

VINYL ROOF WRAP

Carbon fiber cast vinyl · prep, lay, trim, post-heat – 2013 BMW F30

PLATFORM	2013 BMW F30 320i · N20 Engine
FILM	Carbon Fiber Cast Vinyl · Air-Release Adhesive
COVERAGE	Full Roof Panel – Windshield to Rear Glass
DIFFICULTY	Intermediate · ~3-5 Hours Including Prep
SKILL	DIY – Two-person job recommended

Disclaimer: Work carefully. Blades and heat guns can damage paint, glass, rubber seals, and trim. This guide describes one owner's approach – always confirm application and post-heat temperatures against your film manufacturer's data sheet.

Companion video available at crenshawengineering.com/guides

// SECTION_01 – OVERVIEW & CONTEXT

The roof is the best first panel to wrap on the F30. It is the largest flat surface on the car, the curvature is gentle in both directions, and there are no door handles, badges, or deep recesses to work around. It also has one of the biggest visual payoffs of any single exterior change – a dark roof visually lowers the car and connects the pillars to the trunk line.

Carbon fiber vinyl is less forgiving than gloss or satin film. The weave pattern shows any misalignment from across a parking lot, and overstretching distorts the pattern and thins the texture. Use a cast film with air-release adhesive – cast vinyl holds its shape after post-heat, and the air-release channels let trapped air escape instead of forming bubbles.

This guide covers paint prep, laying and squaring the film, trimming at the glass and roof channels, working around the shark fin antenna and moonroof, and post-heating every edge. Almost every wrap failure traces back to two steps: contaminated paint and skipped post-heat. Plan on two people for the liner pull and initial lay.

■ READ BEFORE STARTING

Never cut on paint. A blade that scores the clear coat leaves a line that can reach bare metal and rust under the wrap. Cut against rubber seals or trim, or use knifeless tape. Keep the heat gun moving at all times – concentrated heat can crack cold glass, melt window seals, and burn through the film.

// SECTION_02 – PARTS & CONSUMABLES

COMPONENT	SPECIFICATION / NOTES	QTY	SOURCE
Carbon Fiber Wrap Film	Cast, air-release, 60" wide	1	Wrap supplier
Knifeless Tape	3M Finish Line or equivalent	1	Wrap supplier
Isopropyl Alcohol	70% IPA or 2:1 IPA-to-water	1	Any auto parts
Clay Bar + Lubricant	Fine or medium grade	1	Any auto parts
Edge Primer (optional)	3M Primer 94 – edges only	1	Wrap supplier
Microfiber Towels	Clean, lint-free	6+	Any auto parts

- Film length: measure the roof from windshield seal to rear glass seal and add 8" (4" of handling bleed at each end). Width: 60" film covers the F30 roof channel to channel. Order a few extra feet – a sheet that folds onto itself during the liner pull cannot be saved.
- Edge primer increases adhesion in the roof channels but makes future removal harder. Apply only where the film tucks out of sight – never on the visible roof surface.

// SECTION_03 – TOOLS REQUIRED

TOOL	SPEC / MODEL	NOTES
Felt-Edge Squeegee	Hard card with felt buffer	Felt side protects film
Heat Gun	Variable temperature	Relaxing film + post-heat
Infrared Thermometer	Any point-and-shoot	Confirms post-heat temp
Snap-Off Blade Knife	30° blade, fresh tips	Snap a new tip often
Wrap Gloves	Lint-free, low friction	No fingerprints on film
Wrap Magnets	Rubber-coated	Hold film while glassing
Tucking Tool	Thin plastic, flexible	Roof channels + seals
Plastic Trim Tool	Nylon pry tool	Roof channel trim strips
Tape Measure	Soft or steel	Film sizing

// SECTION_04 – PRE-WORK & PAINT PREP

Vinyl adhesive bonds to whatever is on the surface. Wax, sealant, ceramic coating, road film, and fingerprints all sit between the adhesive and the paint and cause edges to lift within days. The film also telegraphs texture – any grit left on the roof shows as a bump under the weave.

01 Set up the work area

Work indoors or in full shade with no wind. Panel temperature should sit between 65-80°F (18-27°C) – too cold and the adhesive will not grab, too hot and it grabs before the film is positioned. Sweep and lightly mist the floor to keep dust down. Dust that lands on the adhesive side stays there.

02 Wash, clay, and strip all protection

Wash the roof with a non-wax soap and dry it fully. Clay the entire panel, including the roof channels and the base of the antenna. If the roof has a ceramic coating or sealant, it must be polished off – vinyl will not hold to a coated surface. Blow water out of the channels and seals with compressed air or a dryer before moving on.

03 Final wipe and paint inspection

Wipe the whole roof with IPA and a clean microfiber, then repeat with a second fresh towel. Wipe into the channels and along every seal. Inspect the paint under good light: failing clear coat or chips will lift with the film when it is removed, and will show through it now. From this point on, touch the roof only with gloves.

// SECTION_05 – LAYING THE FILM

Everything before the film touches paint is setup. Trim strips come out, knifeless tape goes down, and the sheet is cut and squared before the liner is pulled. Once the adhesive is exposed, the job is laying the film flat, centered, and square – not pushing it into place.

04 Remove the roof channel trim strips

Lift the trim strips out of the roof channels on each side, working from one end with a plastic trim tool. The clips are plastic and get brittle with age – go slow and keep steady upward pressure. Clean the channel underneath with IPA. The film will wrap into the channel and the strips go back in over the tucked edge after post-heat.

05 Lay knifeless tape at any cut line on paint

Anywhere the film has to end on a painted surface – around the antenna base or the moonroof opening – lay knifeless tape on the paint before the film goes down. Leave a few inches of tail past the end of each run so the filament can be pulled later. Do not overlap tape runs or lay it over a sharp curve.

06 Measure, cut, and square the weave

Cut the sheet to roof length plus 8". Before removing any liner, lay the film on the roof liner side down and line the weave up with the car's centerline. Sight it from the front and rear of the car. Mark the front edge of the liner so the orientation is not lost when the sheet comes off the roof for the liner pull.

07 Pull the liner and glass the film

With one person on each side, peel the full liner while holding the sheet off the paint by its corners. Keep light tension so the adhesive never touches itself. Stretch the film taut across the roof – "glassing" it – so it hovers flat over the panel, square to the centerline. Use magnets at the ends to hold it while you check alignment one last time.

08 Anchor the center and squeegee outward

Let the center of the film drop onto the roof and set one squeegee stroke front to back down the centerline. Work outward toward each side in overlapping strokes – roughly 50% overlap, felt edge leading, squeegee at about 45°. Push air toward the nearest edge. Leave the front, rear, and channel edges loose for now.

■ SQUARE THE WEAVE BEFORE IT TOUCHES PAINT

A gloss film can be a few degrees off and nobody notices. A carbon weave cannot – the pattern lines run the full length of the roof and any rotation is obvious next to the pillars, mirrors, and trunk lip. Air-release adhesive can be lifted and re-laid before it is squeegeed, but not after. Check alignment from both ends before the center stroke.

// SECTION_06 – EDGES, TRIM & POST-HEAT

The flat center of the roof goes down quickly. The edges are where the time goes – the roof channels, the glass seals, the antenna, and the moonroof opening if equipped. Every edge gets post-heated before the job is called done.

09 Lift and re-lay wrinkles – never squeegee over them

If a wrinkle or finger forms near an edge, lift the film back past it, warm it lightly with the heat gun to relax it, and re-lay it with tension. Squeegeeing over a wrinkle locks a crease into the film permanently and distorts the weave around it.

10 Work the film into the roof channels

Warm the film at the channel edge until it is pliable, then press it down into the channel with the tucking tool. Do not stretch the visible roof surface to reach the channel – feed slack in from the bleed instead. Trim the excess along the bottom of the channel so the edge will sit under the trim strip once it goes back in.

11 Trim the front and rear edges

Trim along the windshield and rear glass seals with a fresh blade, cutting against the rubber or trim – not the paint – with the blade angled away from the painted edge. Snap a new tip every few feet. Press the trimmed edge down firmly with the felt edge of the squeegee.

12 Cut around the antenna and moonroof

Relief-cut the film over the shark fin, settle it around the base, and pull the knifeless tape filament up through the film to cut. On moonroof cars, trim at the painted edge of the opening – the glass slides under the roof skin, and any film folded into the opening will catch.

13 Post-heat every edge, then reinstall trim

Heat every edge, the channels, and any area that was warmed or stretched to the film's post-heat temperature – approximately 200°F (93°C) – confirmed with the IR thermometer. This sets the film's memory so it stops trying to return to flat. Let it cool, then press the trim strips back into the channels.

// SECTION_07 – VERIFICATION

24-hour edge and bubble check

Inspect every edge the next day, especially the channels and around the antenna. Re-heat and press down anything that has started to lift. Small bubbles in air-release film usually press out with a finger; a stubborn one can be released with a fine pin at a shallow angle.

First wash and ongoing care

Wait at least 48 hours before washing. Hand wash only – no automatic brush washes. Keep pressure washers away from the edges and never aim the nozzle directly at a seam.

// SECTION_08 – COMMON MISTAKES

X Wrapping over wax, sealant, or ceramic coating

The adhesive bonds to the protection layer instead of the paint. The film looks fine on day one and the edges lift within the first week. Strip all protection and wipe with IPA before the film comes out of the box.

X Overstretching the carbon film

The roof is flat enough to lay with almost no stretch. Pulling the film to reach an edge distorts the weave, thins the texture, and leaves stored tension that pulls the edge back up later. Feed slack from the bleed instead of stretching the visible surface.

X Cutting on paint

A blade pressed into the roof at the antenna base or the moonroof opening scores the clear coat and can reach metal. The damage is hidden until the wrap comes off. Cut against seals and trim, or lay knifeless tape before the film goes down.

X Skipping post-heat

Unheated vinyl remembers being flat. Edges tucked into the channels and around the antenna will slowly pull back out, especially after the first hot day. Post-heat to the film's spec and verify with an IR thermometer – do not guess by feel.

// SECTION_09 – BUILD NOTES – FROM THE OWNER

The roof on this F30 is wrapped in carbon fiber as part of the exterior build. The goal was to tie the carbon fiber pillars, mirrors, door handles, and trunk lip into one continuous dark band across the top of the car, instead of a body-color roof breaking it up in the middle.

Vinyl was the right call over a carbon roof skin for a car that is still being built. It is a fraction of the cost, it is fully reversible, and the factory paint underneath stays protected. If the build direction changes, the roof goes back to stock with a heat gun.

Weave orientation is the detail that makes or breaks a carbon roof. With carbon fiber trim on the pillars and mirrors sitting right next to it, a pattern that is even slightly rotated reads as wrong immediately. Square the weave to the centerline before the liner comes off.

Paint prep and post-heat are the two steps most likely to be rushed and most likely to cause lifting. Both cost minutes. Do them.

GUIDE_005 // CRENSHAWENGINEERING.COM // WATCH THE COMPANION VIDEO FOR THE FULL WALKTHROUGH