



# Redux® 382H

Film adhesive

## Product Data

### Description

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Redux 382H is a 120°C curing modified epoxy film adhesive available in both supported and unsupported versions. Redux 382H is a versatile adhesive system suitable for bonding a wide variety of substrates with various temperature cure cycles.

### Features

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- Superior bonding capability on substrates with high moisture contents.
- Low volatile content allows use with perforated and non-perforated core materials.
- Excellent environmental resistance when tested to US-Military Specification MMM-A-132.
- Handling characteristics minimise shop handling and lay up times. Meets requirements of US Specifications:

MMM-A-132  
MIL-A-25463  
ASTM-E865-82.

### Applications:

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- Redux 382H is adaptable to high and low temperature cure cycles normally associated with large scale metal to metal and sandwich panel bonding.
- Redux 382H gives superior mechanical properties on metal, wood and paper substrates.

### Forms

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Straw-coloured, light tack, flexible film adhesive available supported or unsupported (Redux 382HU).

Product Description	Areal Weights g/m <sup>2</sup>	Roll Width mm	Standard Roll m <sup>2</sup>
Redux 382H	150	1250	62.5
Redux 382H	300	1250	62.5
Redux 382HU	300	1250	62.5



# Redux 382H

## Instructions For Use

### 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 Composites publication Redux Bonding Technology for optimum procedures.

If there is to be a delay between the pretreatment and bonding of aluminium, the pretreated surface should be protected with Redux 112 or Redux 140 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 112 or Redux 140 should not alter the bonding performance of Redux 382H (for full application details consult the relevant data sheet).

### Application

1. Allow sufficient time for the adhesive to warm to room temperature (15°C - 27°C) before removing the protective polythene.
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 polythene 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 bonded assembly until it has cooled sufficiently to be handled without discomfort.

### Curing

Redux 382H should be cured at 120 ± 5°C for 60 minutes, at 135°C for 30 minutes, or at 100°C for 3 hours to obtain optimum properties. 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 100 - 350 kPa and heat up rates of approximately 3°C per minute are recommended during cure. After curing it is recommended that components are cooled to below 60°C before releasing the pressure.

## Mechanical Properties

The data represents average properties of Redux 382H at 300 gsm when cured at 120°C for 60 minutes at 175kPa per MMM-A-132 and MIL-A-25463

Test	Test Temperature °C	Redux 382H
Lap Shear Strength MPa	-55	31
	22	35
	82	27
	100	18
Lap Shear after following exposures (MPa): 30 days in tap water 30 days at 50 °C (95% rH) 30 day salt spray	22	33
	22	33
	22	34
Climbing Drum Peel N/75mm	-55	390
	22	530
	82	460
Flatwise Tensile MPa	-55	7.7
	22	8.3
	82	5.8

### Storage

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Redux 382H 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 27°C) 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 vapour barrier packaging material such as polythene.
3. On withdrawal from the refrigerator the water vapour 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 whilst in the frozen state since it will be brittle and easily cracked.

On receipt, Redux 382H will have a storage life of at least 6 months at -18°C plus an additional shop life of 10-15 days at below 27°C.

### Volatile content

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Redux 382H 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 112 and Redux 140 surface pretreatment protection solutions (primer)  
Redux 212/NA and 206/NA foaming film adhesives

### Handling and safety precautions

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In common with all Redux adhesives in film form, Redux 382H is particularly free from handling hazards for the following reasons:

- Film is covered on both sides by protective release paper and polythene 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 382H 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 Defence. Certificates of Conformity and Test Reports can be issued for batches of Redux 382H on request.

## Important

All information is believed to be accurate but is given without acceptance of liability. Users should make their own assessment of the suitability of any product for the purposes required. All sales are made subject to our standard terms of sale which include limitations on liability and other important terms.

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