate the film thickness of conditioner that must be used as a minimum film thickness of lane conditioner on the outside of the lane. In the United States, USBC regulates that at least 3 units of oil be used as a minimum film thickness of conditioner on the outside of the lane. WTBA, the ten pin section of FIQ, requires at least 5 units be used as a minimum film thickness of conditioner. Tournaments and/or national championships will likely have their own stricter rules for the application of lane conditioner. Measuring lane conditioner requires the use of a Computer Lane Monitor®. Contact your local bowling federation for more information.

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3 Approach Care

The maintenance of synthetic approaches is extremely important. Bowlers are very sensitive to changes in the amount of slide during the release of the bowling ball. If the approaches are too sticky or too slippery a bowler could fall and injure themselves. So it is very important to follow recommended maintenance procedures.

3.1 Approach Conditioners and Cleaners

Use only products designed and manufactured for the care of synthetic approaches. Use of other products and cleaning methods may cause damage to your approaches that is not covered under the synthetic lane warranty. QubicaAMF recommends using the following products to clean and maintain your approach surface:

1. SureSlide – to improve slide characteristics
2. Approach Spot Cleaner – to remove most types of dirt
3. 3M TroubleShooter® - to remove the most difficult spots

WARNING: Do not use, or allow bowlers to use, abrasive powders to improve slide performance e.g. talcum powder, Easy Slide®, boric acid, cigarette ashes, etc. Use of these products can damage the approach surface and are not covered under warranty. Additionally, use of such products is banned by the USBC and WTBA.

WARNING: DO NOT USE STEEL WOOL, SCOTCH-BRITE® PADS, OR ANY ABRASIVE GRIT CLEANERS THAT MAY SCRATCH THE SURFACE.

WARNING: Do not use abrasive sanding, polishing, or buffing pads on synthetic lanes or approaches

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4 Maintenance Schedule

4.1 Daily

1. Clean concourse entry mats.
2. Vacuum concourse carpet.
3. Clean settee flooring.
4. Dust capping, gutters, and downsweep.
5. Clean lanes (every 30 games).
6. Condition lanes (every 30 games).
7. Dust approaches.
8. Clean lane machine (see lane machine manual).
9. Inspect approaches for need of thorough cleaning.

4.2 Weekly

1. Clean approaches.
2. Buff approaches with rotary buffer and terry cotton pad.
3. Apply approach conditioner during buffing as needed for sticky approaches.

4.3 Monthly

1. Dust masking unit.
2. Inspect lane for damage.
3. Inspect pit end for: damage, loose flat gutters and/or adapter blocks, unusual marking, any loose hardware, and any debris (oil from pinspotter, ball chips, etc.)

4.4 Quarterly

4. Inspect sealant in lane seams and perimeter of pindeck.
5. Inspect lane levelness per USBC/WTBA regulations.

4.5 As Needed

1. Spot clean approach.
2. Clean approach thoroughly.
3. Condition approach.
4. Clean capping, gutters, and downsweep.
5. Dust approaches.
6. Dust lanes.

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5 Approach Care and Maintenance Procedures

5.1 General Requirements

Proper maintenance of the approach area is necessary to control slide conditions and to maintain approach appearance. The care and maintenance procedures in this section are minimum recommendations. Your cleaning frequency could vary due to location and number of games, so use this section as a starting point and adapt it accordingly.

The approaches should be dusted at least three times daily: in the morning, afternoon and evening. In addition, spot cleaning of the approaches should be done daily to remove stubborn ball and shoe marks.

It may be necessary to spot clean during bowling to clean up spills, marks, or lane conditioner tracked onto the approach. Approach conditioner may also be required at this time to help restore the slide conditions affected by the cleaning. However, a properly cleaned and dried synthetic approach will generally not require approach conditioner.

A daily inspection of the entire approach area should be done to check its overall cleanliness. If dirt, spills, or marks are not removed by the daily dusting and spot cleaning, a thorough cleaning is necessary.

5.2 Approach Dusting

Approaches should be dusted with a QubicaAMF 36” Approach Mop (Part #294-007-059) or 3M Doodleduster™ (Part #294-007-040). Chemically treated lane dusters are not recommended, as they may leave unwanted residue on the approach area.

The method used to dust the approach is to start at the back of the approach (near the settee area), push the mop to the foul line, turn, and return back to the settee area pushing any dust and unwanted residue into the settee area to be cleaned up later. See Fig. 4.

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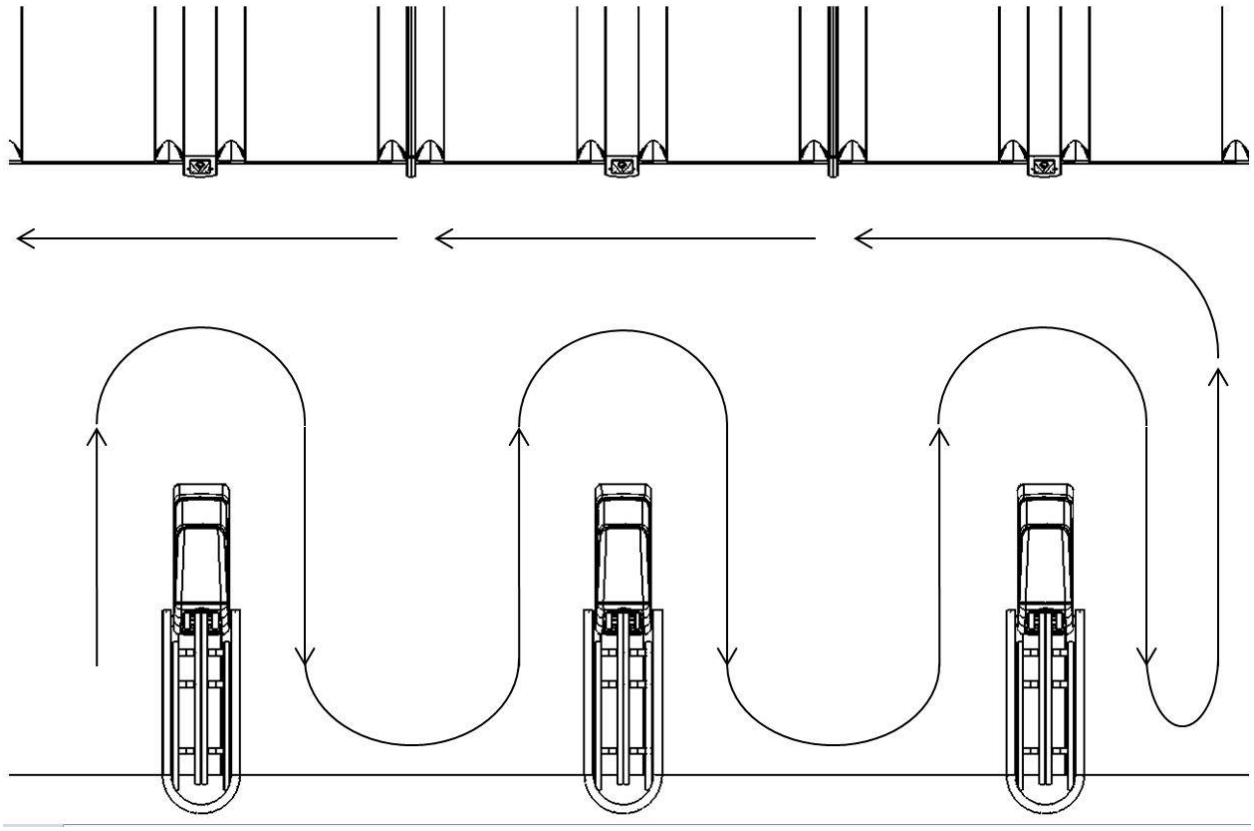

Fig. 4

DUSTING THE APPROACH

5.3 Approach - Spot Cleaning of Marks

To remove marks from the approach area, use QubicaAMF Approach Spot Cleaner and a clean dry cloth. Spray on and wipe the surface dry, turning the cloth over frequently to expose clean surfaces. The cleaner should not be allowed to dry on the approach surface. The approach area should then be dusted to remove any additional residue.

WARNING: DO NOT USE HARSH CLEANERS THAT CONTAIN ALKALINE OR CAUSTIC MATERIAL SUCH AS AMMONIA, LYE, MURIATIC ACID, ETC. CLEANERS THAT CONTAIN ACETONE OR METHYLENE CHLORIDE SUCH AS DBA CHLORINITE SOLVENT #008 SHOULD NOT BE USED EITHER. ALL OF THESE CLEANERS CAN DAMAGE THE SYNTHETIC LANE SURFACE.

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5.4 Approach - Spot Cleaning of Stubborn Marks

If the approach cleaner and a cloth will not remove marks, then try cleaning with 3M TroubleShooter™ (Part #049-006-638). After cleaning, dust the area. If the approach is sticky or tacky, apply approach conditioner.

WARNING: DO NOT USE STEEL WOOL, SCOTCH-BRITE™ PADS, OR ANY ABRASIVE GRIT CLEANERS THAT MAY SCRATCH THE SURFACE.

5.5 Approach - Spot Cleaning of Excess Lane Cleaner or Conditioner

If excessive lane cleaner or lane conditioner is tracked onto the approach, immediately clean the affected area with QubicaAMF Approach Spot Cleaner (Part #294-007-037). After cleaning, dust the area. If the approach is sticky or tacky, apply approach conditioner.

5.6 Approach - Spot Cleaning of Spills

Spills from beverages (soda, alcoholic beverages, etc.) should be wiped up with a damp cloth followed by a dry cloth to remove all moisture from the approach surface. Dust the approach after cleaning of the spill and drying. If the approach is sticky or tacky, apply approach conditioner.

WARNING: IF MOISTURE IS STILL PRESENT, APPROACH SURFACE MAY BE STICKY.

WARNING: EXCESSIVE WATER OR OTHER LIQUIDS ON APPROACH/LANE SURFACE NEAR PANEL JOINTS MAY CAUSE PANEL EDGES AND LANE JOINTS TO SWELL. AVOID EXCESSIVE AMOUNTS OF MOISTURE.

5.7 Approach Buffing

1. Dust prior to buffing approaches. Using a spray bottle of SureSlide (Part #294-007-038), apply a single pump of fine spray to the left slide area and the right slide area. Direct the spray AWAY from the lane. Be careful not to allow any overspray of approach conditioner to contact the bowling lane, capping, or gutters.

2. With a terry cloth towel, or pad, under a rotary floor machine, buff the approach conditioner thoroughly and evenly onto the approach. Allow the conditioner time to dry. Test slide the approach to verify it is ready for bowlers.

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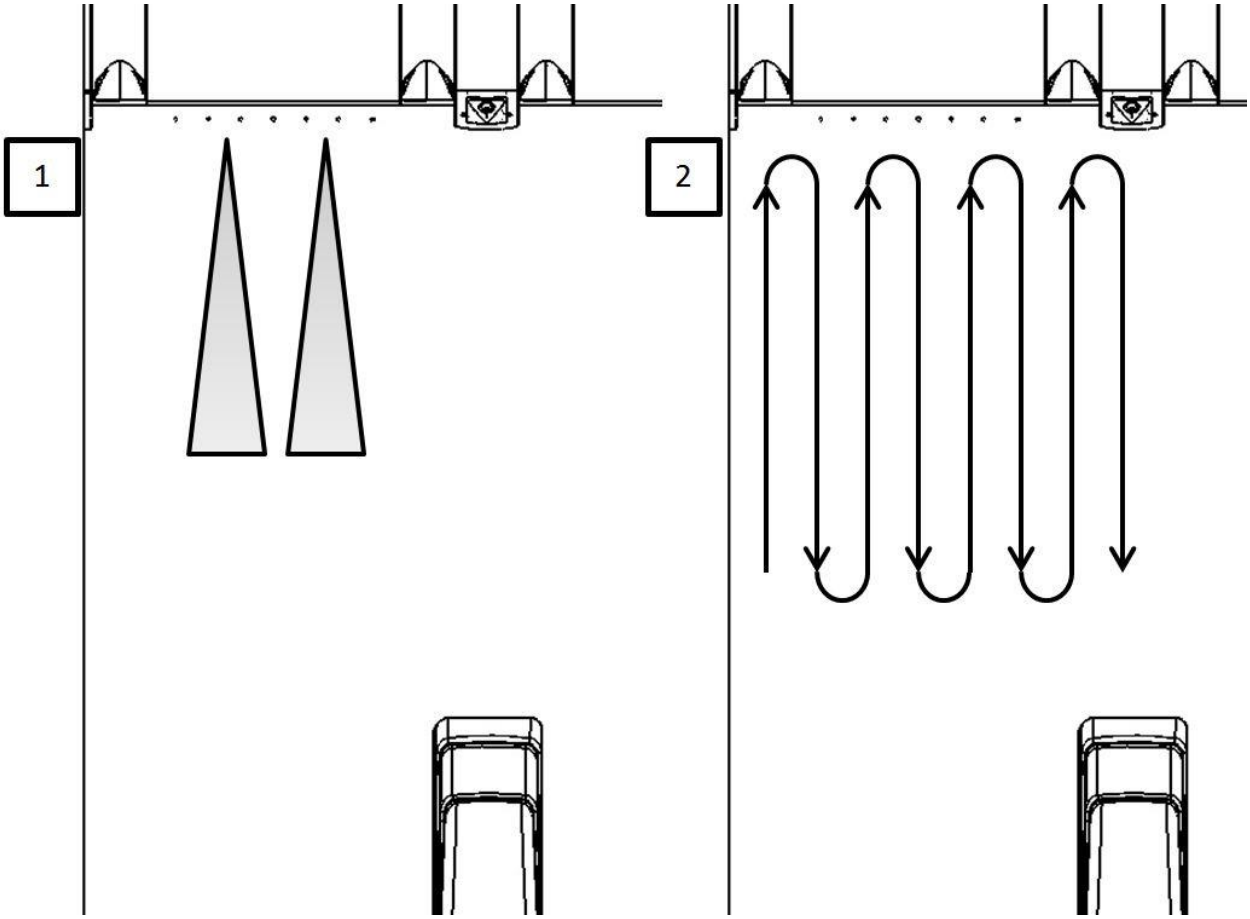

Fig. 5

BUFFING THE APPROACH

WARNING: Do not use abrasive sanding, polishing, or buffing pads on synthetic lanes or approaches!

5.8 Dry Approach Buffing

Follow the procedure from 5.7 – *Approach Buffing* without using the approach conditioner.

5.9 Thorough Approach Cleaning

When the daily inspection of cleanliness indicates that it is necessary to do a thorough cleaning of the approaches, a mop or cloth dampened only with distilled water should clean the approach area in most cases. The cleaning water must be changed frequently to prevent leaving residue on the approach. A mild detergent in a very dilute solution using a PH neutral cleaner may be used if desired. Allow the approach to dry overnight. After drying, the entire approach area should be dusted to remove any additional residue. If sticky or tacky, apply approach conditioner or dry buff the approach.

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6 Lane Maintenance Procedures

6.1 Lane Dusting

The lanes should be dusted as needed before each conditioning unless the conditioning immediately follows cleaning of the lanes. It is recommended to dust the lanes just prior to league competition and after every 15 games. In many cases, cleaning and conditioning the lanes with a lane machine will provide a better playing surface than dusting and conditioning.

Using a QubicaAMF Hot Duster (Part #600130), dust the pin deck area first, dragging the lane duster from the pin deck toward the foul line. Let the weight of the lane duster provide its own natural pressure against the lane. The base of the QubicaAMF Hot Duster is flexible and will conform to the lane surface. Advance new cloth into position and repeat this process on the next lane to be dusted.

Avoid contacting the approach with the lane duster. Do not walk on the approach with shoes that may have been contaminated with lane conditioner. If lane conditioner is tracked onto the approach, clean the area with QubicaAMF Approach Spot Cleaner (Part #294-007-037). Put some on a clean cloth (use sparingly) and clean the area. Wipe the surface dry with another clean cloth. The approach should then be dusted using the methods and products referenced in Section 5.2.

6.2 Entire Lane Cleaning with Lane Machine

Cleaning daily provides the most consistent, uniform condition possible. Excessive conditioner build-up on the "back-end" of the lane (from the end of the conditioning pattern to the tail plank) called "carry-down" will occur if the lane is cleaned infrequently. Removal of carry-down will be necessary after approximately 30 games have been bowled. It is important that when lanes are cleaned, they are cleaned completely, without any film of conditioner or cleaner residue being left on the lane. If a film of conditioner or cleaner residue is left on the lane after the lanes are cleaned, inconsistent ball reaction will occur. Before full lane or back end cleaning, the capping, downsweep, and gutters should be dusted. Cleaning is best accomplished by the use of a QubicaAMF Lane Machine (e.g. the EZ Touch or the Summit-S Series)

WARNING: Check the lane and pindeck to be sure no water and/or cleaner is left on the surface after using a lane machine or vacuum lane stripper. Standing water left on the surface may cause lane panels and pindeck to swell, which can lead to delamination, and void the warranty.

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WARNING: EXCESSIVE WATER OR OTHER LIQUIDS ON SURFACE NEAR PANEL JOINTS MAY CAUSE PANEL EDGES AND LANE JOINTS TO SWELL. THIS CAN VOID THE WARRANTY! AVOID EXCESSIVE AMOUNTS OF MOISTURE.

1. Following the label instructions, the QubicaAMF cleaners listed below are recommended for use on synthetic lanes:

    1. Formula ACC (All Conditioner Cleaner)
    2. VisClean Concentrate
    3. Formula 388

2. Ball marks in the ball impact area should be removed by cleaning the lane. If the stubborn marks are not removed, use QubicaAMF Approach Spot Cleaner as instructed in Section 5.4 – *Approach - Spot Cleaning of Stubborn Marks*.

3. Check the lane and pindeck to be sure no water and/or cleaner is left on the surface after using a lane machine or vacuum lane stripper. Standing water left on the surface may cause lane panels and pindeck to swell, which can lead to delamination.

WARNING: DO NOT USE HARSH CLEANERS THAT CONTAIN ALKALINE OR CAUSTIC MATERIAL SUCH AS AMMONIA, LYE, MURIATIC ACID, ETC. CLEANERS THAT CONTAIN ACETONE OR METHYLENE CHLORIDE SUCH AS DBA CHLORINITE SOLVENT #008 SHOULD NOT BE USED EITHER. ALL OF THESE CLEANERS CAN DAMAGE THE SYNTHETIC LANE'S SURFACE.

WARNING: EXCESSIVE WATER OR OTHER LIQUIDS ON SURFACE NEAR PANEL JOINTS MAY CAUSE PANEL EDGES AND LANE JOINTS TO SWELL. AVOID EXCESSIVE AMOUNTS OF MOISTURE.

6.3 Lane Conditioning with Lane Machine

Condition your Synthetic lanes using a QubicaAMF lane machine. Adjust the machine to apply conditioner to the lane in accordance to USBC, WTBA, or your country's lane dressing specifications and rules. Set the machine to condition approximately 40 feet (on a standard length lane). Complete directions for programming your lane maintenance machine are provided in the machine's operations manual.

The following QubicaAMF conditioners are recommended for use on synthetic lanes:

1. Utopia Lane Lubricant
2. Reactor Lane Conditioners
3. VisFlo Conditioners

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It is critical that the ball impact area on your synthetic lane surface be properly protected by lane conditioner. The distance of the ball impact area is from the foul line to approximately 10 feet down the lane. Depletion of lane conditioner in the head area of the lane (first 10ft or 3.05m) is normal and is dependent on the number of games bowled.

Lanes should be conditioned daily and after every 30 games of bowling. If the anticipated number of games exceeds 30 games, the lanes should be conditioned twice. For example: You have three leagues today, one in the morning and two in the evening, totaling 45 games per lane. Condition the lanes prior to the morning league, and then just prior to the evening leagues.

If you change the type of lane conditioner being used, completely clean the lane surface of old conditioner using a QubicaAMF lane machine. Also, we recommend that when you change lane conditioners, you should replace the wick assembly in your QubicaAMF lane machine, and the oil tank assembly should be cleaned of old conditioner.

6.4 Lane Cleaning and Conditioning by Hand

Items needed:

- A 42 inch push block or a wide shop broom – You can make the push block out of a 2”x4”x42” piece of wood. Attach a handle, and cover the wood block with scrap carpet to protect the lane surface.
- Bowling lane cleaner – You will typically be able to clean the lanes with a more diluted cleaner mix than used with a lane machine. Secondly, using too concentrated of a mixture will leave a cleaner residue on the lane surface as the lane will have to somewhat air dry.
- Two five gallon buckets – one with mixed cleaner (above) to carry with you across the lanes and one (empty) to put your dirty towels in.
- Two 100% cotton bath towels for EACH lane – One towel will be for wetting the lane and one will be for drying the lane.
- One pair of good shoes with traction – Cleaner on conditioner is VERY slippery. BE CAREFUL! Try taking a pair of old rental shoes and remove the rubber heel. They aren’t very comfortable, but you can get some traction.

Procedure:

1. Starting on lanes 1 – 2, place your cleaner bucket on lane 2 at the end of the conditioner pattern (approximately 40 feet down the lane).
2. Take a clean lane towel and fold lengthwise.
3. Submerge the towel into the cleaner and slightly wring excess cleaner out (it should still be dripping wet).

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4. Place the towel across the lane at the end of the conditioner pattern.
5. Place the push block on the towel and face the pins.
6. Push the towel, with the block, through the pindeck. Then, pull the block and towel back out of the pindeck.
7. Turn around and face the foul line.
8. Push the block toward the foul line and stop at the end of the conditioner pattern (approximately 40 feet [12.2 meters] down the lane).
9. Lift the block off of the towel and flip the towel over to its clean side.
10. Push the block to the foul line.

After completing steps one through 10, repeat this procedure with the dry towel. Allow lanes to air dry completely before conditioning. Go to lane 2, place the bucket on lane 3, and continue.

Repeat if lanes are not clean.

6.5 Lane Conditioning by Hand – Spray Gun Method

Starting with a CLEAN lane (no conditioner and no residue):

1. Fill the spray gun (Part #730-025-000) 1/2 full with lane conditioner and pump the sprayer.
2. Adjust the nozzle to spray an ultra-fine mist.
3. Walk 30 feet down the clean lane.
4. Point the sprayer toward the center of the lane at the 38-foot (11.6-meter) line. Hold the sprayer at arm's length, approximately 1 foot (.3 meter) above the lane surface.
5. Pull the trigger and walk backwards simultaneously at a normal pace.
6. Once you reach the arrows (15-foot [4.6-meter] mark), begin making left to right sweeping motions with the spray gun from the 10 board on the left to the 10 board on the right (second arrow on each side of the lane).
7. Stop two feet short of the foul line.
8. Dust the lane (per the Hot Duster instruction manual) to smooth the conditioner application.

"Fill-in" Conditioning – Conditioning on top of a conditioned lane

1. Dust the lane (per Hot Duster instruction manual).
2. Begin conditioning the lane at 15 feet (4.6 meters).
3. Follow steps 6 through 8 from "*Lane Conditioning by Hand – Spray Gun Method*."

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Caution!

1. Do not walk on the approach with shoes contaminated with conditioner.
2. More conditioner is not better. Too much conditioner can lead to machine malfunctions and off-spot pins.

NOTE:
Hand conditioning is not a precise application of conditioner. Practicing the application is the only way you can get a playable lane condition. Adjustments may be necessary. These procedures are not guaranteed to produce a USBC/WTBA legal condition.

6.6 Lane Conditioning by Hand – Sponge Mop Method

Items Needed:

- One NEW sponge mop.
- One clean five-gallon (18.9-liter) bucket.
- One line-o-duster dusting machine (e.g. QubicaAMF Hot Duster).

Procedure:

1. Test the compatibility of your lane conditioner with the sponge mop. Make sure the conditioner does not harden the sponge mop.
2. Start with a clean lane.
3. Place a small amount of conditioner (enough to submerge the sponge mop) in a clean five-gallon (18.9-liter) bucket.
4. Wring out the sponge mop as much as possible (remember, we are applying less than one ounce (<29ml) of conditioner per lane).
5. Step on the lane near the foul line, face the foul line, and place the mop just in front of the foul line (in between your feet and the foul line) with the right edge of the mop on the center board.
6. Pull the mop in a straight line from the foul line to approximately the 38-foot (11.6-meter) mark.
7. Repeat this process, including submerging and wringing out the mop, for the left side of the lane. The left edge on the mop should now be on the center board.
8. Take the line-o-duster and advance the cloth to a new section. Walk down to the end of the conditioner pattern (approximately 38 feet [11.6 meters]).
9. Standing on the division capping (cover plank), begin to cross-wipe the lane, back-and-forth, moving toward the foul line.
10. Advance the cloth again and go back to the end of the conditioner pattern.
11. This time dust the lane as normal, pulling the line-o-duster from the end of the conditioner pattern to the foul line.

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Caution!

1. Do not walk on the approach with shoes contaminated with conditioner.
2. More conditioner is not better. Too much conditioner can lead to machine malfunctions and off-spot pins.

NOTE:

Hand conditioning is not a precise application of conditioner. Practicing the application is the only way you can get a playable lane condition. Adjustments may be necessary. These procedures are not guaranteed to produce a USBC/WTBA legal condition.

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7 Minor Lane Repairs

7.1 General Introduction

Minor repairs may be necessary over the years to keep synthetic lanes' appearance and guarantee bowlers' satisfaction. This section covers how to make these repairs.

7.2 Dowel Plug Removal

There are two different methods to remove dowel plugs. The first uses a drill with a small drill bit (1/8" or 3mm). Drill slightly off-center through the plug. The plug will loosen as the drill touches the bolt underneath. The second method is to use a hammer to drive a small screwdriver or chisel into the center of the dowel plug and pry out the plug. Be careful not to contact and/or damage the panel around the dowel plug. Carefully remove the plug from the counterbore. CAUTION: USE EYE PROTECTION!

7.3 Dowel Plug Replacement

Look through the extra dowel plug assortment for a replacement plug that matches the color and board pattern of the surrounding lane area. Install the dowel plug into the counterbore. Tap into place with a block of wood and hammer.

7.4 Lane Seam Sealant Replacement

Remove the dowel plugs and screws in the two rows (first row – five plugs, second row – two plugs) closest to the seam on the leading (closest to the foul line) panel. Raise the end of the panel with pry bars. Remove the old sealant. Make sure the lane and seam is free of cleaner and conditioner before applying new sealant (Part #708-108-880). Place masking or painters tape across the edge of the panel. This will make it easier to remove the excess sealant and speed up cleanup of the lanes. Apply a liberal amount of sealant to the edge of the raised panel. Remove the pry bars and allow the panel to drop, allowing the sealant to fill the seam. Secure the panel with lane screws. Remove the excess sealant that squeezes out of the seam with a putty knife. Sealant is tenacious and difficult to remove. Mineral spirits can be used to clean excess that cannot be scraped off. Fill any voids with sealant by pressing sealant into the seam with the blade of a putty knife. Allow the sealant to cure for 24 hours. Do not put tape over the sealant during curing as this will not allow the sealant to cure correctly. After the sealant has cured, remove tape and excess sealant.

Sealant replacement must be done at room temperature (68°F-75°F or 20°C-24°C) and humidity range (40%-60%). Lanes and sealant tubes should be at this temperature and humidity range for at least four hours before application. Do not use sealant if the date code is expired.

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Failure to wait 24 hours after curing and before cleaning and conditioning the lane may result in poor adhesion. This may cause the sealant to fail prematurely or become easily displaced.

On a quarterly basis, it is recommended that the lane seams are inspected, and if necessary, lane sealant replaced. Missing or damaged lane seam sealant will allow lane cleaner and/or lane conditioner into the seam, which may cause underlayment panels or lane panels to swell.

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8 Correcting USBC/WTBA Specifications: New & Overlay Installations

8.1 During Installation

QubicaAMF or the installer guarantees that the synthetic lanes will meet USBC specifications upon completion. Certification should be scheduled by the proprietor/owner prior to the departure of the installation crew so that corrections can be made immediately.

8.2 After Installation

The bowling center operator is responsible for USBC adjustments. The following tools are required: a hammer, feeler gauge, chisel, screw driver, and USBC level.

8.3 Panel Step-Down Adjustment

On synthetic lanes, USBC allows the panel to step down at the joints between adjacent panels. The leading edge (edge closest to the foul line) must be flush to, or not more than .040" below, the trailing edge of the adjacent panel. At the foul line, a step down of 0.060” is allowed. See Figure 2 on page 24.

8.3.1 Adjustment

If a joint step-down must be corrected to meet USBC specification, measure the difference between the adjacent panel elevations to determine how much a panel needs to be shimmed. However, the head panel should never be shimmed, at all. Remove the dowel plugs (See section 7.2 – *Dowel Plug Removal*) and screws necessary to lift the end of the panel.

Use paper shims (Part #049-006-301) as required to shim only the low area (except for the head panel). The shims may not be needed all the way from gutter to gutter. One shim is approximately 0.008" thick. Tighten the screws and check the panel step-down again. Repeat as needed until the panel step-down is within USBC specification. Install new dowel plugs (Qty. 100 Part #049-200-013) per instructions in section 7.3 – *Dowel Plug Replacement*.

8.4 Panel Leveling

If a lane area warps or tilts out of USBC specification (.040"+), remove all the dowel plugs (See section 7.2 – *Dowel Plug Removal*).

8.4.1 3/8" and 1/2” Panel Leveling

Tighten the #12 x 1-1/4" flat head wood screws (Part #049-006-387) which hold the panel. You may also need to add additional screw to pull down the affected area. Drill a pilot hole (7/64" dia.), shank hole (7/32" dia.), countersink (1/2" dia.), and counterbore (.75" dia.) (See Figure 4 on page 26).

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If tightening the screws does not correct the problem, then the other side of the lane must be shimmed. When shimming the lane, it may be necessary to remove sections of the gutter. In most cases, tightening the screws will correct the tilt problem.

To reinstall the synthetic lane panel, be careful not to scratch the panel or another panel nearby. Locate the panel so the joint gap is equal on both ends. The gap should not be larger than (.050") on either end. Fasten the panel to the foundation with #12 x 1-1/4" flat head wood screws (Part #049-006-387) or #12 x 1-3/4" flat head wood screws (Part #049-006-388). Check the trailing and leading edges of the panels to see that they are within the allowable USBC specification.

The leading edge must be flush to, and not more than .040" below, the trailing edge of the adjacent panel (see Figure 2 on the next page). If a joint step-down must be corrected to meet this USBC specification, measure the difference between adjacent panel elevations to determine how much a panel needs to be shimmed.

Remove the screws necessary to lift the end of the panel. Once the end of the panel is raised, use paper shim(s) (Part #049-006-301) as required to shim only the low area. The shims may not be needed all the way from gutter to gutter. One shim is approximately .008" thick. Tighten the screws and check the panel-step down again. Repeat as needed until the panel step-down is within USBC specification. Install new dowel plugs (Qty. 100 Part #049-200-013) per the instructions in section 7.3 – *Dowel Plug Replacement*.

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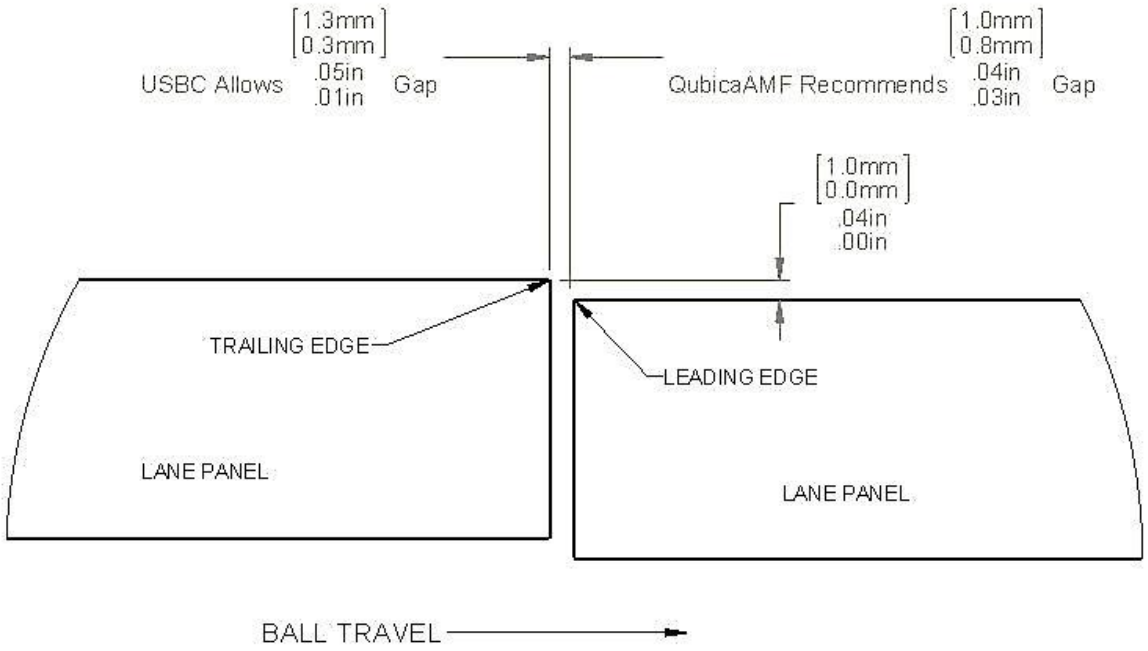

Figure 2

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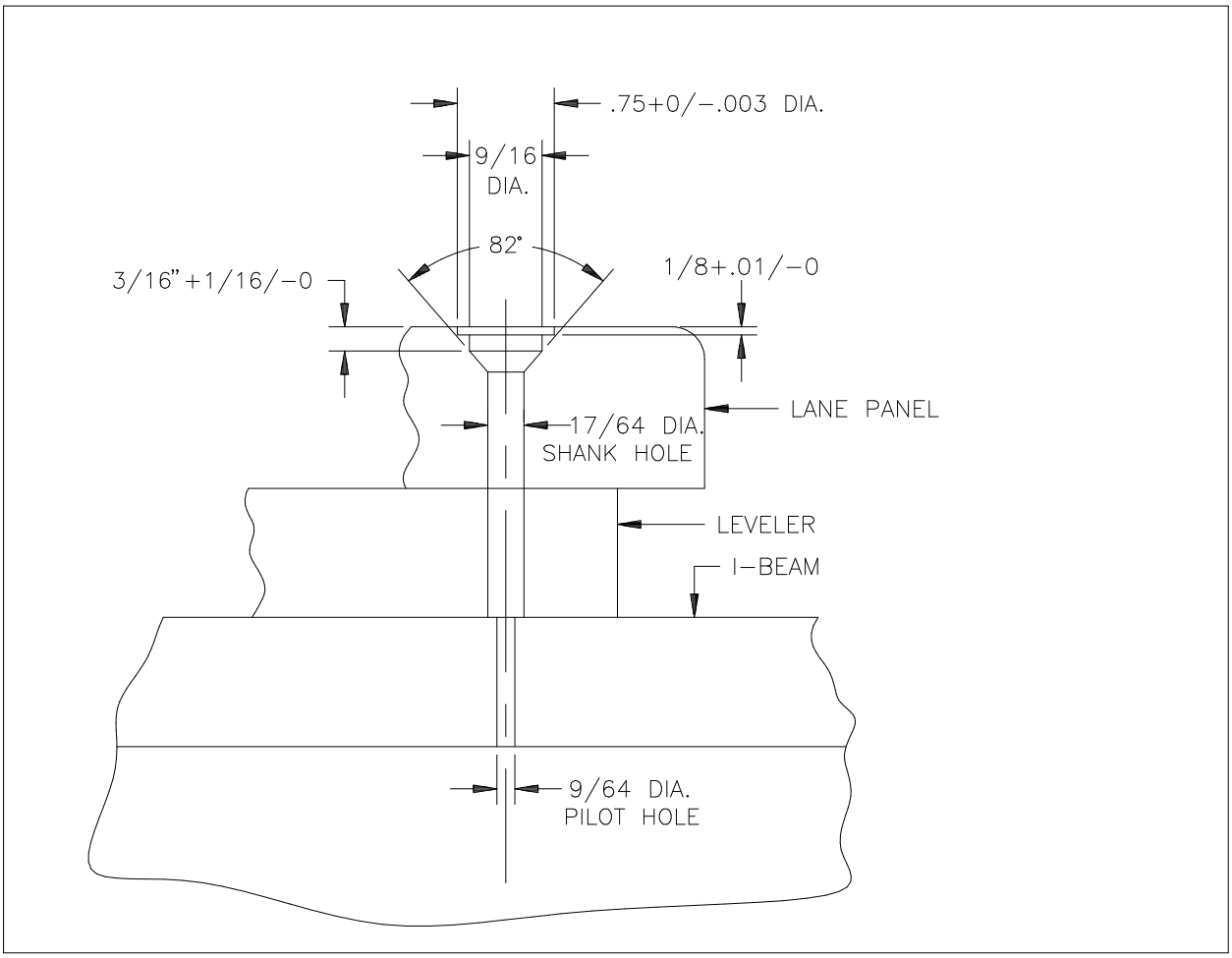

Figure 3

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9 Troubleshooting

9.1 Approach Troubleshooting

9.1.1 Sticky Approach

I. Shoe Related

	CAUSE	*SOLUTION*	*REFERENCE*
A.	New shoes	Break in shoes.	
B.	Wet shoes	Allow shoes to dry before use, or change shoes.	
C.	Dirty shoes or wax picked up on shoe soles	Lightly, wire brush shoe soles. Change floor wax.	Section 1.1
D.	Grit or dirt on shoes	Brush shoe soles, vacuum concourse, and clean settee area. Check outside entryways.	Section 1.1
E.	Shoe residue (toe or heel) from low grade shoes	Clean approach to remove residue and dust.	Section 5.2 and 5.3

II. Approach Related

	CAUSE	*SOLUTION*	*REFERENCE*
A.	Grit or dirt on approach	Clean approach and dust. Also, vacuum concourse and clean settee area. Check outside entryways.	1.1, 5.2, and 5.3
B.	Excess cleaner residue	Spot clean residue and dust approach.	Section 5.5 and 5.2
C.	Lane conditioner tracked onto the approach	Spot clean area affected and dust approach.	5.2, 5.3, and 5.5
D.	Excess bowler drying aids deposited on approach	Clean approach to remove residue and dust.	Section 5.2 and 5.3

III. Moisture/Environment

	CAUSE	*SOLUTION*	*REFERENCE*
A.	Beverage spills	Clean and dry area, and dust.	5.2, 5.3, and 5.6
B.	Moisture	Dry area and dust.	Section 5.3 and 5.2
C.	High humidity	Lower humidity, check building's HVAC system.	Section 1.2

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9.1.2 Approach Slippery

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Excessive dust	Dust approach.	Section 5.25.3
II.	Lane conditioner tracked onto the approach	Spot clean approach and dust.	Section 5.2 and 5.3
III.	Excessive approach conditioner	Spot clean approach and dust.	Section 5.2 and 5.3
IV.	Excessive bowler slide aids	Spot clean approach and dust. May need to brush shoe soles.	5.2, 5.3, and 5.5
V.	Very low humidity	Raise humidity, check building's HVAC system.	Section 1.2
VI.	Hot air drying approach	Raise humidity, check building's HVAC system and ceiling fans.	Section 1.2

9.1.3 Shoe Marks

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Non-bowling shoes	Use bowling shoes.	
II.	Bowler dragged toe or heel	Clean marks.	Section 5.3 and 5.4

9.1.4 Approach Damage

	CAUSE	*SOLUTION*	*REFERENCE*
I.	First and last lane only	Check lane machine lifting or lowering from storage position.	
II.	Consistent all lanes	Check lane machine wheels and rollers.	

9.2 Lane Troubleshooting

9.2.1 Lane Seams Bulging

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Water/high humidity	Inspect sealant, lower humidity, check lane machine, it may be leaving water on lane.	Section 7.4

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9.2.2 Plugs Popping Out

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Screw loose under plug	Tighten screw and press in replacement plug (Do not over tighten.)	Section 7.2 and 7.3
II.	Water or high humidity (Warped panel)	Inspect panel, lower humidity	Section 1.2 and 7

9.2.3 Excessive Sliding of Pins on Pindeck

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Excess lane conditioner	Clean pins and pindeck. Scuff bottom of pin with 80 grit sandpaper.	

9.2.4 Scratches on Lane Surface

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Consistent pattern	Check lane machine wheels and rollers. Check duster wheels and rollers. Check house balls for damage. Check league bowler balls for damage. Check with pro-shop about sufficient bevel on finger insert holes.	
II.	Inconsistent pattern	Investigate for other sources. (e.g. ladders, dropped tools, walking on lane)	

9.2.5 Unusual Wear Marks on Lanes

	CAUSE	*SOLUTION*	*REFERENCE*
I.	If black mark or streaks, a bowler used a rubber ball.	Clean marks.	Section 6.2 and 6.4
II.	On every lane, lane machine may be rubbing lane.	Inspect lane machine.	
III.	Dull stripes	Check lane machine or duster	

9.2.6 Lane Panels Flexing or Not Level

	CAUSE	*SOLUTION*	*REFERENCE*
I.	High humidity	Lower humidity - check building's HVAC system.	Section 1.2
II.	Lane out of USBC spec.	Adjust shims under lane panel	Section 8

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9.3 Lane Conditioning Troubleshooting

9.3.1 Poor Cleaning

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Lane machine	Inspect and adjust lane machine.	
II.	Cleaner selection	Evaluate cleaner.	
III.	Cleaner volume	Check lane machine manual.	
IV.	Cleaner concentration	Check cleaner labeling.	
V.	Age of cleaner	A fresh bottle of cleaner	
VI.	Lane out of specification	Check lane levelness.	

9.3.2 Cleaner Residue

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Lane machine	Verify lane machine is cleaning correctly.	Consult lane machine manual.
I.	Cleaner concentration too high	Check cleaner labeling.	
II.	Wrong cleaner selected	Evaluate cleaner.	

9.3.3 Too Much Lane Conditioner - "Carry Down"

	CAUSE	*SOLUTION*	*REFERENCE*
II.	Insufficient lane cleaning	Verify lane machine is cleaning correctly.	Consult lane machine manual.
III.	Excess lane conditioner at the end of the pattern	Adjust pattern applied by lane machine.	
IV.	Bowler complaint of carry down, ball not finishing	Inspect for sufficient lane conditioner on heads (first 10ft or 3.05m).	

9.3.4 Lane Hooking Too Much

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Not enough lane conditioner	Inspect and adjust pattern.	
II.	Pattern too short	Inspect and adjust pattern.	

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9.3.5 Lane Not Hooking Enough

	CAUSE	*SOLUTION*	*REFERENCE*
III.	Lane not clean	Verify lane machine is cleaning correctly.	Consult lane machine manual.
I.	Too much conditioner	Inspect and adjust pattern.	

9.3.6 Poor Scoring

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Ratio of conditioner from outside to inside is too low	Inspect and adjust pattern.	
II.	Ratio of conditioner from front to back is too low	Inspect and adjust pattern.	
III.	Lane topography	Inspect and adjust lane.	

9.3.7 Too Much "Out-of-Bounds" (Bowler makes a small mistake to the outside and it is amplified into a big mistake.)

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Too much conditioner outside	Inspect and adjust pattern.	
II.	Lane topography	Inspect and adjust lane.	

9.3.8 Too Wet, Then Too Dry (Ball skids too far then hooks abruptly.)

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Too much conditioner at the end of the pattern	Inspect and adjust pattern.	
II.	Too short of a pattern	Inspect and adjust pattern.	
III.	Not enough ratio front to back	Inspect and adjust pattern.	
IV.	Not enough conditioner on outside of lane	Inspect and adjust pattern.	

9.3.9 Bowler Complaints of Dirty Hands or Shirt

	CAUSE	*SOLUTION*	*REFERENCE*
I.	Poor cleaning	Clean lane. Clean pit. Clean ball return. Clean return track. Clean ball lift.	

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10 Service and Replacement Parts List

Please see the QubicaAMF Center Supplies and Lane Care Brochure, or contact your QubicaAMF representative.

11 Synthetic Lanes and Approaches Warranty

Please see the QubicaAMF Warranty Document or contact your QubicaAMF representative.

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