



Datum Carrier Plate



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DATUM CARRIER PLATE (DCP) IS A COMPOSITE-thermoset plastic with Electro Static Discharge (ESD) and non-ESD versions offering high chemical-resistance and excellent machinability with a long service life.

The product uses a high performance glass-filler for improved machinability and finishing enabling you to deliver **A COST EFFECTIVE PRODUCT** to your customer with **NO COMPROMISE IN PERFORMANCE** at point-of-use.

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DCP-ESD offers **AN AVERAGE CYCLE-LIFE OF UP TO 10,000 CYCLES** depending on actual process environment allowing minimal fixture renewal and maximising productivity.



DCP FAQs

The following responses are based on customer feedback and supplied as a service to other customers or potential customers. Datum has not verified the responses.

- + What is the minimum thickness of the wall and base that can be machined?

- + What are typical RPM and feed-rates for cutting DCP?

- + What type of cutter works best (2 flute, 3 flute, or 4 flute)?

- + Is it necessary to apply refrigerant or coolant while cutting the material?

- + What is the lifecycle of DCP

CUSTOMER CASE STUDY DCP SERVICE LIFE

BACKGROUND

Datum Carrier Plate (DCP) is a composite-thermoset plastic offered in Electro Static Discharge (ESD) and non-ESD versions with high chemical-resistance, excellent machinability and long service life.

The product uses a high performance glass-filler for improved machinability and finishing to deliver a cost effective product with no compromise in performance at point-of-use.

The following information on how DCP performs in a production environment is based on feedback from one of our original DCP customers.

CUSTOMER

Datum Carrier
Plate

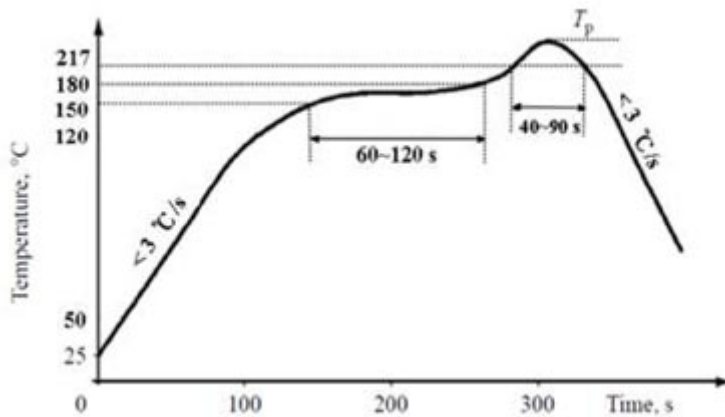
< Battery

Magnesium

Micro-profiled Sheet
and Foil

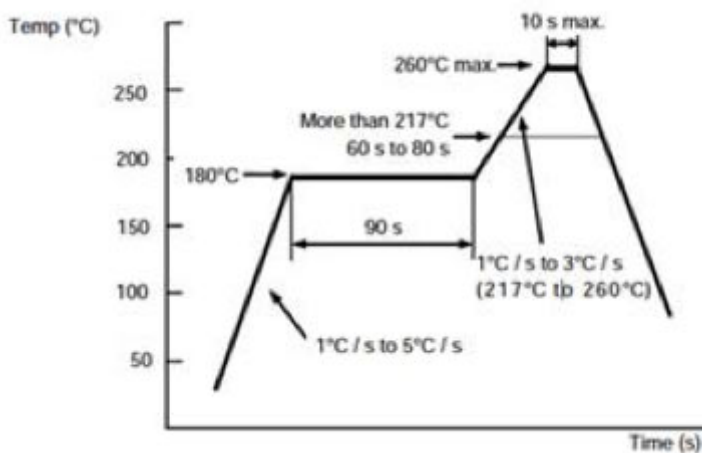
SITUATION

The most critical factor affecting DCP service life based on life cycles is the time and temperature at which the heated solder is in contact with the material.



There are 3 ways in which DCP is used and each has different contact characteristics:

1. **Wave Soldering** – Direct contact with the solder material has the highest “shock impact” for the pallet material
2. **Selective Soldering** – No direct contact with the solder material helps to make the life cycle longer
3. **Reflow Soldering** – High temperature but no contact with the solder paste.



RESULTS

Wave soldering type is the most critical and some typical heating profiles are attached. Some profiles have a longer time at lower temperatures while others have shorter times but at higher temperatures.

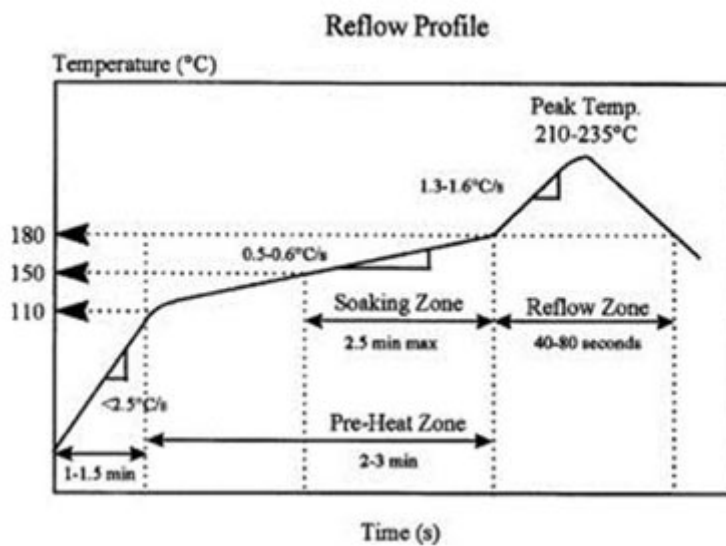
No two production lines are the same so the results will vary from one line to another but the following are the average results for the black DCP material:

Wave soldering – 3 minutes maximum time of contact at a maximum temperature of 250 degrees Celsius:

- 24 hours production – about 1.5 years life time
- 12 hours production – 2-2.5 years life time.

Selective wave soldering – life time is up to 10 years because the solder material doesn't have direct contact with the pallet.

The life-time will also depend on the cooling process. If the pallet is allowed to cool down slowly then the life cycle will be longer.



CONCLUSION

Datum DCP performs well across typical heating and cooling cycles and no issues have been reported after more than 2 years of use

ABOUT US

Datum is a worldwide leading supplier of precision stainless steel foil to the electronics industry from sites in the UK, USA and Singapore.

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