Repair

IMPACT-RESISTANT, TWO-PART, INSTANT ADHESIVE

TECHNICAL DATA SHEET

Revised October 2019

PRODUCT DESCRIPTION

Born2Bond™ Repair is a patented, gap-filling, instant adhesive and repair product with excellent adhesion to a very broad range of materials and surfaces. Repair is ideal for instant bonding and repairing, because it combines the strength of a structural adhesive with the speed of an instant adhesives. A tough polymer is achieved within a hardening time of under 10 minutes and the gel consistency enables application in any orientation.

KEY FEATURES

- → Fixture time in 60 seconds*
- → Hardens in 5-10 minutes*
- → Instant adhesion with high bonding strength
- → Low volume shrinkage : 4.3 %
- → Fills gaps of any volume
- → Bonds a large range of materials**
- → Machinable once hardened
- → Sandable
- → Paintable
- → Impact resistant
- → Gel consistency for precise application
- → Non sagging for vertical applications

DIRECTIONS FOR USE

1. Before applying Born2Bond Repair, make sure the surface is clean, dry and grease-free.
2. To use, Part A and Part B must be blended.
   - → Product can be applied directly from the syringe using the plunger supplied and dispensed through the recommended mixing nozzle.
3. Hold the syringe upright and insert the plunger.
   - → While keeping the syringe in an upright position, remove the cap, attach the mixing nozzle, and begin dispensing the adhesive upward until any bubbles present in the smaller component have been removed.
4. Dispense and discard a bead as long as the mixing nozzle, to ensure sufficient mixing.
5. Apply the mixed adhesive to one of the bond surfaces to be joined.
   - → Parts should be assembled immediately after the mixed adhesive has been applied.
   - → Bonds should be held by fixing or clamping until the adhesive has cured. Prevent assembled parts from moving during cure.
   - → The bond should be allowed to develop to full strength before being subjected to any service load (typically 24 hours).

APPLICATIONS

Typical applications for this product are aftermarket (side mirrors, bumpers, spoiler aprons) repairs, wood repair and reconstruction, rubber door bonding, automotive joint bonding.

STORAGE/SHELF LIFE

Optimal storage: 2°C to 8°C (35.6°F to 46.4°F). Storage below 2°C (35.6°F) or greater than 8°C (46.4°F) can adversely affect the product's properties. If stored properly, this product has a shelf life of 12 months from the packaging date.

HEALTH/SAFETY

The Safety Data Sheet is available on the Bostik website and should be consulted for proper handling, cleanup and spill containment before use. Keep containers covered to minimize contamination.

LIMITATIONS

This product is not recommended for use in pure oxygen and/or oxygen-rich systems and should not be selected as a sealant for chlorine or other strong oxidizing materials. Material removed from containers may be contaminated during use. Do not return product to the original container. Bostik will not assume responsibility for product that has been contaminated or stored under conditions other than those previously indicated. If additional information is required, please contact your local Technical Service Center or customer service representative.

*Depending on substrates. **Except polyolefins.

Always use glasses and gloves when applying adhesives.

Bostik smart adhesives BORN2BOND™

Repair

PRODUCT CHARACTERISTICS

Base Technology - Part A/B	Plasticizer
Components 1k - 2k	2k
Mix Ratio	4:1
Appearance/Color	Whitish
Gap Filling Capacity	Centimeters/Inches
Temperature Use Range	-40°C to 80°C (-40°F to 176°F)
Open Time	4 - 10 mins
Mixer Life	5 - 10 mins
VOC Content - Part A (ISO 11890-2)	92 g/L
VOC Content - Part B (ISO 11890-2)	15 g/L

UNCURED PHYSICAL PROPERTIES

Viscosity at 25°C (77°F)* - Part A	120000 - 170000 cP @ 1.5 rpm 6000 - 9000 cP @ 50 rpm
Viscosity at 25°C (77°F)* - Part B	70000 - 130000 cP @ 1.5 rpm 3000 - 7000 cP @ 50 rpm
Specific Gravity (ASTM D1875: 23°C / 73.4°F)	1.12 g/mL (A) 1.10 g/mL (B)
Refractive Index, ABBE	Opaque

*based on Brookfield viscometer

CURED PHYSICAL PROPERTIES

Shore Hardness D (ISO 868-2003)	67
Soft Point - HDT (ASTM E2092-18a)	54°C (129.2°F)
Tensile Strength (ISO 527)	14 MPa
Elastic Modulus (ISO 527)	1100 MPa
Elongation at Break (ISO 527)	12%
Glass Transition Temperature (ISO 6721)	86°C (186.8°F)
Coefficient of Linear Thermal Expansion (ISO 10545-8)	58×10^{-6}
Linear Shrinkage (ISO 10563)	4.3%
Water Absorption (after 24 hrs) (ASTM D-542)	0.9%
Impact Resistance (after 24 hrs) (ISO 9653)	14.7 kJ/m²
Electrical Properties of Resistivity IEC 60093	
Surface resistivity DC 500 V (Ohm)	$3.5 \cdot 10^{14}$
Volume resistivity DC 1kV (Ohm.m)	$3.2 \cdot 10^{13}$
Corrected Dissipation Factor, Dielectric Constant IEC 60250	
D @ 1 kHz	0.03
k' @ 1 kHz	2.58
D @ 1 MHz	0.02
k' @ 1 MHz	2.15
DC breakdown voltage according to IEC 60243-2	61 kV/mm

CONVERSIONS

(°C x 1.8) + 32 = °F
kV/mm x 25.4 = V/mil
mm / 25.4 = in
µm / 25.4 = mil
N x 0.225 = lb
N/mm x 5.71 = lb/in
N/mm² x 145 = psi
MPa x 145 = psi
N·m x 8.851 = lb·in
N·mm x 0.142 = oz·in
mPa·s = cP

FIXTURE TIME

Fixture Time* (0.1N/mm²)	
Stainless Steel (A316)	60 - 90 seconds
Steel (Mild Steel)	5 - 45 seconds
Aluminum (A5754)	10 - 60 seconds
Neoprene	20 - 50 seconds
EPDM	45 - 75 seconds
Rubber, nitrile	30 - 60 seconds
ABS	30 - 75 seconds
PVC	15 - 60 seconds
Polycarbonate	30 - 70 seconds
Phenolic	30 - 90 seconds
Wood (Oak)	135 - 170 seconds
Wood (Pine)	50 - 100 seconds
Chipboard	15 - 40 seconds
Leather	15 - 40 seconds
PC/ABS	30 - 75 seconds
Paper	5 - 15 seconds

*if stored in proper conditions

BONDING PERFORMANCE

Lap shear strength (ISO 4587) @ 23°C (73.4°F) (MPa)

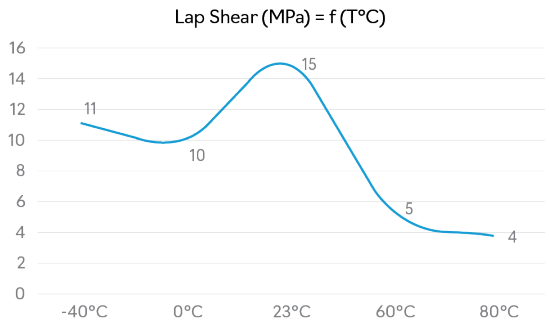
after 24 hours curing @ RT			
Grit-Blasted Mild Steel (GBMS)	14	+/- 1	
Aluminum (A5754)	3	+/- 1	
ABS	5	+/- 1	SF
PVC	8	+/- 1	SF
Phenolic	7	+/- 1	
Polycarbonate	8	+/- 1	SF

@ 100mm/min after 24h Curing at RT		
Nitrile	0.40	+/- 0.2
Neoprene	0.40	+/- 0.1

@ 2 mm/min after 1 week Curing at RT		
Grit-Blasted Mild Steel (GBMS)	15	+/- 1

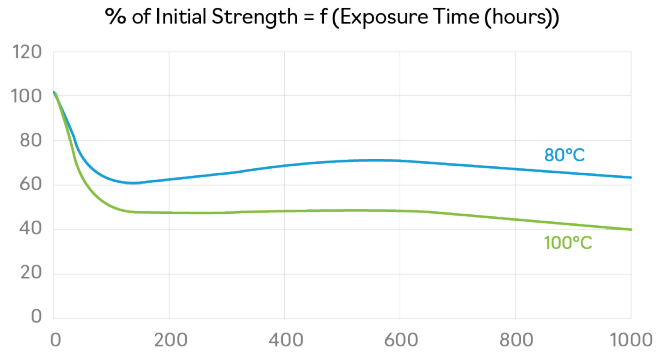
HOT STRENGTH

The graph below shows the adhesive performance on grit-blasted, mild steel (GBMS) at various temperatures. The adhesive was cured for one week at 22°C (71.6°F). The lap shear strength was tested according to ISO 4587. The strength test was performed in a climatic chamber that was set up for 30 minutes before testing at the indicated temperatures.



HEAT AGING

The graph below shows the heat aging results. The adhesive was aged at the temperature indicated, tested at 22°C (71.6°F) and cured for one week. The lap shear strength was tested according to ISO 4587 on grit-blasted, mild steel (GBMS).



CHEMICAL/SOLVENT RESISTANCE

Aged under conditions indicated and tested on GMBS.

% of Initial Strength vs. Exposure Time (hours) and vs. Type of Contaminant				
Testing on GMBS		% of Initial Strength		
ENVIRONMENT	TEMP	100 H	500 H	1000 H
Motor Oil	40°C (104°F)	82	79	68
Ethanol	23°C (73.4°F)	84	56	63
Gasoline	23°C (73.4°F)	82	72	82
IPA	23°C (73.4°F)	89	90	100
Water	23°C (73.4°F)	63	56	58

HEAT/HUMIDITY RESISTANCE

Aged under conditions indicated and tested @ 40°C (104°F).

% of Initial Strength vs. Exposure Time (hours)			
	% of Initial Strength		
ENVIRONMENT - 95% RH & 40°C (104°F)	100 H	500 H	1000 H
GBMS	58	49	18
Polycarbonate	75	70	64

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