

BY NORRIS LEGUE

An artificial turf surface, whether football field or playground, is only as good as its joined seams because historically seams are the weakest link of a good installation. Joined seams are subjected to high stress from athletic activity, maintenance vehicles, vandalism, and dimensional movements due to weather changes. A seam break can cause a completely loose field, tripping or injury due to open seam, and other hazards.

The two most widely used methods of joining seams are to glue them together on top of a wide-width, adhesive coated fabric or other adhesive-coated subsurface and/or sew them together. Benefits more than double when both are done, but most often it's one method or the other, not both.

An assembly is less likely to break if the stress is distributed evenly over a large area, one big reason why the role of adhesives is increasing versus mechanical fasteners. With fasteners, holes are made in both surfaces and the fastener passed through them for joining and securing, concentrating stress at those points (rivets, nuts/bolts, wire, thread, staples, cord, etc.). Thread or cord is used for "sewing" systems.

Using adhesives spreads the bond over a much larger area. In total gluedowns there of course are no joined seams, easing that stress and also preventing "dancing lines" on the field.

Most but not all of the new infill-type fields are not glued to a solid base but instead rely only on glued or sewn seams to hold it together. A broken seam means



Trowel application for "high-grab" adhesive for bonding artificial turf seams.

Artificial turf seams are potential hazard

a loose field. With glued seams, the wider the tape and adhesive on it, the greater the seam strength and stress distribution. With sewing, the quality of the sewing and durability of the thread are very important provided the thread is not cut. In either case, fixing a broken seam on a loose-lay field is tougher compared to a total glue-down field.

Installation

The adhesive must have three key handling properties to be economical. It must be usable under variable weather conditions; have high green strength due to its tacky gripping properties ("high grab") to overcome wind, rain, and turf curl during installation; and a wide outdoor working-time window. That's why one-part, high green strength urethane adhesives are preferred over epoxy, hot-melt or both, as

well as two-part, oily low-green strength urethane adhesives.

Trying to "save pennies" on adhesive can cost much more down the road, though many insist on trying. Secondary to low price is an adhesive's long-term exterior durability and installation handling properties.

For seam reliability, the order of preference is: Total gluedown with both glued and sewn seams; total gluedown with glued seams on wide tape; loose lay with glued seams on wide tape; loose lay with sewn seams; and loose lay with edge gluing only.

Remember, when gluing, select an adhesive with handling properties designed to fit the turf system being installed. **ST**

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