

Epo Bond Adhesive

Epoxy Adhesive & Putty Data Sheet

**High Performance Tensile Strength & Bonding Adhesion for
Heavy Duty Anchoring System on Concrete, Masonry, Stone, Timber or Steel Plate**

**5 Grades of Solvent-Free Epoxy Adhesive or Putty,
Epo Bond 3 Rapid, 200GP, 200HA, 100HPS & 110HTS**

**Ultra High Tensile, Peel, Shear & Loading Strengths
For Anchoring & Bonding only**

Two Component Epoxy Paste Adhesive

Key Properties Advantages

- * Suitable for Anchoring System
- * Suitable for All Types Bonding to Concrete
- * Suitable for Strip Laminates as Carbon Fiber & SMC Bonding
- * Ultra High Tensile Strength
- * Ultra High Shear Strength from 15 N/mm²
- * High Peel Strength (Cleavage Strength) from 4 N/mm²
- * Gap Filling, Non-Sagging up to 25.00 mm Thickness
- * Toughened Adhesive
- * Thixotropic
- * Properties of Good Curing, Glass Transition & Clamp Time
- * 5 Design of Curing Time for Standard, Slow & Fast Adhesive
- * Fire Resistance

Description

Epo Bond Adhesive is a two component, room temperature curing paste adhesive giving a resilient bond. It is thixotropic, ultra high for anchor tensile, bonding, loading, shear & cleavage strength and non sagging up to 25 mm thickness. It is particularly suitable for Anchoring Concrete to Steel Bars, Concrete bonding to Steel Plate, Concrete bonding to Carbon Fiber Laminates Strip, Concrete bonding to SMC Panel, Metal bonding to Metal, & Concrete bonding to Timber.

Processing Pretreatment

The strength and durability of the bonded joint or anchor are depending on proper treatment of the surfaces to be bonded. At the very least, joint surfaces should be cleaned with a good degreasing agent such as Acetone, Trichloroethylene or proprietary degreasing agent in order to remove all surfaces of oil, grease and dirt or by Air Spraying. Alcohol, gasoline (petrol) or paint thinner should never be used.

The strongest and most durable joint are obtained by either mechanically abrading or chemically etching (pickling) the degreased surfaces. Abrading should be followed by a second degreasing treatment.

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Application

The resin and hardener mix is applied with a Spatula Tools, to pretreated and dry joint surfaces. A layer of Adhesive from 0.50 mm to 25.00 mm thick normally imparts the greatest lap Shear Strength to the joint.

The joint component should be assembled and clamped as soon as the Adhesive has been applied. An even contact pressure throughout the joint area will ensure optimum cure.

Mechanical Processing

Specialist firm has developed metering, mixing and spreading equipment that enables the bulk processing of Adhesive. **LAMACO** will be pleased to advise customers on the choice of equipment for their parculars needs.

Property of Technical Data

Method of Test Result		HAS, Stainless Steel						
		Size of Anchor Rod and Int. threaded Sleeve						
		M8 X 110	M10 X 130	M12 X 160	M16 X 190	M20 X 240	M24 X 290	
N _{rec.}	Rec. Tensile Load in Concrete f _{cc} ≥ 30 N/mm ²	kN	4.8	6.3	9.5	12.1	20	25
V _{rec}	Rec. Shear Load in Concrete f _{cc} ≥ 30 N/mm ²	kN	4	6	9.5	13.3	21.7	32
d _o	Nominal Drill Bit Diameter Ø	mm	10	12	14	18	22	26
H ₁	Min hole Depth	mm	82	92	115	130	175	215
P	No. of Trigger Pulls		1	1	1	2	3	6
t _{fix}	Max. Fastenable Thickness	mm	14	21	28	38	48	54
T _{inst}	Tightening Torque when Fastening	Nm	15	30	50	100	160	240

Property of Technical Data

Method of Test Result		HIS-N, Stainless Steel						
		Size of Anchor Rod and Int. threaded Sleeve						
		M8 X 110	M10 X 130	M12 X 160	M16 X 190	M20 X 240	M24 X 320	
N _{rec.}	Rec. Tensile Load in Concrete f _{cc} ≥ 30 N/mm ²	kN	6.3	9.5	12.1	20	27.5	30
V _{rec}	Rec. Shear Load in Concrete f _{cc} ≥ 30 N/mm ²	kN	3.9	6.2	9	17	26.6	37.5
d _o	Nominal Drill Bit Diameter Ø	Mm	14	18	22	28	32	36
H ₁	Min hole Depth	Mm	92	115	130	175	215	275
P	No. of Trigger Pulls		1	1-2	2	4	7	8
t _{fix}	Max. Fastenable Thickness	Mm	-	-	-	-	-	-
T _{inst}	Tightening Torque when Fastening	Nm	15	28	50	85	170	250

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Method of Test Result			HAS, Stainless Steel Size of Anchor Rod and Int. threaded Sleeve					
			M8	M10	M12	M16	M20	M24
N _{rec}	Tensile Load	0°	7.4	9.9	14.1	20.6	37.4	53.9
	Tensile Load	30°	6.1	8.7	12.5	19.7	34.2	49.3
	Combine Load	45°	5.7	8.4	12.1	20.0	33.8	48.8
	Combine Load	60°	5.5	8.4	12.1	21.1	34.6	49.9
V _{rec}	Shear Load	90°	5.6	9.2	13.1	24.7	38.6	55.6

Remark: Recommended load [kN] in concrete with compressive strength of 25 N/mm², HAS anchor rods grade 5.8, overall safety factor $v = 3$ Concrete failure.

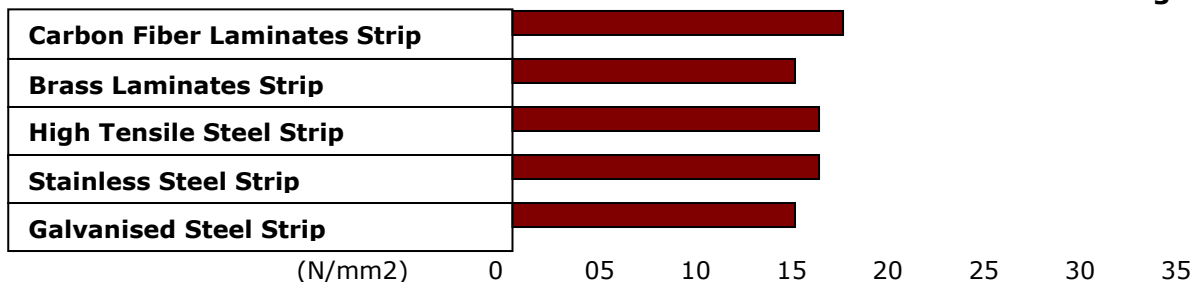
Times to Minimum Shear Strength

Temperature	°C	10	15	23	40	60	100
Epo Bond Adhesive Cure time to reach	Hours	21	13	6	2	-	-
Lap Shear Strength > 10 N/mm ²	Minutes	-	-	-	-	35	7

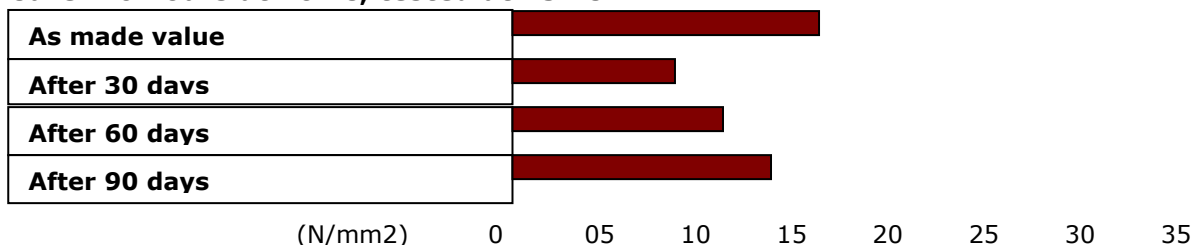
Typical Cured Properties Unless otherwise stated, the figures given below were all determined by testing standard specimens made by lap-jointing 170 mm x 25 mm x 1.50 mm strip of Carbon Fiber. The joint was 12.5 mm x 25 mm in each case.

The figures were determined with typical production batches using standard testing methods. They are provided solely as technical information and do not constitute a product specification.

Average of Lap Shear Strength of Typical Strip CFRP to Strip GFRP OR Metal to Metal Joint Cured for 16 hours at 40 °C and tested at 25 °C Pretreatment – Sand Blasting



Lap Shear Strength Versus Tropical Weathering (Typical Average Values) Cure: 16 hours at 40 °C, tested at 25 °C



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Appearance

Select Range of **"Epo Bond Adhesive"** grade of properties as below

Epoxy Adhesive Properties of Specification

	3 Rapid Set	200GP	200HA	100HPS	110HTS
Shear Strength	15 N/mm ²	15 N/mm ²	16 N/mm ²	17 N/mm ²	17 N/mm ²
Peel Strength (Cleavage)	4 N/mm ²	4 N/mm ²	4 N/mm ²	5 N/mm ²	5 N/mm ²
Tensile Strength at 35 °C	30 N/mm ²	30 N/mm ²	32 N/mm ²	32 N/mm ²	34 N/mm ²
Tensile Modulus	2.0 Gpa	2.0 Gpa	2.2 Gpa	2.5 Gpa	2.8 Gpa
Elongation at Break	4.40 %	4.40 %	4.00 %	3.80 %	3.50 %
Specific Gravity	1.4 [±0.10]	1.4 [±0.10]	1.4 [±0.10]	1.4 [±0.10]	1.4 [±0.10]
Sag Flow at 35 °C	<5.0mm	<5.0mm	>5.0mm	>12.5mm	>25.0mm
Shrinkage	0.04%	0.04%	0.04%	0.03%	0.03%
Glass Transition Point	> 67 °C	> 67 °C	> 67 °C	> 67 °C	> 67 °C
Open Time at 35 °C	<60-120 minutes	> 60-240 minutes	[for 4 grades of adhesive]		
Pot Life at 35 °C	<5-7 minutes	> 15-60 minutes	[for 4 grades of adhesive]		
Dielectric Constant	5.6 at 1 kNz (500v at 35 °C) [for 5 grades of adhesive]				
Colour (visual)	Neutral Paste [for 5 grades of adhesive]				
Coefficient of Expansion	9 x 10 ⁻⁶ per °C at 10°C - 40°C [for 5 grades of adhesive]				
Shelf Life / Storage	24 months in original packaging & stored at 5°C to 30°C				
Packing:	Small packing required on 10 ml set, 20 ml set, 40 ml set & 330 ml set 01 kg set, 02 kg set, 05 kg set, 10 kg set, 20 kg set & 40 kg set				

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