

## **Cordux™ 654** **Core stabilising film for honeycomb**

### *Product Data*

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#### **Description**

Cordux™ 654 is a disposable backing material which is used for cell stabilisation and vacuum clamping of honeycomb during machining operations. It consists of strong kraft paper, coated on one side with a thin film of thermoplastic, modified epoxy resin. The film is dry and non-tacky at temperatures up to 30°C but as a precaution against storage or transit conditions exceeding that temperature, polythene interleaving is incorporated in the roll of film.

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#### **Features**

- Rapid application and removal
- Suitable for either metallic or non-metallic honeycomb
- No time limit on useable life
- Low cost
- Compatible with most epoxy resin structural adhesives

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#### **Form**

Cordux™ 654 is supplied as a continuous roll, 50 metres long and 1.25 metres wide. The film is available in 180 gsm ± 18 gsm or 250 gsm ± 18 gsm.

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#### **Instructions For Use**

##### **Application**

1. Cut to size, allowing sufficient overlap for manipulation.
2. Remove polythene interleaving, then place resin side of material in contact with honeycomb cell ends.
3. Apply heat and light pressure. Typically, a heated press platten is used but a domestic iron, although slower, is equally effective. Temperatures of 120°C for non-metallic and 140°C for metallic honeycomb are recommended and a pressure of less than 35 N/m<sup>2</sup> (5 lb/in<sup>2</sup>) is required.
4. Maintain heat until the resin has softened and flowed against the honeycomb cell walls (approximately 1 minute at 120°C).
5. Maintain light pressure while cooling to below 80°C. This can be achieved by placing a cold, metal plate on top of the assembly. The cooling rate is not critical.

##### **Removal**

After machining the honeycomb the Cordux™ 654 backing material may be removed by re-heating to 120°C and simply peeling it away while at that temperature. Sufficient time should be allowed for the resin to soften - between 10 and 30 seconds at 120°C has been found to achieve the most efficient removals.

Some trace of resin will remain on the honeycomb and cannot be removed by increasing the heating temperature or duration. It may, however, be removed by immersing for 2 to 5 minutes in a suitable solvent such as methyl ethyl ketone or methoxypropanol.



## Cordux™ 654

If the metallic honeycomb is coated with a cured epoxy primer (e.g. Redux 108) care must be taken to ensure that the cleaning solvent does not attack that coating. For cleaning traces of Cordux 654 from honeycomb coated with Redux 108, a mixture of 40% methyl ethyl ketone and 60% toluene is recommended.

After solvent immersion, ensure complete evaporation of solvents before attempting subsequent bonding operations.

COMPLETE REMOVAL OF RESIDUES OF CORDUX 654 IS NOT ALWAYS ESSENTIAL (see below).

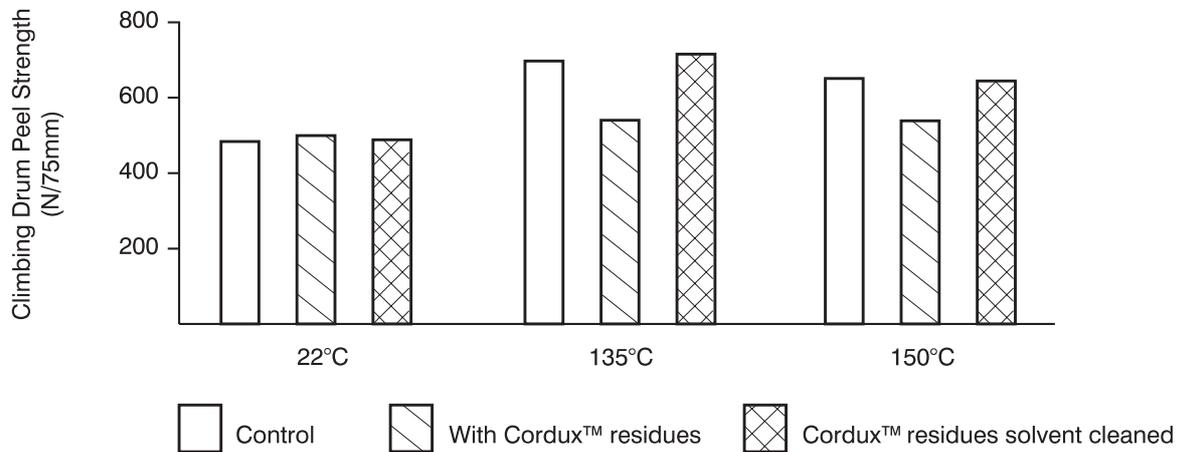
### Compatibility with structural adhesives

Climbing drum peel tests (MIL-A-25463) have been undertaken to assess the effects of residues of Cordux™ 654 on subsequent structural bonding operations.

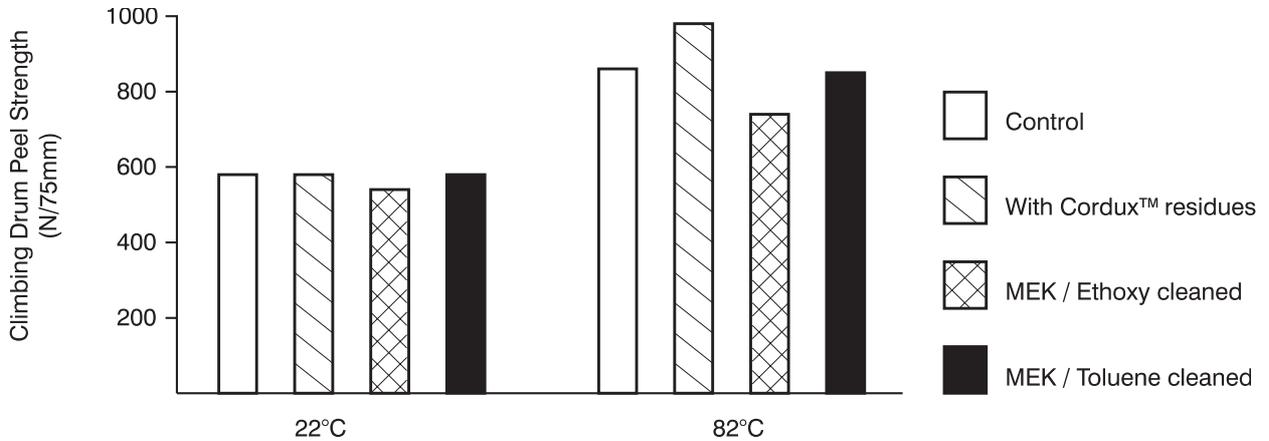
Cordux™ 654 is compatible with most epoxy based structural adhesives and traces of the material left on the honeycomb have been shown to have little effect on core-to-skin bond strengths at room temperature but slight reductions in peel strength have been observed at temperatures above 100°C.

It is recommended, therefore, that for critical applications, where ultimate hot strength is required, residues are removed by solvent cleaning before structural bonding. Care is needed in choosing the cleaning solvent for epoxy primed metallic honeycomb.

#### 1. HexWeb® 7.9-1/4-40(5052)T, bonded with Redux® 319



**2. HexWeb® 7.9-1/4-40(5052)TD, core primed with Redux® 108, bonded with Redux® 308**



**3. HexWeb® A1-96-5, aramid honeycomb bonded with Redux® 319**

In peel tests, all specimens exhibited failure in the honeycomb core, both at room temperature and at 135°C. Therefore, whether or not the Cordux™ 654 residues lowered the peel strengths of the adhesive, the achievable strength of the structure was unaffected by the residues.

**Handling Precautions**

Cordux™ 654 is particularly free from handling hazards since the resin is dry, volatile free and protected on both sides by paper or polythene. It is unlikely that the resin will come into contact with skin or clothing but, should skin contact occur, immediately wash with plenty of warm, soapy water. Cordux™ 654 contains a liquid bisphenol-A epoxy resin and there is, therefore, a possibility of sensitisation by skin contact. Product Safety Data Sheets have been prepared for all Hexcel products and are available from the Safety Department on request.

**Storage**

Cordux™ 654 is a thermoplastic material and there are no known restrictions on shelf life. Storage below 25°C is recommended in order to prevent the possible flow of resin during long periods of storage.



**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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Publication RTU 129b (October 2007)

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