Polyurethane (PU) Prepreg: Technical Specifications and Handling Guide

CSFCM9060 · WER400 · WER200

1. Material construction and typical specifications

Polyurethane (PU) prepregs fall into two main categories. The first combines fabric, chopped fibers, and PU resin. Its areal weight, width, and thickness can be tailored to product requirements. The second uses woven fabrics of different areal weights impregnated with PU resin.

The manufacturer’s technical note states that the material meets UL 94 V-0 flammability requirements. This is a manufacturer statement, not independent verification of certification or a claim about a finished part. The note describes the material as suitable for compression molding and states that curing at 135 °C for about 3 minutes can produce a relatively high glass transition temperature. Typical grades are CSFCM9060, WER400, and WER200.

Property	CSFCM9060	WER400	WER200
Resin content (%)	40 ± 2	40 ± 2	40 ± 2
Prepreg areal weight (g/m²)	1350 ± 42	680 ± 20	340 ± 20
Prepreg width (mm)	1000–1500 ± 10	1000–1500 ± 10	1000–1500 ± 10
Cured density (g/cm³)	≤2	≤2	≤2
Glass transition temperature (Tg)	≥105 °C	≥105 °C	≥105 °C
Cure time (degree of cure ≥92%)	2–4 min @ 135 °C	2–4 min @ 135 °C	2–4 min @ 135 °C
Press load	400–1500 T	400–1500 T	400–1500 T

2. Storage

CSFCM9060, WER400, and WER200 are thermosetting materials. Premature polymerization may occur at temperatures above 55 °C.

The material is supplied in sealed packaging to prevent loss of volatile constituents. Reseal it immediately after incoming sample inspection and store it away from light at or below 25 °C. See the table below for shelf life by storage temperature.

After removing the material from cold storage or another low-temperature environment, open the outer carton but keep the inner plastic bag sealed until the material reaches room temperature (22 ± 3 °C). Allow approximately 6–8 hours. Do not open the inner bag for use until no condensation droplets remain on its surface.

If suitable storage cannot be provided, order only what you need and use it as soon as possible. The manufacturer recommends using the material within 7 days of manufacture whenever possible.

Storage temperature	Shelf life
25 °C	30 days
5–10 °C	60 days

Confirm the starting date for shelf life and the applicable period after resealing with the manufacturer.

3. Transport

Protect the material from rain, direct sunlight, high temperatures, crushing, and moisture in transit. Keep the outer packaging undamaged and the inner plastic packaging sealed.

4. Opening and cutting

Once opened, store PU composite prepreg at around 23 °C and use it within 7 days.

Unlike materials made by a dry process using dry fibers and solid resin, PU composite prepreg is relatively soft and has protective film on both sides. The manufacturer describes the cutting hazard as low.

Keep the plastic packaging intact so that unused prepreg can be resealed.

Stack the cut prepreg neatly to prevent contamination and distortion, and store it at around 23 °C.

Tightly reroll unused prepreg, seal it in a plastic bag to prevent moisture uptake, place it back in the carton, and store it according to your usage schedule and the storage requirements.

5. Layup and compression molding

The recommended layup-room temperature is 23 ± 2 °C.

Wear gloves during layup. Bring the plies into close contact and minimize trapped air between them.

Transfer the preformed layup to the press for curing. The manufacturer’s example uses 135–145 °C for about 240 seconds with a press load of 400–1,500 T. Set actual parameters for the application.

Temperature	110 °C	115 °C	120 °C	125 °C	130 °C	135 °C	140 °C	145 °C
Resin gel time	12 min	6 min	5 min	4 min	3 min	1 min 50 s	1 min 30 s	1 min 20 s

Application notes

Resin gel time, the time to reach a specified degree of cure, and the example compression-molding time are different measures. Press load (T) is not pressure per unit mold area. Confirm actual production conditions and the scope of any flammability rating with the manufacturer for the grade, layup thickness, mold, and press.