EPTEK
Materials Shape Life

AviBond

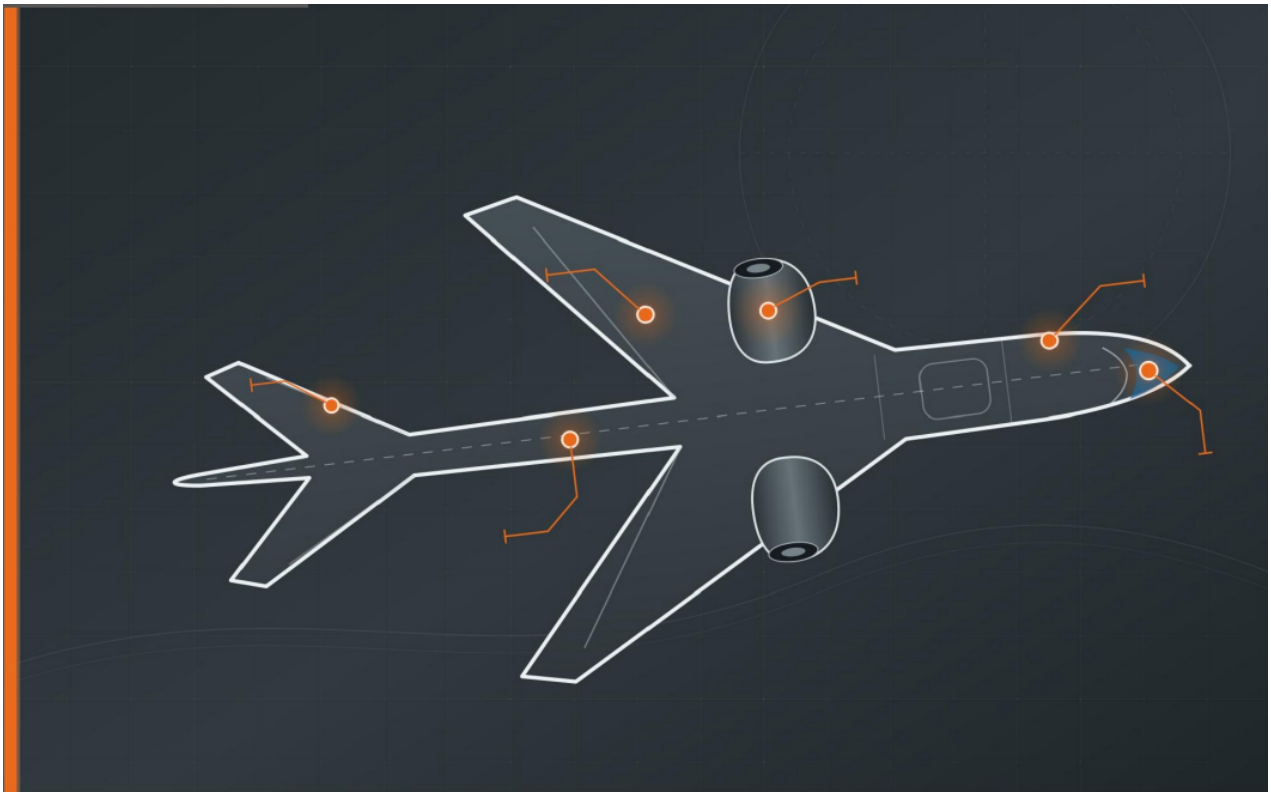
Aerospace adhesive systems

AEROSPACE ADHESIVE SYSTEMS

China-made solutions for aerospace structural bonding, honeycomb sandwich manufacture and composite repair

LOCAL SUPPLY · APPLICATION MATCHING · VALIDATION SUPPORT

STRUCTURAL BONDING · HONEYCOMB & CORE · COMPOSITE REPAIR



AviBond core product range at a glance

Identify suitable products by material form, processing window, cure temperature and principal application. Final selection must also consider substrates, loads, bond-line thickness and component-level validation.

Category	Product	Product characteristics and applications	Processing window at 25°C	Reference cure conditions
Structural bonding	EP8216	Flexible, long working time; general structural bonding of metals and composites	110-130 min	25°C/7 d; 60-70°C/2 h
Structural bonding	EP8309	Low viscosity, high peel strength; environmentally durable thin bond lines	40-50 min	25°C/72 h; 65-70°C/130 min

Category	Product	Product characteristics and applications	Processing window at 25°C	Reference cure conditions
Structural bonding	EP8360	Thixotropic and non-sagging; bonding on vertical and curved surfaces and in locally thick bond lines	40-50 min	25°C/7 d; 80°C/3 h
Structural bonding	EP8351-Q	Low viscosity and low-temperature cure; field repairs and low-temperature application	20-40 min	5-10°C/24 h; 20°C/24 h
Structural bonding	EP8448	One-component, thixotropic; medium-temperature heat cure and hot/wet property retention	5-24 h exposure at room temperature	120±5°C/60-90 min
Structural bonding	EP8392	Moderate to low viscosity; bonding multiple substrates across a broad temperature range	40-50 min	25°C/7 d; 80°C/3 h
Structural bonding	EP8394	Thixotropic and heat-resistant; gap-filling joints and test data at 200°C	55-65 min	25°C/7 d; 80°C/3 h
Structural bonding	EP8934	Strength retention and compressive load capacity at high temperature; test data at 260°C	25-35 min	25°C/7 d; 80°C/3 h
Adhesive films	EP8163-F	Medium-temperature co-curing structural adhesive film; high shear and peel strength	15-20 d exposure at room temperature	115-125°C/60-90 min
Adhesive films	EP8696-F	Structural adhesive film curing at 80°C; property retention across a broad temperature range	7-10 d exposure at room temperature	75-85°C
Honeycomb sandwich structures	EP8305	Medium density, high load capacity; inserts and local potting	Gel time: 90-110 min	25°C/7 d; 177°C/1 h
Honeycomb sandwich structures	EP8619	Low density; balance of load capacity and weight for general potting	Gel time: 25-35 min	25°C/7 d; 52°C/5 h

Category	Product	Product characteristics and applications	Processing window at 25°C	Reference cure conditions
Honeycomb sandwich structures	EP8524	Very low density; large-volume, lightly loaded filling	Gel time: 70-90 min	25°C/7 d; 52°C/5 h
Composite repair	EP8396	Low viscosity and long working time; wet lay-up and impregnation	70-80 min	25°C/5-7 d; 65°C/3 h
Composite repair	EP8956-INJ	Very low viscosity and long pot life; controlled injection repairs	120-180 min	Graded cure options: room temperature/80°C/150°C
Composite repair	EP8960-FC	Lightweight and easy to sand; filling and fairing in non-primary load-bearing areas	50-70 min	20-30°C

Quick product-selection sequence

Step	Selection factor	Points to consider
01	Substrate	Metal/composite/honeycomb
02	Load	Shear, peel and compression
03	Bond line	Thin layer/gap/potting
04	Cure	Processing window/cure temperature/post-cure
05	Validation	Environment/failure mode/durability

Complete product index | Structural adhesives and adhesive films

Use the product code as the first search key. Filter by category, material form, processing window and cure conditions, then complete selection using the official TDS and component validation.

Product	Category	Material form	Working time	Cure temperature/referenc econditions	Main bonding or repair application
EP8216	Room-temperature/low-temperature structural adhesives	Two-component flexible paste	110-130 min	25°C/7 d, or 60-70°C/2 h	Flexible, long working time; structural bonding of metals and composites
EP8309	Room-temperature/low-temperature structural adhesives	Two-component, low viscosity	40-50 min	25°C/72 h, or 65-70°C/130 min	Low viscosity, high peel strength; environmentally durable thin bond lines

Product	Category	Material form	Working time	Cure temperature/referenc econditions	Main bonding or repair application
EP8360	Room-temperature/low-temperature structural adhesives	Two-component thixotropic paste	40-50 min	25°C/7 d, or 80°C/3 h	Thixotropic and non-sagging; vertical, curved and thick bond-line joints
EP8351-Q	Room-temperature/low-temperature structural adhesives	Two-component, low viscosity	20-40 min	5-10°C/24 h, or 20°C/24 h	Low viscosity and low-temperature cure; field repairs
EP8210	Room-temperature/low-temperature structural adhesives	Two-component toughened epoxy	See technical data sheet	Room-temperature cure	General bonding of metals, non-metals, composites and ceramics
EP8370	Room-temperature/low-temperature structural adhesives	Two-component transparent, low-viscosity resin	See technical data sheet	Room-temperature cure	Transparent bonding, low-viscosity impregnation and field repairs
EP8460	Room-temperature/low-temperature structural adhesives	Two-component high-toughness epoxy	See technical data sheet	Room-temperature cure	Repairs to metal, wood, ceramics, foam and glass-fibre composites
EP8448	Medium-temperature ,heat-resistant structural adhesives	One-component thixotropic paste	5-24 h	120±5°C/60-90 min	Medium-temperature heat cure and hot/wet environments
EP8392	Medium-temperature ,heat-resistant structural adhesives	Two-component paste	40-50 min	25°C/7 d, or 80°C/3 h	Moderate to low viscosity; bonding multiple substrates across a broad temperature range
EP8394	Medium-temperature ,heat-resistant structural adhesives	Two-component thixotropic paste	55-65 min	25°C/7 d, or 80°C/3 h	Gap-filling joints and medium- to high-temperature service conditions
EP8160-H	Medium-temperature ,heat-resistant structural adhesives	Three-component thixotropic structural adhesive	See technical data sheet	140±2°C/2 h	Panel-to-panel bonding and combined adhesive/mechanical joints
EP8H1-H	Medium-temperature ,heat-resistant structural adhesives	One-component medium-temperature -curingpaste	See technical data sheet	100°C/10 h, or 120°C/3 h, or 150°C/1 h	High-strength load-bearing joints resistant to ageing and fatigue
EP8H2-H	Medium-temperature ,heat-resistant structural adhesives	One-component medium-temperature -curingpaste	See technical data sheet	130±5°C/2 h, or 150°C/1 h	High peel strength; curing towards the lower end of the medium-temperature range

Product	Category	Material form	Working time	Cure temperature/referenc econditions	Main bonding or repair application
EP8934	High-temperature structural adhesives	Two-component high-temperature-res istantpaste	25-35 min	25°C/7 d, or 80°C/3 h	Strength retention and compressive load capacity at high temperature; 260°C test point
EP810T-H	High-temperature structural adhesives	Modified epoxy	See technical data sheet	180-200°C/2-4 h	High-temperature, load-bearing structural bonding of metals
EP820M-H	High-temperature structural adhesives	Boron-phenolic-modi fiedepoxy paste	≥5 h	175±5°C/3 h	High-temperature structural bonding and fixing of metals
EP826M-H	High-temperature structural adhesives	Phenolic/acetal/silico nesystem	See technical data sheet	180-200°C/2-4 h	High-temperature metal structures and short-duration thermal shock
EP8400-H	High-temperature structural adhesives	Two-component, room-temperature-cu ringheat-resistant adhesive	See technical data sheet	Room-temperature cure	Repairs to metal, ceramics, rigid plastics and glass-fibre composites
EP8163-F	Adhesive films	120°C-class supported adhesive film	15-20 d(25°C)	115-125°C/60-90 min	Medium-temperature co-curing structural adhesive film; high shear and peel strength
EP8696-F	Adhesive films	80°C low-temperature adhesive film	7-10 d(25°C)	75-85°C	Low-temperature cure; shear performance across a broad temperature range
EP814K-F	Adhesive films	Modified epoxy adhesive film in multiple specifications	See technical data sheet	174°C/120 min	High strength and high peel strength; long room-temperature storage life
EP814M-F	Adhesive films	Modified epoxy adhesive film in multiple specifications	See technical data sheet	174°C/120 min	Multiple areal weights/thicknesses; suitable for metal and sandwich structures

Selection priorities

First establish the substrates and service temperature, then the curing equipment, assembly cycle, bond-line thickness and load type. Catalogue data do not replace the official TDS or project validation.

Complete product index | Films, sandwich structures and repair

Use the product code as the first search key. Filter by category, material form, processing window and cure conditions, then complete selection using the official TDS and component validation.

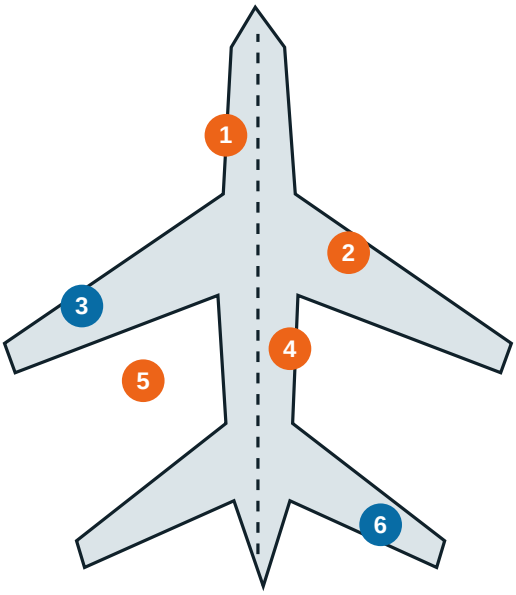
Product	Category	Material form	Working time	Cure temperature/referen ceconditions	Main bonding or repair application
EP814C-F	Adhesive films	175°C heat-resistant adhesive film	See technical data sheet	175°C class	Matched corrosion-resistant primer; high-temperature metal structures
EP824C-F	Adhesive films	120°C elastomer-modified epoxy adhesive film	See technical data sheet	120°C class	High peel strength, fatigue and hot/wet resistance; sandwich structures
EP8305	Honeycomb potting and core fillers	Medium-density potting compound	90-110 min	25°C/7 d, or 177°C/1 h	Insert potting, edge closure and high load transfer
EP8619	Honeycomb potting and core fillers	Low-density potting compound	25-35 min	25°C/7 d, or 52°C/5 h	Balance of load capacity and weight; edge closure and general potting
EP8524	Honeycomb potting and core fillers	Very-low-density potting compound	70-90 min	25°C/7 d, or 52°C/5 h	Weight reduction first; large-volume, lightly loaded filling
EP8P1-CP	Foaming core-splice adhesives	165-175°C-class foaming adhesive film	See technical data sheet	165±10°C/2 h	Core-strip splicing, edge filling and gap compensation
EP8P1B-CP	Foaming core-splice adhesives	175°C foaming adhesive film	See technical data sheet	175±5°C/2.0±0.5 h	Core splicing in high-temperature sandwich structures
EP8P3A-CP	Foaming core-splice adhesives	175°C foaming adhesive powder	See technical data sheet	175±5°C/2.0±0.5 h	Complex edges, local filling and powder application
EP8P3B-CP	Foaming core-splice adhesives	175°C foaming adhesive powder	See technical data sheet	175±5°C/2.0±0.5 h	High-temperature honeycomb core splicing and local reinforcement
EP8P9-CP	Foaming core-splice adhesives	125°C foaming adhesive film	See technical data sheet	125±5°C/2 h	Core splicing and gap filling in medium-temperatur esandwich structures
EP8P14-CP	Foaming core-splice adhesives	125-130°C foaming adhesive paste	See technical data sheet	125±5°C/2 h	Gap filling and splicing in curved or irregular areas

Product	Category	Material form	Working time	Cure temperature/referen ceconditions	Main bonding or repair application
EP8P11A-CP	Foaming core-splice adhesives	125°C foaming adhesive film	See technical data sheet	125±5°C/2.0±0.5 h	Core splicing in medium-temperatur esandwich structures
EP8P6-CP	Foaming core-splice adhesives	125°C foaming adhesive powder	See technical data sheet	125±5°C/2.0±0.5 h	Local powder application and filling at medium temperature
EP8P11-CP	Foaming core-splice adhesives	125°C unsupported foaming adhesive strip	See technical data sheet	125±5°C/2.0±0.5 h	Auxiliary strip placement, edge filling and splicing
EP8D4-P	Matched primers	High-temperature corrosion-resistant primer	See technical data sheet	Matched to the adhesive-film process	For EP814C-F; corrosion resistance and interface stability
EP8D9-P	Matched primers	120°C corrosion-resistant primer	See technical data sheet	Matched to the adhesive-film process	For EP824C-F; metal protection and bonding
EP8396	Composite repair	Two-component resin for wet lay-up	70-80 min	25°C/5-7 d; 65°C/3 h	Wet lay-up, patches and laminate repair
EP8956-INJ	Composite repair	Low-viscosity resin for injection repairs	120-180 min	INJ-120: room temperature; 150: 80°C; 180: 150°C	Controlled injection repairs of cracks and debonded areas
EP8960-FC	Composite repair	Lightweight filling and fairing material	50-70 min	20-30°C	Filling and local fairing in non-primary load-bearing areas
EP881-R	Composite repair	Two-component resin for wet lay-up	≥120 min	66°C/3 h+93°C/2 h (vacuum)	Composite manufacture, wet lay-up and field repair
EP882-FC	Composite repair	Two-component void-filling paste	Gel time ≥60 min	120°C/2.5 h	Filling repairs to voids, defects and local areas
EP883-FC	Composite repair	Two-component high-strength filling paste	Gel time ≥60 min	180°C/2.5 h; or 1 h at room temperature+180°C/ 1h	High-strength defect filling and repair in load-bearing areas

Selection priorities

First establish the substrates and service temperature, then the curing equipment, assembly cycle, bond-line thickness and load type. Catalogue data do not replace the official TDS or project validation.

Typical applications of AviBond aerospace adhesives



Structural adhesives

Honeycomb core

Composite repair

Number	Location	Bonding or repair task	Product
1	Fuselage skins, frames, beams and connectors	Adhesive bonding	EP8216 / EP8351-Q / EP8448
2	Wing skins, spars and stiffeners	Adhesive bonding	EP8309 / EP8360 / EP8394
3	Engine-nacelle honeycomb sandwich structures	Insert potting and local filling	EP8305 / EP8619 / EP8524
4	Composite skins and fairings	Local repair	EP8396 / EP8956-INJ / EP8960-FC
5	Hot areas near engine nacelles and pylons	Structural bonding	EP8392 / EP8394 / EP8934
6	Honeycomb in tailplanes, control surfaces and wing tips	Edge closure and local reinforcement	EP8305 / EP8619 / EP8524

General aircraft and typical-location illustration, unrelated to any customer's aircraft model. Actual material selection and processing require component-level validation.

General-purpose and low-temperature-curing structural adhesives, and medium-temperature heat-curing structural adhesives

Reliable joints depend on interface wetting, stability on vertical surfaces or in gaps, and developing sufficient strength within the production cycle. Product codes are highlighted in the brand colour for quick comparison across the table.

Product	Lap shear at 23°C / MPa	Peel / kN/m	Shear strength at different temperatures / MPa	Product characteristics
EP8216	28-32	Floating-roller peel 5-7	70°C:7-9; 82°C:4-6	Flexible, long working time
EP8309	31-34	T-peel 5.5-6.5	-55°C:31-34; 80°C:8-10	High peel strength and environmental resistance
EP8360	36-40	Floating-roller peel 7-9	-55°C:42-46; 120°C:12-14; 150°C:7-9	Thixotropic; suitable for thick bond lines
EP8351-Q	13-15	90° peel 2.7-3.3	Cure at 5-10°C: 1 h 1.0-1.6; 24 h 10-12.5	Low-temperature cure
EP8448	37-40	90° peel 7.5-8.5; floating-roller peel 8-9	120°C:24-27; 150°C:13-16; 200°C:3.5-5	One-component heat cure; hot/wet property retention

EP8448 thermal-ageing and composite-bonding data

Condition	23°C / MPa	120°C / MPa	150°C / MPa	200°C / MPa
Initial condition: 120°C / 90 min	37-40	24-27	13-16	3.5-5.0
Aged at 150°C / 200 h	36-39	25-28	15-17	-
Aged at 200°C / 200 h	33-36	-	10-12	3.0-4.5
After 70°C / 85% RH / 1000 h	44-47	-	-	-

Composite-joint performance

Composite joint	-55°C / MPa	23°C / MPa	80°C / MPa	100°C / MPa
0° laminate, bond-line thickness 0.1 mm	24-26	30-32	15-18	10-13
45° laminate, bond-line thickness 0.1 mm	16-18	16-18 (cohesive failure)	16-19 (cohesive failure)	13-15
0° laminate (wet condition)	-	35-38	23-26	10-13

Limits of the data

Assess shear and peel data together with substrates, surface preparation, bond-line thickness, cure conditions, test temperature and test method. Results from different peel methods cannot be converted directly.

Structural adhesive performance across broad and elevated temperature ranges

A heat-resistant structural adhesive must deliver predictable joint performance under actual temperature and load conditions, bond-line thicknesses and ageing conditions; a single high-temperature test point is insufficient.

EP8392: broad temperature range and multiple substrates

25°C/7 d

-196°C	-90°C	23°C	80°C	120°C	150°C	180°C
24-28	33-37	37-41	23-27	20-24	11-13	6-8

90° peel 7-9 kN/m; climbing-drum peel 100-115 N·mm/mm; sanded aluminium 27-31, TC4 titanium 35-39, bismaleimide composite 24-28 MPa.

EP8394: thixotropic, heat-resistant and adaptable to bond-line thickness

80°C/3 h

-55°C	23°C	80°C	120°C	150°C	180°C	200°C*
32-36	29-33	20-24	18-20	12-15	7-10	3-5

0.1/0.5/1/3 mm bond lines: 29-33/27-31/23-27/9-13 MPa; floating-roller peel 3.5-4.5 kN/m.

EP8934: high-temperature strength retention and compressive load capacity

25°C/7 d

-55°C	23°C	80°C	150°C	180°C	200°C	260°C*
25-29	22-26	22-26	14-16	12-14	10-12	2-4

Floating-roller peel 0.8-1.2 kN/m; compressive strength at 25°C 93-103 MPa.

High-temperature test points

200°C and 260°C are test points under specified conditions, not continuous service temperatures. Actual components still require creep, fatigue, thermal-ageing and temperature-cycling validation.

Performance dimension	EP8392	EP8394	EP8934
Temperature capability	Broad temperature range; multiple substrates	Property retention at medium to high temperatures	Load capacity at higher temperatures
Rheology and bond line	Moderate to low viscosity; focus on wet-out	Thixotropic; control thickness and sagging	Control bond line and sustained load
Durability validation	Temperature cycling and multi-substrate compatibility	Creep, thermal ageing and fatigue	Sustained loads, cycling and fatigue

Room-temperature-curing high-toughness structural adhesives

For assembly and repair of metal, composite, ceramic, foam and dissimilar-material joints. Balance wetting, peel performance, transparency, toughness and ease of application according to joint requirements.

EP8210: two-component toughened epoxy

General structural bonding of metals, non-metals, composites and ceramics

Material form	Cure conditions	Key properties	Working time
Two-component toughened epoxy	Room-temperature cure	Room-temperature shear 16.9-22.2 MPa	See technical data sheet

EP8370: two-component transparent, low-viscosity resin

Transparent bonding, low-viscosity impregnation and field repairs; balances strength and peel performance

Material form	Cure conditions	Key properties	Working time
Two-component transparent, low-viscosity resin	Room-temperature cure	Mean room-temperature shear ≥28 MPa; mean peel to GB/T 7122 ≥4 kN/m	See technical data sheet

EP8460: two-component high-toughness epoxy

Repairs to metal, wood, ceramics, foam and glass-fibre composites

Material form	Cure conditions	Key properties	Working time
Two-component high-toughness epoxy	Room-temperature cure	Room-temperature shear ≥17 MPa; peel to GB/T 7122 ≥4.3 kN/m	See technical data sheet

Differences in application

EP8210 is for general structural bonding; EP8370 suits transparent bonding and low-viscosity impregnation; EP8460 focuses on high toughness and peel performance.

Product	Recommended application	Typical substrates	Validation priorities
EP8210	General assembly and structural repairs	Metal/composite/ceramics	Bond-line thickness, shear and environmental durability
EP8370	Transparent joints and low-viscosity impregnation	Transparent parts/precision joints	Air removal, sagging and peel performance
EP8460	High-toughness repairs and peel-resistant joints	Metal/wood/foam/glass fibre	Impact, peel and low-temperature performance

Field application and validation sequence

Step	Operation	Control points
01	Surface preparation	Clean, roughen and control the time before bonding
02	Adhesive preparation	Weigh accurately, mix and remove air in accordance with the TDS
03	Assembly	Control bond line, positioning and clamping pressure
04	Cure	Record temperature, time and pressure-release stages
05	Validation	Inspect witness specimens, appearance and joint performance

Medium-temperature heat-curing structural adhesives

For production manufacture and heat-resistant load-bearing joints, with three-component thixotropic and one-component medium-temperature-curing systems. Suitable for panel-to-panel bonding, combined adhesive/riveted or adhesive/bolted joints, and gap filling.

EP8160-H: three-component thixotropic structural adhesive

Panel-to-panel joints, combined adhesive/riveted or adhesive/bolted joints, and gap filling

Material form	Cure conditions	Key properties	Working time
Three-component thixotropic structural adhesive	140±2°C/2 h	Pressure 0.05-0.10 MPa; room-temperature shear approximately 21.9 MPa	See technical data sheet

EP8H1-H: one-component medium-temperature-curing paste

High strength, ageing and fatigue resistance; suitable for load-bearing joints

Material form	Cure conditions	Key properties	Working time
One-component medium-temperature-curing paste	100°C/10 h, or 120°C/3 h, or 150°C/1 h	Room-temperature shear approximately 29.7 MPa; approximately 14.5 MPa at 150°C	See technical data sheet

EP8H2-H: one-component medium-temperature-curing paste

Structural bonding with high peel strength; suitable for lower-temperature medium-temperature cure processes

Material form	Cure conditions	Key properties	Working time
One-component medium-temperature-curing paste	130±5°C/2 h, or 150°C/1 h	Room-temperature shear ≥20 MPa; peel ≥3.5 kN/m (method: see TDS)	See technical data sheet

Process control

Establish bond-line thickness, assembly pressure, heating rate, dwell time and internal/external temperature differences in large components.

Product	Cure conditions	Suitable structures	Key processing points
EP8160-H	140±2°C/2 h	Panel-to-panel bonding and combined adhesive/mechanical joints	Three-component mixing; 0.05-0.10 MPa
EP8H1-H	100°C/10 h, or 120°C/3 h, or 150°C/1 h	Ageing- and fatigue-resistant load-bearing joints	Choose the process route to suit the equipment's capability
EP8H2-H	130±5°C/2 h, or 150°C/1 h	High peel strength; lower-temperature cure	Validate bond-line edges and peel performance

Production control

Step	Operation	Control points
01	Pre-treatment	Standardise roughness, cleanliness and the time before bonding
02	Adhesive application	Control mixing, adhesive quantity and bond-line thickness
03	Assembly	Apply uniform pressure and prevent slipping
04	Heat cure	Monitor actual component temperature and dwell time
05	Release for use	Witness specimens, non-destructive inspection and process records

High-temperature structural adhesives

Includes long-term thermal-ageing data at 200°C and short-duration heat-exposure data at 300°C. For heat-resistant metal structures, hot-end attachments and high-temperature repairs. High-temperature test points are not continuous component service temperatures.

EP810T-H: modified epoxy

High-temperature, load-bearing structural bonding of metals

Material form	Cure conditions	Key properties	Working time
Modified epoxy	180-200°C/2-4 h	Approximately 25.95 MPa at room temperature; approximately 10.82 MPa at 200°C; approximately 7.09 MPa at 300°C	See technical data sheet

EP820M-H: boron-phenolic-modified epoxy paste

Solvent-free, high-temperature-resistant structural adhesive for high-temperature metal bonding and fixing

Material form	Cure conditions	Key properties	Working time
Boron-phenolic-modified epoxy paste	175±5°C/3 h	Cure pressure 0.05-0.30 MPa; 23°C 13.84 MPa; 200°C 16.43 MPa; 300°C 3.11 MPa	≥5 h

EP826M-H: phenolic/acetal/silicone system

High-temperature metal structures and short-duration thermal shock

Material form	Cure conditions	Key properties	Working time
Phenolic/acetal/silicone system	180-200°C/2-4 h	Room temperature 24.65 MPa; 200°C 10.07 MPa; 300°C 4.93 MPa	See technical data sheet

EP8400-H: two-component, room-temperature-curing heat-resistant adhesive

Repairs to metals, ceramics, rigid plastics and glass-fibre composites

Material form	Cure conditions	Key properties	Working time
Two-component, room-temperature-curing heat-resistant adhesive	Room-temperature cure	Room-temperature shear ≥16 MPa; at 200°C ≥2 MPa	See technical data sheet

Limits of applicability

200°C and 300°C are performance test points for the respective materials under specified conditions, not direct equivalents of continuous component service temperatures.

Product	Room-temperature shear	High-temperature shear	Cure conditions and application range
EP810T-H	Approximately 25.95 MPa	Approximately 10.82 at 200°C; approximately 7.09 MPa at 300°C	180°C/3 h, 0.30 MPa; load-bearing metal structures
EP820M-H	13.84 MPa	200°C 16.43; 300°C 3.11 MPa	175±5°C/3 h; 0.05-0.30 MPa
EP826M-H	24.65 MPa	200°C 10.07; 300°C 4.93 MPa	180°C/3 h, 0.30 MPa; short-duration thermal shock
EP8400-H	≥16 MPa	200°C≥2 MPa	Room-temperature cure; high-temperature repairs and multi-material bonding

Adhesive films | Medium-temperature co-cure and low-temperature cure at 80°C

AviBond adhesive films are for large-area structural bonding of aerospace metals, composites and honeycomb sandwich structures. Preformed films help control bond-line thickness, improve lay-up consistency and reduce on-site mixing errors. Suitable for co-curing, secondary bonding and repair reinforcement.

EP8163-F: medium-temperature co-curing structural adhesive film

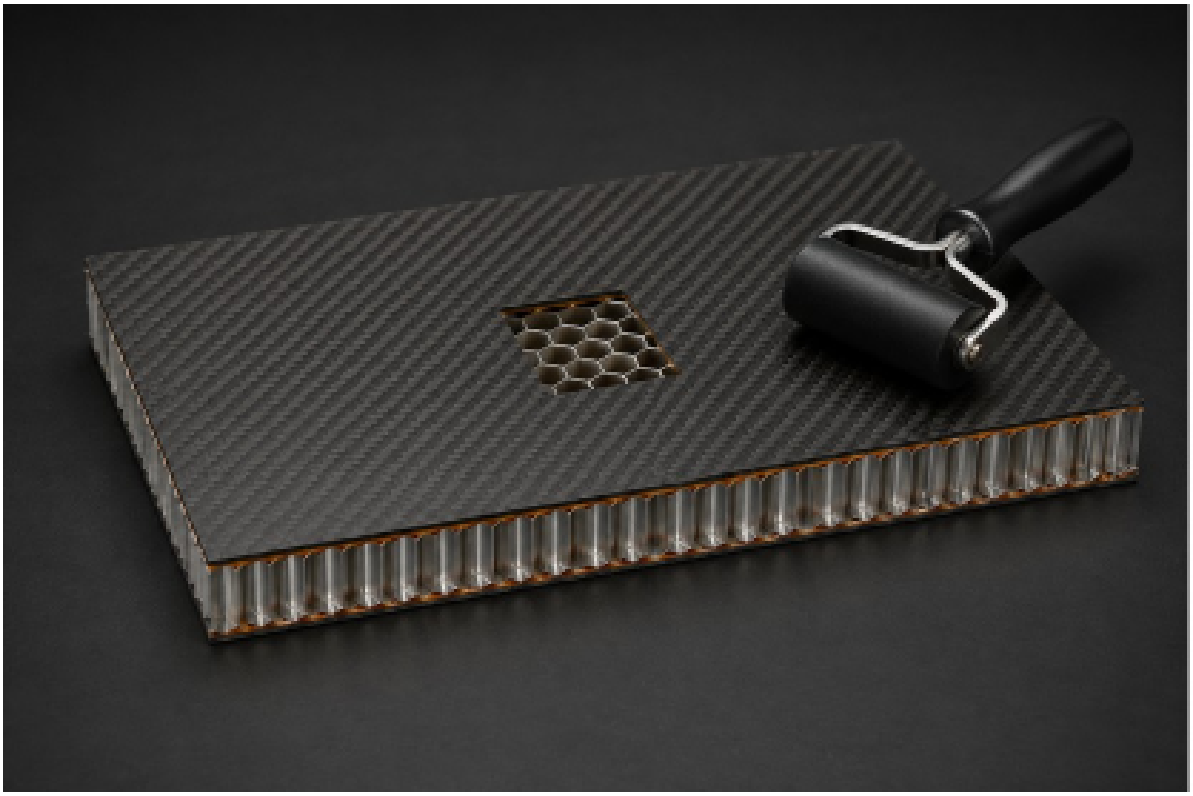
One-component epoxy adhesive film, typically 0.20-0.40 mm thick. For structural bonding of aluminium alloys, composites and honeycomb sandwich structures; cures at medium or high temperatures and can be co-cured with prepregs.

Benefits: uniform bond-line thickness, high shear and peel strength, suitable for large-area lay-up, co-curing and secondary bonding.

EP8696-F: structural adhesive film curing at 80°C

One-component, low-temperature-curing epoxy adhesive film, typically 0.18-0.22 mm thick. For structural bonding of composites, steel, aluminium alloys and other metal or non-metal substrates.

Benefits: lower-temperature cure and shear-strength retention from -55°C to 100°C. Suitable for secondary bonding, repair reinforcement and heat-sensitive components.



Typical property ranges

Property/test point	EP8163-F	EP8696-F
Typical film thickness	0.20-0.40 mm	0.18-0.22 mm
Tensile shear strength at 23°C	38-39 MPa	34-35 MPa
Low-temperature tensile shear strength	-	-55°C:28-29 MPa
High-temperature tensile shear strength	104°C:20-21; 149°C:10-11 MPa	80°C:22-23; 100°C:13-14 MPa
Floating-roller peel strength at 23°C	9-10 kN/m	5-6 kN/m
Honeycomb peel strength	Aluminium/aramid-paper honeycomb: 6-7 kN/m	-
Strength at 23°C after environmental conditioning	-	Good strength retention after salt-spray, water and fuel conditioning (conditions: see TDS)
Room-temperature out-time/reference cure	15-20 d; 115-125°C/60-90 min; can be co-cured	7-10 d; low-temperature cure at 75-85°C

The table gives typical reference ranges. Film out-time is the cumulative exposure at 25°C after removal from the specified cold-storage conditions, with the release liner retained and the material properly packaged. Add together all warming periods. Performance depends on substrates, surface preparation, film thickness or areal weight, cure pressure and test method. Use the latest TDS and project validation for actual applications.

175°C-class structural adhesive films

For large-area structural bonding of metals, composites and honeycomb sandwich structures. Stable adhesive areal weight and uniform bond-line thickness, with high shear and peel performance.

EP814K-F: modified epoxy adhesive film in multiple specifications

High strength and high peel strength; long room-temperature storage life

Material form	Cure conditions	Specification grade	Key features
Supported/unsupported	174°C/120 min	Grades I / II / III	Room-temperature storage >9 months

EP814M-F: modified epoxy adhesive film in multiple specifications

Multiple areal weights/thicknesses; suitable for metal and sandwich structures

Material form	Cure conditions	Specification grade	Key features
Supported/unsupported	174°C/120 min	I / II / IIA / III / IIIU / IIIM	Thickness 0.13-0.30 mm

Storage and out-time

Follow the official TDS separately for EP814K-F grades and storage conditions, and for EP814M-F support, thickness and room-temperature out-time.

Product	Grade/thickness	Main benefits	Selection guidance
EP814K-F	I / II / III	High strength, high peel strength and long room-temperature storage life	Clearly defined specification system for production manufacture
EP814M-F	I / II / IIA / III / IIIU / IIIM; 0.13-0.30 mm	Multiple areal weights, thicknesses and supports	Select according to bond-line thickness, curvature and lay-up method

Adhesive-film application sequence

Step	Operation	Control points
01	Storage	Cold storage, moisture protection and batch traceability
02	Warm-up	Warm while sealed, then open to prevent condensation
03	Lay-up	Place cut plies in the required orientation and remove trapped air thoroughly
04	Pressurisation	Apply uniform pressure with a vacuum bag or press
05	Cure	Record component temperature and dwell time

Matched adhesive-film and corrosion-resistant primer systems

Aerospace metal bonding quality depends on consistent surface preparation, primer dry-film thickness, flash-off time, film lay-up and cure, as well as the adhesive film itself.

EP814C-F + EP8D4-P: 175°C heat-resistant adhesive-film system

For high-temperature metal structural bonding; the primer improves corrosion resistance and interface stability.

Process conditions: cure the adhesive film to its 175°C-class schedule; control primer flash-off and the interval after pre-treatment according to the matched process.

Properties and application range: film thickness 0.25/0.35 mm; service at -55-175°C, with short-duration exposure at 200°C.

EP824C-F + EP8D9-P: 120°C high-peel-strength adhesive-film system

For honeycomb sandwich and metal structures; focuses on peel, fatigue and hot/wet property retention.

Process conditions: cure the film to its 120°C-class schedule; primer solids content approximately 10%, matched to metal surface preparation.

Properties and application range: type I 146±13 g/m²; type II 292±25 g/m²; service at -55-80°C.

Quality control

Record the interval after surface preparation, primer dry-film condition, air removal during film lay-up, pressure method and actual component temperature.

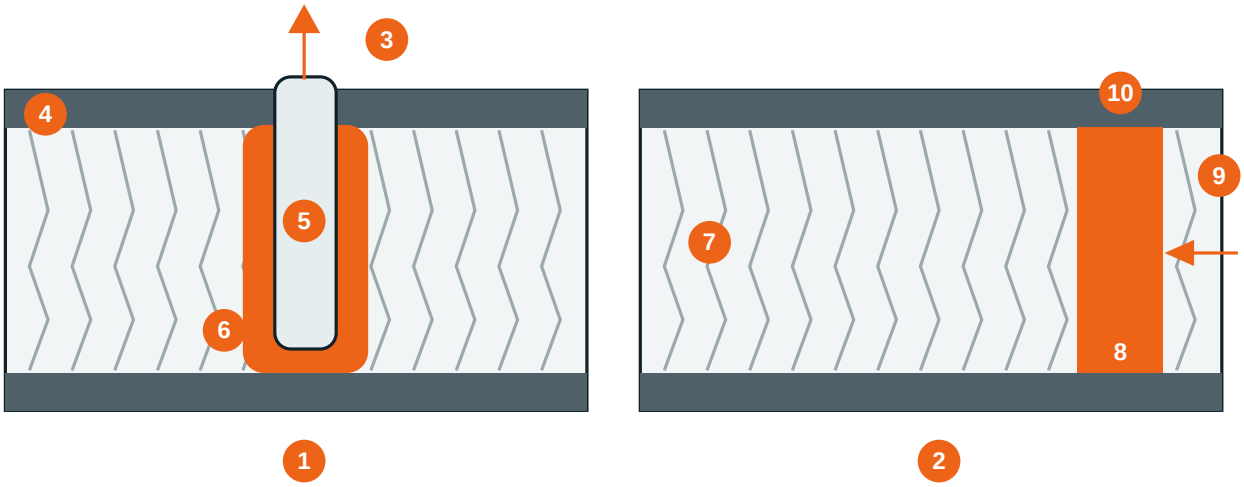
System	Adhesive-film cure	Application temperature	Main bonding task
EP814C-F + EP8D4-P	175°C class	-55-175°C; short-duration exposure at 200°C	Heat-resistant metal structures and high-temperature secondary bonding
EP824C-F + EP8D9-P	120°C class	-55-80°C	High-peel-strength honeycomb sandwich and metal structures

Metal-bonding process sequence

Step	Operation	Control points
01	Pre-treatment	Cleaning, roughening or chemical treatment
02	Primer	Control preparation, dry-film thickness and coverage
03	Flash-off	Control time and temperature according to the matched process
04	Film lay-up	Cut, position, remove trapped air and complete packaging
05	Cure	Record pressure and temperature, and inspect witness specimens

Honeycomb potting and core filling

Potting-compound quantity directly affects insert load transfer, edge-closure integrity, local compression resistance and component weight gain. Density and load capacity therefore need to be balanced by grade. EP8305, EP8619 and EP8524 provide three levels: high load capacity, balanced load capacity and weight reduction, and weight reduction first. They cover honeycomb insert potting, fastener reinforcement, edge closure and large-volume, lightly loaded filling. Validate honeycomb specifications, potting geometry, reaction exotherm, porosity and added weight in the actual application.



1. Local potting around inserts
2. Edge closure and core reinforcement
3. Local pull-out load
4. Upper and lower face sheets
5. Individual metal/composite insert
6. Low-density potting compound
7. Honeycomb-core side section
8. Edge potting through the full core height
9. Edge load
10. End closure strip overlapping the face sheets

Engineering illustration (not to scale): honeycomb cell axes are perpendicular to the upper and lower face sheets. The side section represents only core walls through the thickness.

Property	EP8305: high load capacity	EP8619: lightweight load-bearing grade	EP8524: weight reduction first
Density	0.84-0.92 g/cm³	0.66-0.72 g/cm³	0.44-0.50 g/cm³
Gel time at 25°C	90-110 min	25-35 min	70-90 min
Compression	83-95 MPa	45-55 MPa	17-22 MPa
Compressive modulus	2.7-3.1 GPa	1.9-2.3 GPa	1.1-1.5 GPa
Tensile shear	18-22 MPa	14-18 MPa	7-9 MPa
Water absorption after 24 h	0.2-0.4%	0.9-1.3%	1.5-2.0%

Property	EP8305: high load capacity	EP8619: lightweight load-bearing grade	EP8524: weight reduction first
Reference cure	25°C/7 d, or 177°C/1 h	25°C/7 d, or 52°C/5 h	25°C/7 d, or 52°C/5 h

Density, compression and tensile-shear data compare potting compounds' load capacity and added weight. Validate actual weight gain, exotherm, porosity and insert pull-out performance in the target honeycomb structure. Confirm fire/FST classification against the applicable standards and official reports.

165-175°C-class foaming and core-splice adhesives

For high-temperature honeycomb core-strip splicing, edge filling and gap compensation. Film products help control adhesive quantity; powders suit complex edges and local application.

EP8P1-CP: 165-175°C foaming adhesive film

Core-strip splicing, edge filling and gap compensation

Cure	Expansion	Density
165±10°C/2 h	1.7-3.5	0.40-0.65 g/cm³

EP8P1B-CP: 175°C foaming adhesive film

Core splicing in high-temperature sandwich structures

Cure	Thickness	Expansion
175±5°C/2.0±0.5 h	0.5/1.5/2.5 mm(±0.12)	1.5-3.5

EP8P3A-CP: 175°C foaming adhesive powder

Complex edges, local filling and powder application

Cure	Density	Form
175±5°C/2.0±0.5 h	0.40-0.65 g/cm³	Local powder application

EP8P3B-CP: 175°C foaming adhesive powder

High-temperature honeycomb core splicing and local reinforcement

Cure	System	Application
175±5°C/2.0±0.5 h	High-temperature foaming powder system	Core splicing and local reinforcement

Validation priorities

Splice width, adhesive quantity, expansion ratio, cured density, heating rate and sandwich restraint together determine splice quality.

Product	Material form	Key properties	Recommended application
EP8P1-CP	165-175°C adhesive film	Expansion 1.7-3.5; density 0.40-0.65 g/cm³	Splicing and edge filling with uniform gaps

Product	Material form	Key properties	Recommended application
EP8P1B-CP	175°C adhesive film	0.5/1.5/2.5 mm; expansion 1.5-3.5	Select film thickness to suit the splice gap
EP8P3A-CP	175°C powder	Density 0.40-0.65 g/cm³	Complex edges and local filling
EP8P3B-CP	175°C powder	High-temperature foaming powder system	High-temperature core splicing and local reinforcement

125-130°C-class foaming and core-splice adhesives

For large sandwich components with restricted cure temperatures. Available as film, paste, powder and unsupported strips; select according to core geometry and application location.

EP8P9-CP: 125°C foaming adhesive film

Core splicing and gap filling in medium-temperature sandwich structures

Cure	Expansion ratio	Areal weight
125±5°C/2 h	75%-150%	1900±200 g/m²

EP8P14-CP: 125-130°C foaming adhesive paste

Gap filling and splicing in curved or irregular areas

Cure	Density	Form
125±5°C/2 h	0.40-0.50 g/cm³	Local paste filling

EP8P11A-CP: 125°C foaming adhesive film

Core splicing in medium-temperature sandwich structures

Cure	System	Application
125±5°C/2.0±0.5 h	125°C-class foaming adhesive film	Medium-temperature core splicing

EP8P6-CP: 125°C foaming adhesive powder

Local powder application and filling at medium temperature

Cure	System	Application
125±5°C/2.0±0.5 h	125°C-class foaming adhesive powder	Complex edges and local filling

EP8P11-CP: 125°C unsupported foaming adhesive strip

Auxiliary strip placement, edge filling and core splicing

Cure	Thickness	Expansion
125±5°C/2.0±0.5 h	1.65±0.40 mm	1.75-3.0

Product	Form	Key properties	Recommended locations
EP8P9-CP	Adhesive films	Expansion 75%-150%; 1900±200 g/m²	Splicing straight or regular core strips
EP8P14-CP	Paste	Density 0.40-0.50 g/cm³	Curved or irregular areas and local gap filling
EP8P11A-CP	Adhesive films	125°C class	Core splicing in medium-temperature sandwich structures
EP8P6-CP	Powder	125°C class	Complex edges and local filling
EP8P11-CP	Unsupported strips	Thickness 1.65±0.40 mm; expansion 1.75-3.0	Edge filling and auxiliary strip placement

EP8396: low-viscosity composite repair and impregnation resin

A key risk in composite wet repairs is that the surface may appear wetted while dry areas remain inside the fibre bundles. Repair resins need low viscosity and adequate working time, together with cured adhesion, toughness, heat resistance and environmental durability. EP8396 is for carbon- or glass-fibre wet lay-up, scarf repairs, interlaminar impregnation and local reinforcement, with room-temperature and heated cure options.

Property	Typical value
Working time	70-80 min
Mixed viscosity	6.5-9.0 Pa·s
Density	1.15-1.20 g/cm³
Reference cure	25°C/5-7 d, or 65°C/3 h
Shear at 23°C / cure at 25°C/7 d	29-33 MPa
Shear at 23°C / cure at 65°C/3 h	33-37 MPa
Tg / 25°C/7 d	65-75°C
Tg / 65°C/3 h	100-115°C

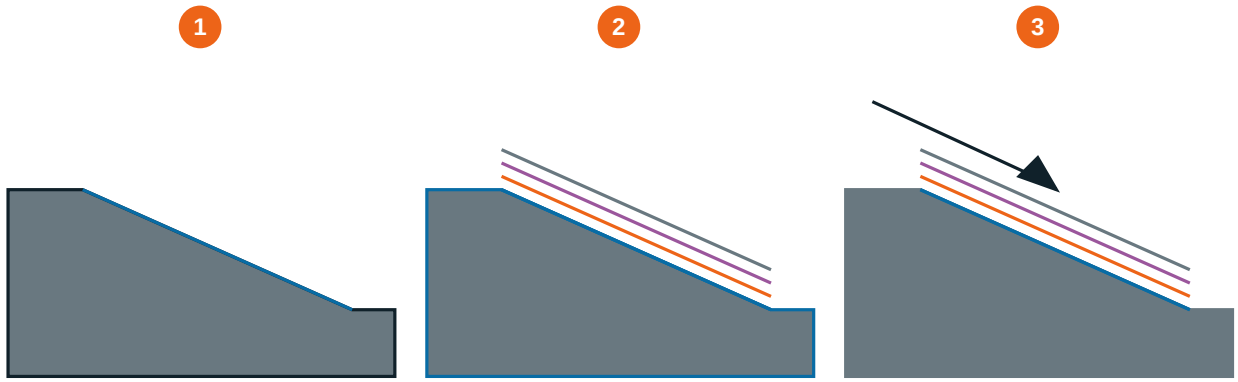
Bulk mechanical properties

Cure	Tensile strength MPa	Tensile modulus GPa	Elongation %	Compressive strength MPa	Flexural strength MPa	Flexural modulus GPa
25°C/7 d	65-75	3.0-3.3	3.5-4.0	85-100	95-110	2.8-3.1
65°C/3 h	65-75	2.8-3.2	4.0-4.5	95-105	100-115	2.6-3.0

Lap shear at different temperatures

Cure	-55°C	23°C	80°C	120°C	150°C	180°C
25°C/7 d	23-27	29-33	18-22	16-20	10-14	6-8
65°C/3 h	27-31	33-37	22-26	19-23	12-16	6-8

Repair process illustration



1 Remove damage and prepare the scarf

Damaged area removed

Retain the sound parent laminate

Continuous, clean scarf surface

2 Lay up repair plies in the original stacking sequence

Repair plies increase in size from the inside outwards

Restore the original stacking sequence in accordance with the approved structural repair procedure

Illustrated sequence: 0° / +45° / -45° / 90°

Actual orientations, ply counts and overlap dimensions must follow the repair documentation

3 Restore continuous load transfer after cure

Load transfer

Smooth transition between repair plies and sound parent laminate

Continuous surface; restored contour

Key controls

Damage boundaries, scarf ratio, fibre wet-out, resin content, air removal, vacuum level, cure schedule and non-destructive inspection.

Injection repairs and lightweight fairing materials

Cracks, narrow gaps and enclosed debonded areas require repair resin to enter restricted passages. Contour repair instead prioritises low density, formability and ease of sanding. Select materials separately for these different requirements. EP8956-INJ offers very low viscosity and long pot life for controlled injection into cracks, debonded areas and narrow gaps. EP8960-FC is a lightweight paste for filling, levelling and pre-paint fairing in non-primary load-bearing areas. Together with EP8396 wet lay-up resin, they cover open lay-up, enclosed-defect injection and contour finishing.

EP8956-INJ: very-low-viscosity injection repair resin

Viscosity	Pot life	Temperature grade
0.3-0.8 Pa·s	2.0-3.0 h	INJ-120 / 150 / 180

Graded cure routes: INJ-120 cures at room temperature; INJ-150 at 80°C; INJ-180 at 150°C. For controlled injection, local infusion and narrow-gap repairs.

Grade	Viscosity (Pa·s; test temperature: see note)	Pot life h	Specified test point (°C)	Shear strength at 25°C (MPa)	Shear strength at 120°C (MPa)	Shear strength at 150°C (MPa)	Shear strength at 180°C (MPa)	Peel at 25°C (kN/m)
INJ-120	0.3-0.8	2.0-3.0	120	≥25	≥10	-	-	≥3.0
INJ-150	0.3-0.8	2.0-3.0	150	≥25	≥15	≥10	-	≥2.0
INJ-180	0.3-0.8 (approximately 60°C)	2.0-3.0	180	-	-	≥15	≥10	≥2.0

INJ-180 viscosity is tested at approximately 60°C. Values preceded by ≥, including shear and peel, are minimum performance values under specified test conditions, not batch-variation ranges.

EP8960-FC: lightweight composite fairing and repair compound

Density	Pot life	Shear
0.45-0.50 g/cm³	50-70 min	5.2-7.0 MPa

For non-primary load-bearing levelling, filling and sandable fairing of composite surfaces such as fairings and radomes. Electrical properties and structural suitability require separate validation.

Property	Typical reference ranges
Compressive strength	14-18 MPa
Compressive modulus	0.42-0.70 GPa
ASTM D471 reference fuel B; mass gain	≤3.0%
MIL-PRF-7808 aircraft gas-turbine engine lubricating oil; mass gain	≤4.2%
Hydraulic oil; mass gain	≤8.0%
Distilled water; mass gain	≤4.1%

The table gives reference ranges under specified test conditions. For fluid-conditioning conditions, see the TDS. In actual use, assess damage boundaries, resin flow and containment, non-destructive inspection, sanding methods and coating compatibility together.

Composite lay-up and filling repairs

Wet lay-up, void-filling and high-strength filling products can be combined with EP8956-INJ injection repair resin and EP8960-FC lightweight fairing material for different types of damage.

EP881-R: two-component wet lay-up resin

Composite manufacture, wet lay-up and field repair

Material form	Cure conditions	Key properties	Working time
Two-component resin for wet lay-up	66°C/3 h + 93°C/2 h (vacuum)	Resin content of the matched laminate 44±4%; storage life controlled separately for components A/B	Gel time ≥120 min

EP882-FC: two-component void-filling paste

Filling repairs to voids, defects and local areas

Material form	Cure conditions	Key properties	Working time
Two-component void-filling paste	120°C/2.5 h	Density ≤1.6 g/cm³; compression ≥60 MPa; modulus ≥3 GPa	Gel time ≥60 min

EP883-FC: two-component high-strength filling paste

High-strength defect filling and repair in load-bearing areas

Material form	Cure conditions	Key properties	Working time
Two-component high-strength filling paste	180°C/2.5 h; or 1 h at room temperature + 180°C/1 h	Shear ≥10 MPa; compression ≥80 MPa; modulus ≥5 GPa	Gel time ≥60 min

Product roles

EP881-R is for wet lay-up and fibre impregnation; EP882-FC for voids and general defects; EP883-FC for high-strength filling in load-bearing areas.

Product	Recommended application	Working time/cure conditions	Validation items
EP881-R	Wet lay-up and fibre impregnation	Gel time ≥120 min; 66°C/3 h + 93°C/2 h (vacuum)	Resin content, porosity and interlaminar quality
EP882-FC	Voids and general defect filling	Gel time ≥60 min; 120°C/2.5 h	Compression ≥60 MPa; modulus ≥3 GPa
EP883-FC	High-strength defect filling in load-bearing areas	Gel time ≥60 min; 180°C/2.5 h	Compression ≥80 MPa; modulus ≥5 GPa

Repair application and inspection sequence

Step	Operation	Control points
01	Assessment	Establish damage extent, load path and repair classification
02	Removal	Remove material and scarf in accordance with the procedure while protecting sound plies
03	Lay-up/filling	Control mixing, wet-out, resin content and geometry
04	Cure	Record vacuum level, pressure and component temperature
05	Inspection and release	Complete visual, non-destructive and mechanical validation

EPTEK

Materials Shape Life

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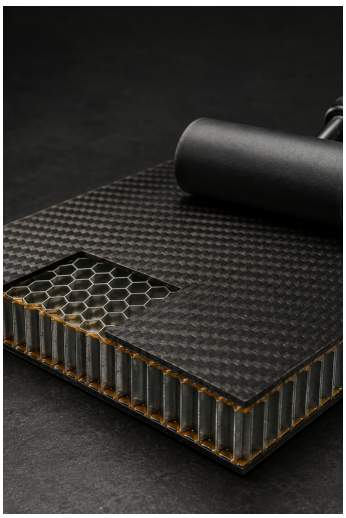
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