



# Redux® 308A-NA

## Modified epoxy film adhesive

### Product Data

#### Description

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Redux® 308A-NA is a high-strength, flow-controlled film adhesive with flexible cure schedules at 300°F or 340°F. Redux® 308A-NA contains glass beads that give good flow control. It is suitable for metal to metal and structural sandwich bonding applications where operating temperatures of up to 250°F may be experienced.

#### Features

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- Flexible curing schedule: 300°F or 340°F
- 300°F cure gives excellent peel performance
- 340°F cure gives excellent lap shear performance
- Good structural performance to 250°F
- Excellent environmental resistance
- Glass beads ensure glue line thickness control
- Low volatile content (solventless process)

#### Applications

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- Metal to metal bonding
- Structural sandwich constructions

#### Forms

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Gray unsupported epoxy film with a paper release backing and a polyethylene interleaving

Product Description	Areal Weight psf	Roll Width in.	Standard Roll ft <sup>2</sup>
Redux® 308A-NA	0.06	21	430

#### Instructions For Use

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##### Pretreatment

It is essential that all substrates to be used are free of contamination and are in as ideal a state for bonding as possible. As pretreatment varies significantly depending on the substrates used, please refer to the Hexcel publication, Redux® Bonding Technology, for optimum procedures.

If there is to be a delay between the pretreatment and bonding of aluminum, the pretreated surface should be protected with Redux® 108 surface pretreatment protection solution to conserve the optimum bonding surface. This will enable bonding to be delayed for up to 2 weeks without deterioration of the pretreated surface. The correct application of Redux® 108 should not alter the bonding performance of Redux® 308A-NA (for full application details consult the relevant data sheet).

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**Application**

1. Allow sufficient time for the adhesive to warm to room temperature (60°F-80°F) before removing the protective polyethylene.
2. Cut the film to the shape and size required.
3. Remove the release paper and position the adhesive on the prepared bonding surface.
4. Remove the polyethylene backing sheet.
5. Complete the joint assembly and apply pressure while the adhesive is being cured. For sandwich structures the pressure application should be selected to suit the type of core used. After the adhesive has cured it is advisable to maintain pressure on the bonding assembly until it has cooled sufficiently to be handled without discomfort.

**Curing**

Redux® 308A-NA should be cured at 300°F or 340°F for 60 minutes to obtain optimum peel and shear properties respectively. Enough time should be allowed for heat to penetrate through the assembled parts to ensure that the adhesive reaches that temperature before timing starts. Cure pressures of around 25-50 psi and heat up rates of up to 5°F per minute are recommended during cure. After curing it is recommended that components are cooled to below 160°F before releasing the pressure.

**Mechanical Properties**

All the performance values given in this data sheet are based on experimental results obtained during testing under laboratory conditions. They are typical values expected for Redux® 308A-NA prepared and cured as recommended and under the conditions indicated. They do not and should not constitute specification minima.

**Metal Bonding Strengths**

Redux® 308A-NA at areal weight 0.06 psf was used to bond Alclad 2024-T3 aluminum test specimens; the aluminum was pretreated in accordance with DTD 915B (ii) [chromic/sulphuric acid pickling]. The honeycomb tests used Hexcel's 7.9-1/4-40 (5052) T aluminum honeycomb.

Test	Test Temperature (°F)	Redux® 308A-NA 0.06 psf
Lap Shear Strength psi	70 160 250	6700 5800 2900
Bell Peel lbs/in	70	58
Climbing Drum Peel In-lb/3in	70	75
Flatwise Tensile psi	70	1200

### Storage

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Redux® 308A-NA has been formulated for maximum storage life consistent with its high performance. Certain precautions, however, will help to enhance that storage life as follows:

1. When stored at room temperature (less than 80°F) it should be kept on a horizontal mandrel passed through the tube core on which the roll is wound. This avoids the risk of local thinning of the film under the weight of the roll.
2. When storing under refrigeration the original packaging should be retained if possible. When returning to the refrigerator after use, it is essential to protect the film with a water vapor barrier packaging material such as polyethylene.
3. On withdrawal from the refrigerator the water vapor barrier packaging should not be removed until the roll of adhesive has reached room temperature. This may take up to 24 hours depending on the size of the roll and the temperature involved (failure to observe this will result in the film becoming damp).
4. The film should be handled with care while in the frozen state since it will be brittle and easily cracked.

Redux® 308A-NA has a storage life of 18 months from manufacture at 0°F plus an additional open life of 2 months when stored below 80°F.

### Volatile content

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Redux® 308A-NA has a very low volatile content, usually well below 1%. In practice, the loss in weight when cured is negligible and emission of volatile products is not of practical significance.

### Associated Products

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Redux® 108 surface pretreatment protection solution (primer)  
Redux® 208 foaming film adhesive

### Handling and safety precautions

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In common with all Redux® adhesives in film form, Redux® 308A-NA is particularly free from handling hazards for the following reasons:

- Film is covered on both sides by protective release paper and polyethylene sheet which are not removed until final component assembly. It should be cut to shape before removing the protective coverings and virtually no handling of the film is necessary.
- Virtually tack-free (dry) at normal room temperature. The film is dependent on elevated temperature for wetting-out the adherend surfaces.
- Volatile-free at normal room temperature
- Splash-free, leak-free, spillage-free

However, the usual precautions necessary when handling synthetic resins should be observed. A Material Safety Data Sheet for Redux® 308A-NA is available on request.



**Release Certification**

The Quality System at Hexcel Composites Duxford has been certified to ISO 9001 by Lloyd's Register Quality Assurance, and is approved by the UK Civil Aviation Authority and Ministry of Defense. Certificates of Conformity and Test Reports can be issued for batches of Redux® 308A-NA on request.

**Important**

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Hexcel Corporation believes, in good faith, that the technical data and other information provided herein is materially accurate as of the date this document is prepared. Hexcel reserves the right to modify such information at any time. The performance values in this data sheet are considered representative but do not and should not constitute specification minima. The only obligations of Hexcel, including warranties, if any, will be set forth in a contract signed by Hexcel or in Hexcel's then current standard Terms and Conditions of Sale as set forth on the back of Hexcel's Order Acknowledgement.

**For More Information**

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- Carbon Fiber
- RTM Materials
- Honeycomb Cores
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- Structural Film Adhesives
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- Engineered Core
- Reinforcement Fabrics

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