## Description

ADINOX® C306 is a low-viscosity instant adhesive formulated for rapid bonding of rubbers, plastics, leather, and metals. Its extremely fast cure time makes it ideal for assembling pre-assembled parts and bonding low surface energy substrates. Complies with military specification MIL-PRF-46050 Type II Class 1 (formerly MIL-A-46050C).

## Physical Properties — Liquid (Uncured)

| Property | Value |
|---|---|
| Appearance | Colorless liquid |
| Viscosity (Brookfield) @ 25 °C (77 °F), Spindle 1 @ 20 rpm | 25 – 40 cP |
| Specific gravity | 1.06 g/cc |
| Flash point (TCC) | 185 °F |
| Shelf life (refrigerated, unopened) | 12 months |

## Curing Mechanism

Moisture present on the surface initiates the curing process. The adhesive will continue curing for at least 24 hours to develop full strength. Handling resistance is achieved in a short period and may vary depending on environmental conditions and the substrates being bonded.

## Cure Performance

The adhesive layer thickness affects cure speed. Gaps slow down curing. Activators may be applied to improve cure speed, although they may impact the overall performance of the adhesive. Recommended bond gap: 0.001 – 0.005 in (25 – 125 µm).

## Physical Properties — Cured

| Property | Value |
|---|---|
| Appearance | Solid, colorless |
| Softening point | 329 °F |
| Refractive index | 1.49 |
| Lap shear strength (carbon steel/carbon steel) | 3,190 PSI |
| Service temperature range | -65 to 199 °F |
| Full cure time | 24 hours |
| Dielectric strength | 11.6 KV/mm |
| Dielectric constant (@1 kHz) | 5.4 |
| COE | 2.27 × $10^{-4}$ mm/mm/°C |
| Solubility | Nitromethane, acetone, dimethylformamide |

## Cure Times by Substrate

Conditions: 23 °C (73 °F), 50% RH. Time to handling strength. Fixture time is defined as the time required to achieve a shear strength of 0.1 N/mm².

| Substrate | Time |
|---|---|
| Pine | 2 – 5 sec |
| PVC | 3 – 7 sec |
| Neoprene | <6 sec |
| Carbon steel | 5 – 12 sec |
| ABS | 5 – 13 sec |
| Aluminum | 7 – 14 sec |
| Polycarbonate | 10 – 25 sec |

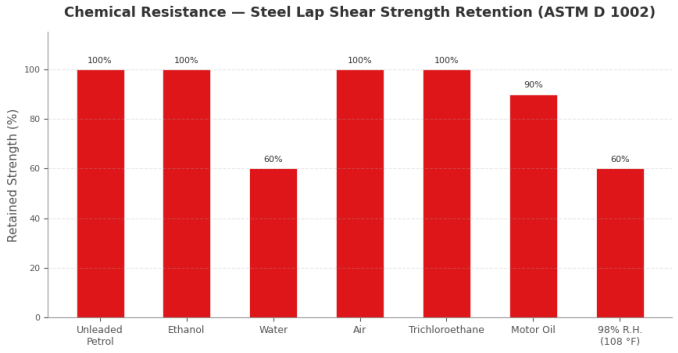
## Lap Shear Strength (ASTM D 1002 / ISO 4587)

Tensile shear strength after 48 hours at 23 °C (73 °F).

| Substrates | Strength (PSI) |
|---|---|
| Carbon steel / Carbon steel | 2,610 – 3,625 |
| Aluminum / Aluminum | 1,595 – 2,465 |
| Neoprene / Neoprene | > 1,450 |
| PVC / PVC | > 870 |
| ABS / ABS | > 725 |
| Polycarbonate / Polycarbonate | > 725 |

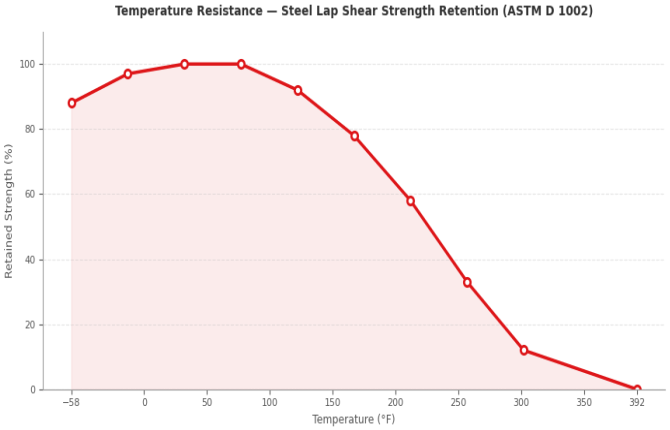
## Chemical Resistance

Specimens exposed for 6 weeks at 23 °C (73 °F) after full cure of the adhesive. Carbon steel / Carbon steel (ASTM D 1002). Bond gap: 0.05 mm. Cure: 7 days at 23 °C (73 °F). Percentage of retained strength.



## Temperature Resistance

Test on carbon steel (ASTM D 1002), cured 24 h at 23 °C (73 °F), conditioned 1 h at test temperature. Percentage of retained strength.




## Directions for Use

- The surfaces to be bonded must be clean and free of grease.
- Apply the adhesive to one of the surfaces to be bonded. Do not use tools to spread the adhesive.
- Assemble the parts immediately. Position with precision, as only a brief adjustment time is available.
- Hold the assembly firmly in place until the adhesive has set.
- Allow the product to develop full strength before subjecting to operational loads (24 to 72 hours depending on gap, materials, and conditions).

## Storage and Shelf Life

| Parameter | Value |
|---|---|
| Optimum temperature | 36 – 50 °F (refrigerated) |
| Maximum temperature | 77 °F |
| Shelf life (unopened, refrigerated) | 12 months |

Refrigeration at 39 °F provides optimum storage stability. Store in original sealed container, away from moisture sources. Prolonged exposure to direct light may affect product performance.

## Standard Packaging

| Content |
|---|
| 20 g (0.71 oz) |
| 50 g (1.76 oz) |
| 454 g (1 lb) |

## Cleaning

| Condition | Method |
|---|---|
| Uncured (immediate) | Acetone or specialized remover. |
| Cured | Specialized remover or mechanical removal. |
| Skin contact | Soak in warm soapy water. Do NOT force apart. |

## Precautions

- Not recommended for use with pure oxygen and/or oxygen-rich systems.
- Do not use as a sealant for chlorine or other strong oxidizers.
- Avoid contact with eyes and skin — instant bonding.
- Use in well-ventilated areas — vapors are irritating to eyes and respiratory tract.
- In case of eye contact: flush thoroughly with water and seek medical attention.
- In case of skin bonding: soak in warm soapy water, do NOT force apart.
- Refer to the Safety Data Sheet (SDS) for complete hazard information.

## Test Methods

| Standard | Description |
|---|---|
| ASTM D 1002 | Standard test method for apparent shear strength of single-lap-joint adhesively bonded metal specimens by tension loading. |
| ISO 4587 | Adhesives — Determination of tensile lap-shear strength of rigid-to-rigid bonded assemblies. |
| MIL-PRF-46050 | Military specification for instant-cure adhesives, Type II (low viscosity), Class 1 (general purpose). |

## Pre-Testing Recommendation

The end user is solely responsible for verifying the performance of ADINOX® C306 under actual production conditions prior to committing to series use. The following validation steps are strongly recommended:

- Bond the actual substrates under the surface conditions and contamination levels expected in the production environment.
- Measure joint strength under the relevant mechanical load modes (shear, tension, peel).
- Evaluate performance across the full intended service temperature range.
- If long-term durability is critical, conduct accelerated aging tests including thermal cycling and chemical immersion.

- Confirm that the adhesive joint design meets all applicable structural integrity requirements.

## Legal Information and Disclaimer

### Limitation of Warranty

The technical data and guidance contained in this Technical Data Sheet are derived from laboratory tests conducted under controlled conditions and are provided for informational purposes only. They are not intended as design specifications. Given the inherent variability in storage conditions, handling practices, application techniques, substrate types, surface preparation, and end-use environments, ADINOX makes no representations or warranties, express or implied, with respect to this information, including any implied warranty of merchantability or fitness for a particular purpose.

The end user assumes full responsibility for evaluating the suitability of ADINOX® C306 for any proposed application under the intended service conditions. All products purchased from or supplied by ADINOX are subject to the terms and conditions of the applicable purchase agreement.

In no event shall ADINOX's total liability, whether in contract, tort, or any other basis, exceed the purchase price of the specific product that is the subject of the claim.
ADINOX does not warrant that the use of its products will not infringe patents or other intellectual property rights of third parties. Compliance with all applicable laws, regulations, and patent obligations is the sole responsibility of the end user.

## Units of Measurement and Glossary

### International System / Imperial Equivalences

| SI Unit | Imperial Equivalent |
|---|---|
| 1 MPa | = 145.04 PSI |
| 1 PSI (lb/in²) | = 0.00689 MPa |
| 1 N/mm² | = 1 MPa = 145.04 PSI |
| 1 mm | = 0.0394 in |
| °C to °F | °F = (°C × 9/5) + 32 |

### Glossary of Abbreviations and Terms

| Abbreviation / Term | Meaning/Definition |
|---|---|
| cP / mPa·s | Centipoise / Millipascal-second (viscosity) |
| TCC | Tag Closed Cup (flash point test) |
| COE | Coefficient of thermal expansion |
| KV | Kilovolt |
| SDS | Safety Data Sheet |
| Moisture curing | Polymerization initiated by trace moisture on the substrate surface. |
| Dielectric strength | Maximum voltage per unit thickness a dielectric material can withstand. |
| Softening point | Temperature at which the cured adhesive begins to lose rigidity. |