MATERIAL DATA SHEET

T300/F550 ply transverse-strength ICAN estimates (NASA)

Temperature-specific ICAN transverse-ply-strength estimates tied to a T300/F550 source system.

Field	Value
Material ID	nasa-tm87334-t300-f550-ican-transverse-strength
Category	Composite
Condition	T6T 262-12F 550 source prepreg system represented by ICAN model 6 | continuous-fiber ply model for a source [+-45_2]s prepreg laminate
Unit system	Common SI
Unit contract	Material properties stored in SI engineering units.
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Source and Validity

Field	Value
Quality	Experimental screening
Design release allowed	No
Source family	Government materials report
Confidence	Engineering estimate
License	Open
Source note	Exact source-system identity with explicitly approximate NASA ICAN ply predictions.
Citation	C. A. Ginty and C. C. Chamis, ICAN: A Versatile Code for Predicting Composite Properties, NASA-TM-87334 (1986), Tables I-III; NASA NTRS 19860022192, https://ntrs.nasa.gov/citations/19860022192.
Valid temperature	-155 ... 95 degC (Only the three tabulated use temperatures -155, 21 and 95 degC are represented.)
Valid pressure	Pressure dependence is not represented.
Valid phase / condition	T6T 262-12F 550 source prepreg system represented by ICAN model 6
Uncertainty	NASA-TM-87334 identifies the source material as T6T 262-12F 550 with T300-6000 fiber, Hexcel F550 resin, 60 percent fiber volume and 120 degC cure. It explicitly states that trade-name systems were estimated using existing generic ICAN constituents; model 6 is T300/HMHS and uses a four-ply configuration. The three transverse strengths are therefore NASA computational approximations for preliminary screening, not measured F550 values, supplier guarantees or qualification allowables.
Last reviewed	2026-08-03
Reviewer	scripts/import_nasa_legacy_prepregs_public.py
Review status	Checked

Field	Value
Review scope	Checked NTRS public-use status, PDF identity/hash, source material designation, fiber/resin/cure identity, generic ICAN substitution, temperatures, table values and units.
Notes	NASA-TM-87334 identifies the source material as T6T 262-12F 550 with T300-6000 fiber, Hexcel F550 resin, 60 percent fiber volume and 120 degC cure. It explicitly states that trade-name systems were estimated using existing generic ICAN constituents; model 6 is T300/HMHS and uses a four-ply configuration. The three transverse strengths are therefore NASA computational approximations for preliminary screening, not measured F550 values, supplier guarantees or qualification allowables.
License ID	US-GOV-PUBLIC-USE
License URL	https://ntrs.nasa.gov/citations/19860022192
Attribution	National Aeronautics and Space Administration

Material Condition

Field	Value
Condition	T6T 262-12F 550 source prepreg system represented by ICAN model 6
Temper	not applicable
Heat treatment	120 degC cure temperature reported; detailed cure schedule not supplied
Product form	continuous-fiber ply model for a source [+-45_2]s prepreg laminate
Thickness / diameter range	source laminate total 1 mm; model 6 is marked four-ply; individual exact-system ply thickness is not established
Test direction	ply transverse tensile prediction
Processing route	source laminates preconditioned to minimize moisture, then represented by generic ICAN constituents
Temperature range	-155.0 ... 95.0 degC
Notes	NASA-TM-87334 identifies the source material as T6T 262-12F 550 with T300-6000 fiber, Hexcel F550 resin, 60 percent fiber volume and 120 degC cure. It explicitly states that trade-name systems were estimated using existing generic ICAN constituents; model 6 is T300/HMHS and uses a four-ply configuration. The three transverse strengths are therefore NASA computational approximations for preliminary screening, not measured F550 values, supplier guarantees or qualification allowables.

Properties

Physical

Property	Value	Unit	Type	Applies to
Fiber volume fraction	60.0	%	Source Reported System Input Screening	source material T6T 262-12F 550, high-tenacity Union Carbide T300-6000 fiber / Hexcel F550 resin, 60 vol% fiber; ICAN material designation 6

Mechanical

Property	Value	Unit	Type	Applies to
Transverse tensile strength	97.0	MPa	Computational Predicted Screening	source material T6T 262-12F 550, high-tenacity Union Carbide T300-6000 fiber / Hexcel F550 resin, 60 vol% fiber; ICAN material designation 6; use temperature 21 degC; cure temperature 120 degC
Transverse tensile strength at -155 degC	186.0	MPa	Computational Predicted Screening	source material T6T 262-12F 550, high-tenacity Union Carbide T300-6000 fiber / Hexcel F550 resin, 60 vol% fiber; ICAN material designation 6; use temperature -155 degC; cure temperature 120 degC
Transverse tensile strength at 95 degC	110.0	MPa	Computational Predicted Screening	source material T6T 262-12F 550, high-tenacity Union Carbide T300-6000 fiber / Hexcel F550 resin, 60 vol% fiber; ICAN material designation 6; use temperature 95 degC; cure temperature 120 degC

Engineering note: seed solid-material values are reference values only. Verify against the project material specification or supplier data sheet before release.