TECHNICAL DATA SHEET / UNIAXIAL PET WOVEN REINFORCEMENT

StructWoven SW-U

High machine-direction strength with 50 kN/m secondary capacity

DESIGN PURPOSE

Long-term structural reinforcement for a dominant tensile load path. Align the machine direction with the governing design force and detail continuity, anchorage and terminations as structural elements.

PRIMARY APPLICATIONS

Basal reinforcement; soft-ground embankments; piled load-transfer platforms; engineered cavity bridging; structural working platforms.

DESIGN BASIS

Use ultimate strength, strain response, creep, installation damage, durability, environment and the published LTDS - never ultimate strength alone.

STANDARD SUPPLY

3.5 m, 4.5 m or 5.2 m wide x 50 m or 100 m long. Custom rolls and tensile capacities available.

STANDARD GRADE SCHEDULE

Grade	Ultimate MD / CD kN/m	Elongation MD / CD %	Strength at 5% MD kN/m	CBR kN	Creep-reduced MD kN/m	Published LTDS MD kN/m	O90 mm	Water permeability L/m2/s
SW-U100/50	100 / 50	10 / 10	45	6.5	71	58	<=0.5	15
SW-U200/50	200 / 50	10 / 10	90	8.5	142	117	<=0.5	15
SW-U300/50	300 / 50	10 / 10	135	9.0	214	175	<=0.5	15
SW-U400/50	400 / 50	10 / 10	180	9.5	285	232	<=0.5	15

Test basis: tensile and strain EN ISO 10319; CBR puncture EN ISO 12236; creep-reduced tensile strength ASTM D5262; long-term design strength GRI-GT7; O90 EN ISO 12956; water permeability EN ISO 11058. O90 is <=0.5 mm and water permeability is 15 L/m2/s for all grades.

STRUCTWOVEN SW-U / LONG-TERM DESIGN

Apply component reduction factors and preserve the load path

CREEP

Independent ASTM D5262 regression on representative PET wovens reported RF_CR 1.39 at 75 years and 1.40 at 114 years at 20 C.

INSTALLATION

Representative 50/50 PET ASTM D5818 tests returned RF_ID 1.08 to 1.26 across three fills. Final adoption is fill and method specific.

DURABILITY AND ENVIRONMENT

Assess hydrolysis, pH, temperature, chemical exposure and construction weathering. Protect and bury promptly; this is not an exposed-product range.

PRELIMINARY REDUCTION METHOD

T_red = T_ult / (RF_CR x RF_ID x RF_D x RF_ENV)

Use the lower of the component-reduced result and the published LTDS. Apply the project material factor and complete ULS/SLS, deformation, anchorage and interface checks under the adopted design standard.

Published LTDS does not remove the need to verify that the supporting reduction factors transfer to the selected grade, temperature, design life and project environment.

CONTINUITY AND ORIENTATION

For uniaxial grades, machine direction follows the primary design force. Primary-direction joints require a designed load-transfer detail; secondary laps, layer spacing, anchorage and terminations are shown on the drawings.

Install on the approved formation, place cover forward, prevent direct plant trafficking, maintain cover and document repairs before burial.

PROJECT SUBMITTAL INPUTS

Geometry and load path	Design life / temperature	Ground model	Fill and placement	Strain / deformation limit	Required standards and evidence
Drawings and governing direction	Years, design temperature	Strength, consolidation, pH	Grading, max size, lift, plant	ULS and SLS criteria	Authority clauses, testing currency

Values are manufacturer-published unless otherwise stated. This data sheet supports product selection but does not replace project design, authority acceptance, conformance testing or installation specifications. Kontain can manufacture project-specific roll dimensions, strength and opening size subject to order quantity and production review.