

2-part acrylic adhesives

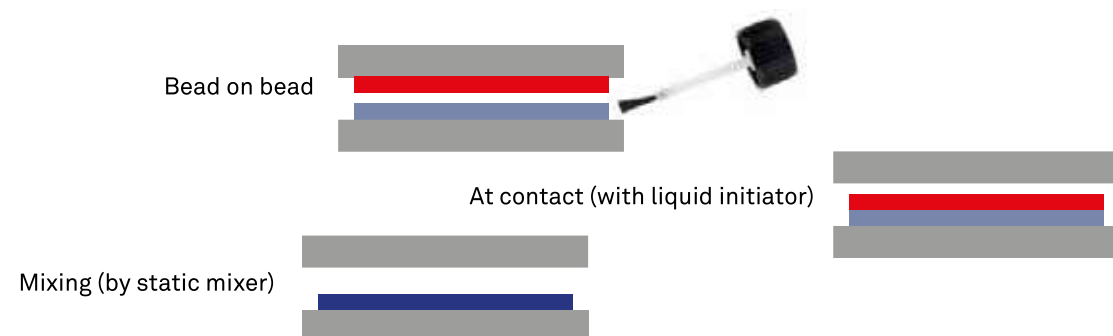
Loxreal 2k Acrylic Adhesives are tough, structural adhesives with high peel, impact and vibrations resistance. They are suitable for bonding different materials, such as steel, aluminum and other metals (even not properly degreased), magnets, ferrites, plastics and wood. They cure quickly at room temperature as soon as the parts are assembled and they develop their strength in a short time. 2k Acrylic Adhesives provide flexible solutions to engineers and manufactures allowing them to design the most suitable bonding process. They assure long-lasting bonding and good resistance to chemicals and high temperature.

BENEFIT:

- Fast curing.
- Suitable for materials with different thermal expansion coefficient.
- Shocks and vibrations resistant.
- Low odor grades are available.
- Greatly increase in design possibilities thanks to different application ways.



WAYS OF APPLICATION:



DIRECTIONS FOR USE:

- It is recommended to apply the adhesive on clean and dried surfaces. Clean the parts with Loxreal Cleaner 10 or other suitable solvent.
 - Surface treatments, suitable to the substrate, such as mechanical treatment (abrasion) or chemical treatment on metals improve the bonding durability and its mechanical strength.
 - Apply the adhesive on the surface:
 - In case of activated acrylics: Apply the adhesive on one substrate and the initiator on the other one (with gap higher than a 0.5 mm apply the initiator on both the substrates) with ratio (adhesive: initiator) 20:1.
 - In case of bead-on-bead acrylics: apply the A part on one surface and the B part on the A part bead (or on the other surface paying attention that during the assembly the beads match).
 - In case of mixing acrylics: mix the 2 parts paying attention to the mixing ratio by weight or volume given on the technical data sheet, in order to get a homogeneous color.
- Avoid to mix big quantities of product because the heat produced by the chemical reaction may be dangerous and cause loss of product.
- For automatic mixing, set the static mixer on the dual cartridge and apply the product, completely discarding the first 3/4 cm of the extruded product.



- Assemble the parts immediately after the product application and keep them mechanically still for the fixture time, typically from 1 to 5 minutes. Do not provide any mechanical stress until full polymerization is achieved.
- Wait for at least 24 hours before testing the joint strength.
- Excess of product can be removed with Acetone or any other solvent based cleaner compatible with the substrates. Application tools and dosing systems shall be cleaned before the product is hardened. Cured adhesive can be removed mechanically only.

SUBSTRATES:

- Ferrites
- Glass
- Ceramic
- Plastics
- Composites
- Steel
- Stainless steel
- Galvanized steel
- Aluminum
- Other metals

FOCUS ON MMA ACRYLICS

- Contain methyl-metacrylate
- Provide excellent performances with low or no surface preparation
- Versatile
- Toughened
- Resist the stresses of differential thermal contraction and expansion

HOW TO CALCULATE THE VOLUME OF ADHESIVE REQUIRED (ml)

ADHESIVE VOLUME (ml) = BONDING LINE THICKNESS (cm) x SURFACE TO BOND (cm²)

Example:

1ml covers 100 cm² surface with 0.1mm high adhesive layer

1l covers 1 m² di surface with 1mm high adhesive layer

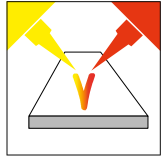
Theoretical quantity of adhesive (in weight) (g) = density (g/ml) x volume (ml)

Usage Estimator For Packaging

| | | 50 ml | 200 ml | 400 ml |
|---------------|--------|-------|--------|--------|
| Bead diameter | 1,2 mm | 40 m | 140 m | 280 m |
| | 2 mm | 13 m | 52 m | 104 m |
| | 3 mm | 6 m | 24 m | 48 m |
| | 6 mm | 1,5 m | 6 m | 12 m |

The listed values are intended as indicative only.

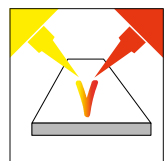




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| | GRADE | VISCOSITY (+25°C mPa.s) | CURING TIME | SHEAR STRENGTH (ISO 4587) (N/mm²) | PEEL STRENGTH (ISO 4578) (N/25 mm) | JOINT THICKNESS (mm) | DESCRIPTION |
|--------------|------------------|--|---|--|--|----------------------------|--|
| CONTACT | 30-55 (+Att. 20) | 15000 - 30000 THIXO | Handling 1-4 min Functional 30-60 min | 15 - 25 | 85 - 100 | 1 | Toughened, for bonding metals, ferrites, ceramic, wood, and some plastics. Fixing in few minutes, mixing not required. |
| | 3439 (+Att. 20) | 600 - 1000 | Handling 20-50 s Functional 10-20 min | 20 - 30 | 85 - 100 | 0,2 | Low viscosity, toughened, excellent to bond magnets, metals, ferrites, ceramic, and glass. Extremely rapid fixing, excellent high temperature resistance. |
| | 3459 (+Att. 20) | 15000 - 25000 THIXO | Handling 20-40 s Functional 10-20 min | 20 - 30 | 85 - 100 | 0,2 | High viscosity, to fill large gaps, toughened, excellent to bond magnets, metals, ferrites, ceramic, and glass. Extremely rapid fixing, excellent high temperature resistance. |
| BEAD ON BEAD | 33-47 (A+B) | 5000 - 12000 | Handling 1-3 min Functional 30-60 min | 8 - 20 | 45 - 65 | 0,5 | Toughened, with excellent performance on metals, ceramics, glass, wood and some plastics. Good impact, peel and shear strength. For applicative needs Part A can be used with In.18 and In.20. |
| MIXING | 3362 | 3000 - 6000 / 3000 - 6000 | Pot life 4-7 min Handling 10-12 min Functional 90-180 min | 20 - 25 | - | 1 | 2k, low viscosity, low odor. High resistance on plastics, even painted, metals, ceramic, composites and wood also for different substrates bonding. Excellent impact and peel strength. |
| | 3452 | 4000 - 5000 (A) 4000 - 5000 (B) | Pot life 2-3 min Handling 8-10 min Functional 60-120 min | 19 - 21 | - | 0,50 | 2k, low viscosity, low odor. Excellent impact and peel strength, metals, ceramic and fiberglass also at high temperature. |
| | 3460 | THIXO PASTE (A) 15000 - 30000 (B) | Pot life 3-4 min Handling 4-6 min Functional 2-4 ore | 10 - 15 (HDPE) | 120 | 1 | Very fast fixing and precise dosing. Excellent performances on untreated difficult-to-bond plastics, such as PE, HDPE, PP and PTFE. Contains microspheres for bonding-line control. |
| | 3461 | THIXO PASTE (A) 15000 - 30000 (B) | Pot life 5-8 min Handling 10-12 min Functional 8-10 h | 8 - 13 (HDPE) | 120 | 1 | Precise dosing, fixture time allows parts repositioning. Excellent performances on untreated difficult-to-bond plastics, such as PE, HDPE, PP and PTFE. Contains microspheres for bonding-line control. |
| | AC5465 | THIXO PASTE (A) 15000 - 30000 (B) | Pot life 5-7 min Handling 10-12 min Functional 10-12 h | 8 - 10 (HDPE) | 120 | 0,50 | Precise dosing, excellent performances on untreated difficult-to-bond plastics, such as PE, PP nylon and acetal resin also in combination with metals, composites, wood, rubbers. Suitable for 0-gap bonding between transparent substrates. |
| | AC5466 | THIXO PASTE (A) 10000 - 20000 (B) | Pot life 5-7 min Handling 13-16 min Functional 10-12 h | 8 - 10 (HDPE) | 120 | 1 | Precise dosing, no odor formulation, excellent performances on untreated difficult-to-bond plastics, such as PE, PP nylon and acetal resin also in combination with metals, composites, wood, rubbers. |
| | SUPERLOX | THIXO PASTE (A) 15000 - 30000 (B) | Pot life 5-7 min Handling 10-12 min Functional 10-12 h | 8 - 10 (HDPE) | 120 | 0,50 | Precise dosing, excellent performances on untreated difficult-to-bond plastics, such as PE, PP nylon and acetal resin also in combination with metals, composites, wood, rubbers. Suitable for 0-gap bonding between transparent substrates. Easy to use 25ml bi-syringe. |
| | AC5002 | 1000 - 7000 THIXO (A) 1000 - 7000 (B) | Pot life 2-3 min Handling 5-10 min Functional 20-25 min | 20 - 25 | 250 - 300 | 0,50 | Pink and green, low viscosity MMA. Multipurpose, very fast, excellent on metals, plastics, composites, ceramic. Resistant to impact, vibrations, thermal shocks. It can be applied using the static mixer or bead on bead. |
| | AC5004 | 80000 - 120000 THIXO (A) 8000 - 12000 (B) | Pot life 1-2 min Handling 5-10 min Functional 20-25 min | 18 - 20 | 45 - 50 | 3 | Transparent, medium viscosity MMA, for precise dosing. Excellent performances and aesthetic finishing on metals, plastics, stones, glass and ceramic. Very fast and resistant to impact, vibrations, thermal shocks. It can be applied using the static mixer or bead on bead. |
| | AC5007 | 3000 - 9000 (A) 1000 - 2000 (B) | Pot life 7-10 min Handling 15-20 min Functional 20-30 min | 20 - 30 | 200 - 250 | 0,50 | Medium viscosity MMA. It achieves quickly its final strength and thanks to its open time parts can be re-positioned. Excellent on a wide variety of substrates, such as metals, plastics and composites also with little or no surface preparation (above all on aluminum, stainless and galvanized steel). It can be applied by static mixer or bead on bead. |

| ACRYLIC ADHESIVE ACTIVATORS | INITIATOR 17 | INITIATOR 20 and 21 | INITIATOR 44 |
|---|--|---|---|
| Loxeal initiators for acrylic adhesives are used in combination with activated acrylic adhesives to start their polymerization. They don't contain solvents, and allow parts fixing in some minutes. Fixture time depends on the adhesive, on materials, temperature and gap. | Used in combination with 33-47M or other activated acrylics on plastic surfaces. | Used in combination with 30-55, 3439, 3459 to bond metal parts. It is suitable also with anaerobic adhesives. | Used in combination with activated acrylics adhesives to speed up the fixture time. |



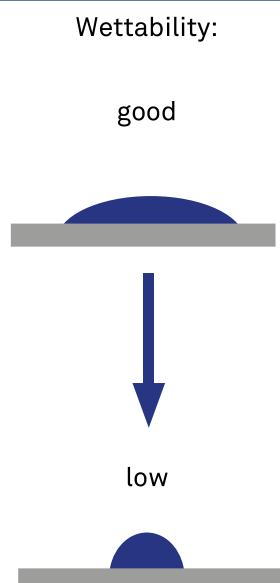
2-part acrylic adhesives

Acrylic adhesives specifically developed for difficult-to-bond plastics

Most difficult-to-bond plastics have low surface energy and low wettability, so that they require specific formulated adhesives.

Loxéal Adhesives range for low surface energy plastics (difficult-to-bond plastics, polyolefins, PTFE etc.) includes several grades with different features in order to satisfy different application needs and ensure outstanding performances on a wide variety of materials commonly known as “impossible-to-bond”. Moreover, Loxéal adhesives for difficult-to-bond plastics, do not require surface pre-treatments, ease the productive process in terms of time and costs, still providing high strength performances.

| Material | Surface Energy γ (mJ/m ²) | Wettability: |
|----------------|---|--------------|
| Copper | 1100 | good |
| Aluminum | 850 | |
| Glass | 290 | |
| Water | 73 | |
| Polycarbonate | 42 | low |
| PVC | 39 | |
| POM (acetalic) | 36 | |
| Polyethylene | 31 | |
| Polypropylene | 29 | |
| PTFE | 18 | |



Tips for difficult to bond plastic

- ◀ Surface abrasion does not improve adhesion.
- ◀ Removing dirt and contaminants maximizes performances. We recommend to use Isopropyl Alcohol or any suitable solvent.
- ◀ Adhesion on plastics also depends on reinforce fibers (if present, according to material and percentage).

SUBSTRATES:

- ◀ PE
- ◀ HDPE-LDPE
- ◀ UHMWPE
- ◀ PP
- ◀ Teflon PTFE (3460, 3461, AC5465)
- ◀ EVA
- ◀ Nylon (AC5465, AC5466)

- ◀ Acetal resin POM (AC5465, AC5466)
- ◀ PMMA (AC5465)
- ◀ PBT
- ◀ TPU
- ◀ PU
- ◀ GFRP
- ◀ CFRP
- ◀ PC
- ◀ ABS

- ◀ PVC
- ◀ PET, PETG
- ◀ EPDM
- ◀ NBR
- ◀ Polystyrene
- ◀ Leather (AC5465)
- ◀ Paper (AC5465)
- ◀ Wood
- ◀ Metals

RECOMMENDED APPLICATIONS

Home appliances

- ◀ To bond plastic parts on fridges, coffee machines, robot vacuum, etc.



Furniture

- ◀ Design furniture for indoor and outdoor
- ◀ Outdoor railings



Thermohydraulic

- ◀ Sealing:
 - Plastic hydraulic pipe fittings
 - Cap/bottom in plastic condenser
 - PP/EPDM alloy gaskets
 - Bath/shower drain systems



Automotive industry

- ◀ Interiors, bonding boards and applied parts (also leather)
- ◀ E-mobility: plastic battery case and recharging systems



Sport equipment

- ◀ Padel racket
- ◀ Mountain poles
- ◀ Kayak (bonding details on the body)
- ◀ Paddles



Others

- ◀ Sliding guides (PTFE, Polizene-PE+steel)
- ◀ Goggles (acetal)
- ◀ Toys
- ◀ Urethane rubber end caps of polyethylene batons

