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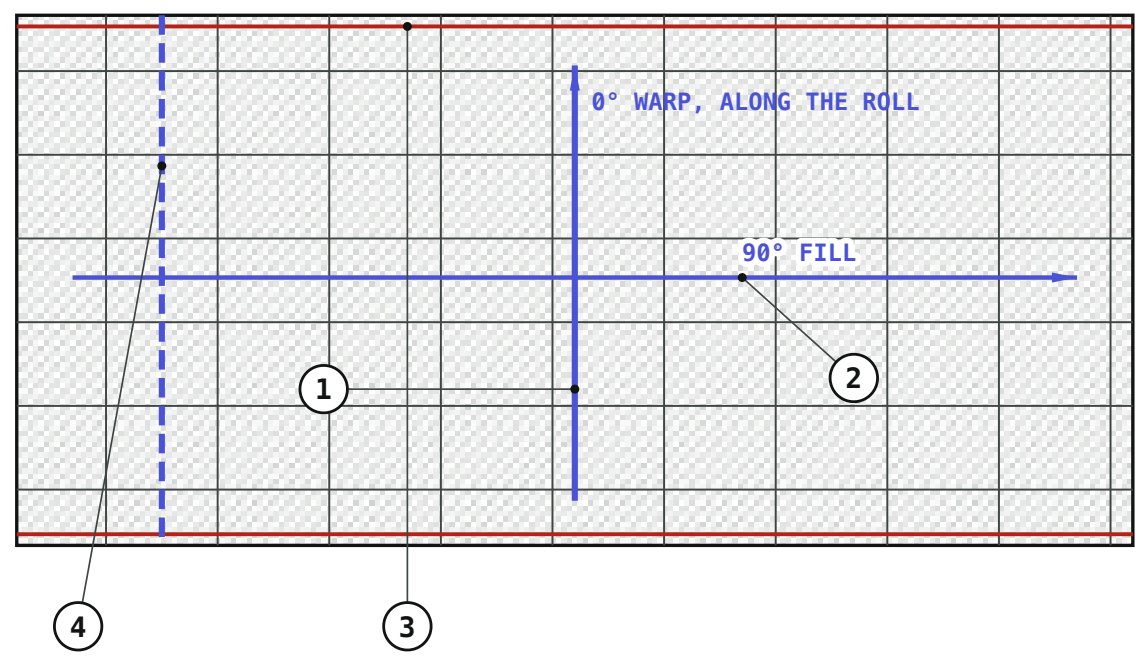
Composite Glossary: The Words of the Trade, from B-Stage to Warp Clock

Fibres · resin and cure · bagging and bonding · damage

REFERENCE DRAWING — NOT APPROVED DATA · THE SRM ALWAYS GOVERNS

PLAN

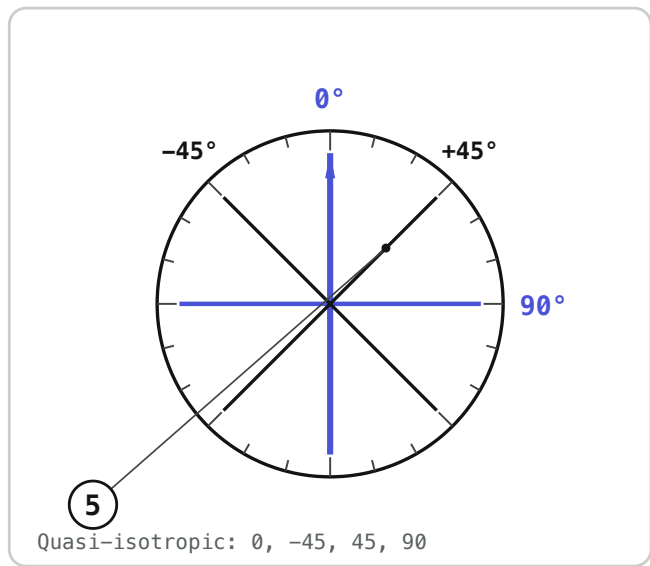
WOVEN FABRIC AS IT COMES OFF THE ROLL



Warp is usually the stronger direction. A different-colour tracer thread marks it.

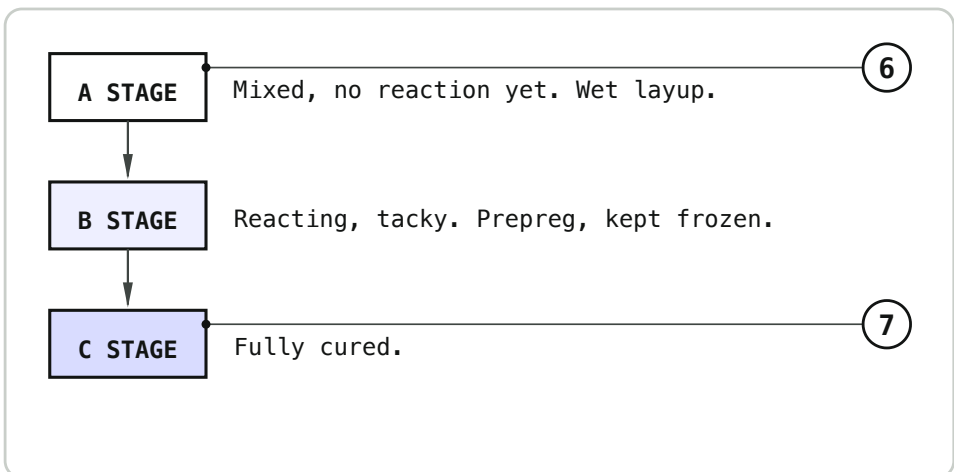
WARP CLOCK

PLIES MEASURED FROM THE WARP



DETAIL B

RESIN CURE STAGES · FAA-H-8083-31B PP. 7-7, 7-8



PARTS LIST

#	TERM	MEANING
1	Warp thread	Runs the length of the roll
2	Fill (weft) thread	Runs across the width
3	Selvage edge	Warp is parallel to it
4	Warp tracer	Colour thread marks warp
5	Warp clock	Ply angles from the warp
6	B stage	Prepreg state
7	C stage	Cured

Terms after the Handbook glossary, G-1 to G-40.

NOTES

1. Dimensions in inches. Do not scale: the SRM sets the values.
2. For reference. The applicable manual always governs.
3. Based on FAA-H-8083-31B ch. 7, G.

REVISIONS

REV	DESCRIPTION	DATE
A	First issue	2026-10-30

The Aviation Point. Structural repair reference

TITLE			
Composite glossary			
DRAWING NO. TAP-DWG-044	REV A	SCALE NTS	SHEET 1 OF 1
APPLIES TO Composites			

DO NOT SCALE DRAWING

Fabric plan, warp clock, cure stages and parts list, after FAA-H-8083-31B pp. 7-7, 7-8, 7-29 and glossary G-15, G-39. Not to scale.

Fibres and fabric

Term	What it means	Source
`Warp`	Threads that run along the length of the roll, parallel to the selvage edge; often the stronger ones	G-39; p. 7-29
`Fill (weft, woof)`	Threads across the width, woven through the warp. 90° to the warp is called the fill direction	G-15; p. 7-29
`Warp tracer`	A thread of another colour woven in to show which way the warp runs	G-39
`Warp clock`	A diagram in the SRM that shows each ply's direction against a reference direction. With no clock on the fabric, 0° is the roll direction	G-39; p. 7-29
`Unidirectional fabric`	All threads run one way, held by a few cross fibres	G-38
`Satin weave`	Warp passes under one fill thread and over several; lays over complex shapes	G-29
`Quasi-isotropic`	Plies stacked 0, -45, 45, 90 (or 0, -60, 60) so the laminate acts like an isotropic material	p. 7-2
`Composite`	Materials combined so that the result has characteristics different from any of its parts	G-9

Resin and cure

Term	What it means	Source
`Matrix`	The material that bonds the fibres and passes load into them; resins are the most common	G-22
`Thermosetting resin`	Plastic that, once hardened by heat, cannot be softened again	G-36
`Thermoplastic resin`	Plastic that softens when heated and hardens when cooled	G-36
`A stage`	Base and hardener mixed, no reaction yet. The resin of a wet layup	pp. 7-7, 7-8
`B stage`	Reaction started, the material is thick and tacky. Prepreg resin; kept at 0 °F, it stays in B stage	pp. 7-7, 7-8
`C stage`	The resin is fully cured	p. 7-8
`Prepreg`	Fibres encapsulated in uncured resin; refrigerated so it does not cure before use	G-27
`Microballoons`	Tiny hollow spheres of glass or phenolic that add body to a resin	G-22

Educational reference only, not approved data. Always consult the applicable SRM, AMM, or AC 43.13-1B and your certifying authority.

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Bagging and bonding

Term	What it means	Source
`Bleeder`	Glass cloth or mat over the layup that soaks up the resin pressed out of the plies; the bleeder ply also gives air and volatiles a path out	G-5; p. 7-19
`Breather`	Gives air a path out of the vacuum bag; it must touch the bleeder	p. 7-21
`Caul plate`	A plate that supports the part in the cure, or sits on the repair for even heat and a smoother face	p. 7-19
`Peel ply`	A thin layer cured onto the part and torn off just before bonding, leaving a clean surface	p. 7-21
`Autoclave`	A pressure vessel that heats and pressurises the part to cure the resin	G-3
`Secondary bonding`	Precured parts joined with a layer of adhesive	p. 7-27
`Co-bonding`	One part precured, the mating part cured at the same time as the adhesive	p. 7-28
`Sandwich material`	A core bonded between face sheets of metal or resin-impregnated fabric	G-29

Damage

Term	What it means	Source
`Delamination`	The separation of the layers of a laminated material	G-11
`Disbond`	Lost bond along a bondline, such as skin to core	p. 7-13

Key points

- **Warp** runs along the roll and is 0°; **fill** is 90°.
- **A, B, C stage:** mixed, tacky and reacting (prepreg, frozen), cured.
- **Bleeder** takes resin; **breather** takes air and must touch the bleeder.
- **Peel ply** is torn off just before bonding.
- **Delamination** is between plies; **disbond** is along a bondline.

SOURCES · FAA-H-8083-31B, AMT Handbook — Airframe, Volume 1, Chapter 7 and Glossary

SCAN · OPEN THIS GUIDE
theaviationpoint.com/composites/glossary/

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