

TCRCM Runway Upgrade Proposal



Tri City Radio Controlled Modelers, Richland Washington

This document will outline the proposal to install a Geotextile Runway, using US 230 Aeromodeling Woven Runway Fabric. Estimated cost = \$9038.69

History

In 2018 a proposal was presented to the executive committee to install a fabric style runway over the existing grass runway. The proposal was not considered at that time.

Two years ago, the area experienced an extreme heat wave that lasted much longer than previous years. In addition to the extreme heat, the site experienced a failure of our watering system supply and a reallocation of the water rights. The result of these events caused much damage to the grass runway. We have made attempts to repair the damage with some success. The damaged areas are slowly recovering, however there are still damaged areas of the runway, particular the center, that are causing concern with flying our aircraft.

As the hobby is experiencing a shift to smaller lighter electric power aircraft. The cost of the aircraft is more affordable to the enthusiast and potential hobby participants. Therefore it has become apparent to the club, that we must make some changes in our flying site to accommodate the new equipment and flyers. To sustain the long term viability of our club and the benefits we provide to the sport, the runway must be modified to accept the shift in equipment, flying styles and airplane development.

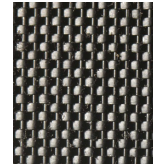
Product



US 230 Aeromodeling Woven Runway Fabric



US 230 Aeromodeling Geotextile is a 100% polypropylene, woven, monofilament fabric ideal for runway installation for model airplanes. US 230 resists ultraviolet and biological deterioration, rotting, naturally encountered basics and acids. Polypropylene is stable within a pH range of 2 to 13. US 230 Aeromodeling Geotextile meets the following M.A.R.V. properties:



PROPERTY	TEST METHOD	ENGLISH	METRIC
Grab Tensile Strength	ASTM D-4632	400 x 315 lbs	1,780 x 1,402 N
Elongation @ Break	ASTM D-4632	15 %	15 %
CBR Puncture	ASTM D-6241	1,150 lbs	5,118 N
Trapezoidal Tear	ASTM D-4533	150 x 165 lbs	668 x 734 N
Apparent Opening Size ^(1,2)	ASTM D-4751	40 US Sieve	0.425 mm
Permittivity ⁽¹⁾	ASTM D-4491	0.96 Sec ⁻¹	0.96 Sec ⁻¹
Water Flow Rate ⁽¹⁾	ASTM D-4491	70 g/min/f ²	2,852 L/min/m ²
Percent Open Area	CW-02215	1 %	1 %
UV Resistance @ 500 Hours	ASTM D-4355	90 %	90 %

⁽¹⁾ At the time of manufacturing. Handling, storage, and shipping may change these properties.

⁽²⁾ Maximum average roll value (MaxARV).

US 230 Aeromodeling Shipping & Packaging Information

SIZE	DIAMETER	WIDTH	WEIGHT	AREA	ROLLS PER TRAILER
15' x 300'	13"	15'	320 lbs	500 y ²	120

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Proposed Upgrade location

After careful consideration, the most effective approach is to consider a 30' x 300' strip of the runway to be used for this upgrade project.

Project Execution;

1. Outline the proposed upgrade area
2. Locate and Identify existing sprinkler heads that may need to be relocated or repositioned
3. Relocate or reposition sprinklers
4. Begin the removal of the grass from the proposed area
5. Cut as low as possible with the existing mowers
6. Cut lower if possible with hand mowers
7. Final cut with rental equipment
8. Remove all grass clippings
9. Repair ground as needed
10. Prepare ground to receive compactible leveling material
11. Apply leveling material to prepared area
12. Spread and level material
13. Compact material with heavy roller
14. Ensure final elevation of the base is relative to the cut height of the remaining grass runway and taxi ways
15. Trench the outer perimeter to 12" depth
16. Roll out new runway fabric, bond overlap at center
17. Straighten and tighten fabric
18. Tuck edges into trench
19. Staple and secure fabric to trench
20. Back fill trench and compact with roller
21. Site Clean Up

Costs

Runway Upgrade Costs-1

Material / Equipment	Description	Costs	Total
US 230 Fabric	2, 15'x300' rolls	\$4417.23	\$4417.23
Mower	Rental for final cut	\$150.00	\$150.00
Trencher	18" trencher, rental	\$150.00	\$150.00
Compactible Leveling Material	45 cu yds	\$1800.00	\$1800.00
Compacting	Contracted compacting	\$1500.00	\$1500.00
Staples	1500 landscape style	\$550.00	\$550.00
Outlining Paint	Marking paint, spray	\$150.00	\$150.00
Fabric Bonding Compound	Gorilla spray adhesive	\$71.46	\$71.46
Gorilla Tape	Gorilla Tough Tape	\$100.00	\$100.00
Misc.	Miscellaneous	\$150.00	\$150.00
Total		\$9038.69	\$9038.69

Labor Estimate-1

Process Step No.	Task	Hours	Num. People	Total Man Hours
1	Outline upgrade area	3	2	6
2	Locate and Identify sprinkler heads	3	2	6
3	Relocate and reposition sprinklers	4	6	24
4-8	Grass Removal	6	8	48
9-10	Ground Repairs	6	4	24
11-14	Leveling Material	6	8	48
15	Trench	3	8	24
16-19	Roll out fabric, bond center	6	8	48
20	Back fill trenches	6	8	48
21	Site Clean Up	6	4	24
	Total Man Hours			300