

[www.ccp-gransden.com](http://www.ccp-gransden.com)



# CCP Gransden

ADVANCED COMPOSITES

Design, Engineering  
& Manufacturing

## Over 100 years of Innovation

A MEMBER OF

**ADS**

CompositesUK  
Trade Association  
Member Company



**CCP Gransden is a leading specialist in advanced composite manufacture.** With **over 100 years** in business, the company has evolved from the ship building and repair industry into the development and manufacture of **advanced composites** across High Value Manufacturing Sectors, such as: **Aerospace, Transportation, Security & Defence.**

CCP Gransden are a flexible and dynamic SME specialising in the design, development and manufacture of advanced composites to **AS9100**. For over a century, CCP Gransden have fostered a culture of innovation and investment in the latest technologies to meet the needs of our clients.

Based in Belfast Northern Ireland, CCP Gransden offer our clients performance improvements by the intelligent use of advanced composites and our world class manufacturing capabilities.

We are actively engaged with a range of High Value Manufacturing research centres and play a leading role in a range of exclusive research and development projects within these centres.

CCP are also proactive members of **ADS**, the Aerospace, Defence, Security and Space trade organisation and **Composites UK**.

With a long and successful history of participating in and leading EU funded projects, we are an ideal collaborative partner to help you achieve your business goals.



## Our Purpose

To offer performance improvement through the intelligent use of advanced composite technology

## Our Vision

To be globally renowned as a partner for the design & manufacture of innovative advanced composites

## Our Values

Exceed our clients expectations  
Invest in our people  
Support continuous improvement

## Contents



### 1/ Capability Overview

### 2/ Advanced Thermoplastic Composites

### 3/ Liquid Moulding

### 4/ Prepreg & Compression Moulding

### 5/ Multi Axis Filament Winding

### 6/ Concept to Commercialisation



# 1/ Capability Overview



**CCP Grandsen**  
ADVANCED COMPOSITES

CCP Grandsen recognises that each of our clients are unique and that their individual needs and challenges require a flexible and dynamic approach. To meet and exceed the varied and challenging needs of our multi-sector clients, we invest in the latest advanced technologies.

This has enabled us to create a manufacturing facility that comprises potentially the UK's largest selection of advanced composite manufacturing processes.

Our selection of advanced composite manufacturing processes currently includes:

- Thermoplastic Composite Pressforming
- Thermoplastic Composite Injection Overmoulding
- High Pressure RTM
- Multi-Axis Filament Winding
- RTM & Vacuum Infusion
- BMC & SMC Compression Moulding

**ENGEL**

**Hennecke**  
Polyurethane Technology



To support our clients, CCP has invested in the creation of a unique, world class automated high volume manufacturing cell, able to produce high quality advanced composites in a fast (less than 60 seconds for some components) and repeatable manner.

Our cell is centralised around a 1.8x1.8m 1100T Engel Press and incorporates a 7-Axis robot and a one of a kind infrared oven that can operate at 500°C.



We have also recently invested in a new state of the art large scale Waterjet Cutter and 5-Axis Composite CNC machining centre to increase our composite trimming and machining capabilities.

CCP Recognises that each of our clients will have their own preferred modelling software to support their product design and engineering. To increase our flexibility, CCP has invested in a range of modeling software packages. Our current selection includes:

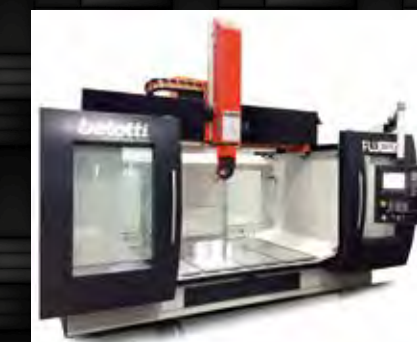
**SolidWorks** **CATIA**

**SPACECLAIM**  
CORPORATION

**belotti**  
cnc / machining centers

In addition to our world class manufacturing capabilities, CCP has intimate knowledge and experience in both thermosetting and thermoplastic polymers and employs a lean manufacturing philosophy to every project. The combination of our world class technologies, our ever-increasing knowledge database of material processing information and our experience in lean manufacturing, enable CCP to be able to manufacture advanced and complex composite components in as little as 1 minute, enabling us to meet the varied production volumes required by our clients.

**As an AS9100 approved manufacturer, traceability and conformity is embedded into everything we do. This level of detail and control, enables CCP to produce a 'Birth Certificate' for each component that we manufacture, allowing all our clients to have confidence in the quality of each and every component.**



A MEMBER OF  
**ADS**

**CompositesUK**  
Trade Association  
Member Company



2 /  
Advanced  
Thermoplastic  
composites

CCP Grandsden has experience in the manufacture of advanced continuous fibre reinforced thermoplastic composites from a large selection of advanced polymers, which include, but are not limited to:

- PEEK
- PPS
- PEI
- PC
- PP
- PA (6,12)

Depending upon our client's needs, CCP can manufacture advanced thermoplastic composites using one of our three automated processes:

- Pressforming
- Injection Overmoulding
- Compression Moulding

Thanks to our high levels of automation, our one of a kind infrared oven and our experience in handling and processing thermoplastics, CCP can manufacture advanced continuous fibre reinforced composites in as little as 60 seconds. This low cycle time enables CCP to be able to manufacture **several thousand thermoplastic composites on a daily basis.**

Via our single stage overmoulding process, CCP can support our clients with parts count reduction, and reduction in assembly times, thereby generating potential reductions in total production costs.



3 /  
Liquid  
Moulding

Whilst there is a selection of liquid moulding processes available to manufacture advanced composites, most manufacturers only have one at their disposal.

Capable of 90 second cycle times thereby supporting High Volume production rates of >1000 advanced composite components/day

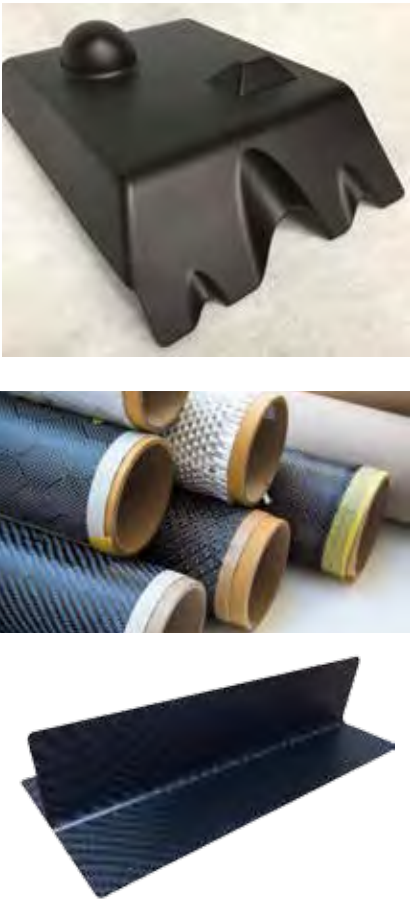


CCP Grandsden don't believe in a one process fits all approach, as this can limit the business opportunities for our clients. To offer our clients flexibility and to enable them to achieve their business goals, CCP offers four different liquid moulding manufacturing processes at our facility.

- High Pressure RTM
- RTM & Light RTM
- Vacuum Infusion

CCP have experience using our liquid moulding processes to manufacture advanced composite components from a selection of thermosetting polymer resins that include, but not limited to:

- Epoxy
- Phenolic
- Polyurethane
- Vinyl Ester
- Polyester





4 /  
**Prepreg &  
Compression  
Moulding**

CCP can facilitate the manufacture of advanced composites using woven and NCF thermosetting prepreg materials, via two separate methodologies. The first utilises our experience in vacuum bagging and our high temperature ovens that can cure at over 200°C.

To facilitate the manufacture of prepreg composites where surface finish is critical, or when our clients' need tight tolerance control on part thickness across the entire part surface, CCP can use our second processing option. Thanks to the flexibility offered by our Engel Press, CCP can utilise close mould tooling within our press and apply the appropriate heat and pressure to cure a variety of prepreg materials.

For those who do not wish to utilise continuous fibre composites, CCP can still support your needs thanks to our ability to process thermosetting and thermoplastic SMC and BMC via our Engel Press.



5 /  
**Multi-Axis  
Filament  
Winding**

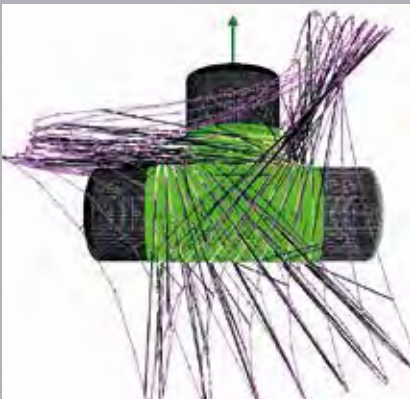
CCP Gransden have been filament winding advanced composite tubes for multiple sectors for over 30 years. We have continued to push the boundaries of this process and recently partnered with MF Tech to design a new and bespoke state of the art 7-axis robotic winding cell to meet the current and future needs of our clients.

The robotic system provides greater flexibility in the manufacturing of multi-layer and multi-material composite components up to 1m in diameter and 4m in length, whilst automation reduces the labour cost of each part.

Our winding system is also supported through the latest filament winding software from ComposicaD™, which enables us to generate accurate winding patterns quickly and efficiently.

Our multi-axis winding system allows for the manufacturing of products such as:

- Gas cylinders
- Pressure tanks
- Rocket motor casings
- Propeller blades
- Fuel pipes
- Storage tanks

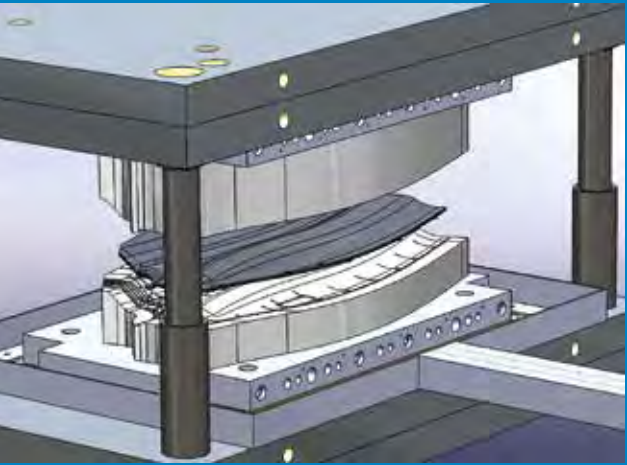






6 /  
**Concept to  
Commercialisation**

**‘We work closely with our clients, offering guidance and support at every step.’**

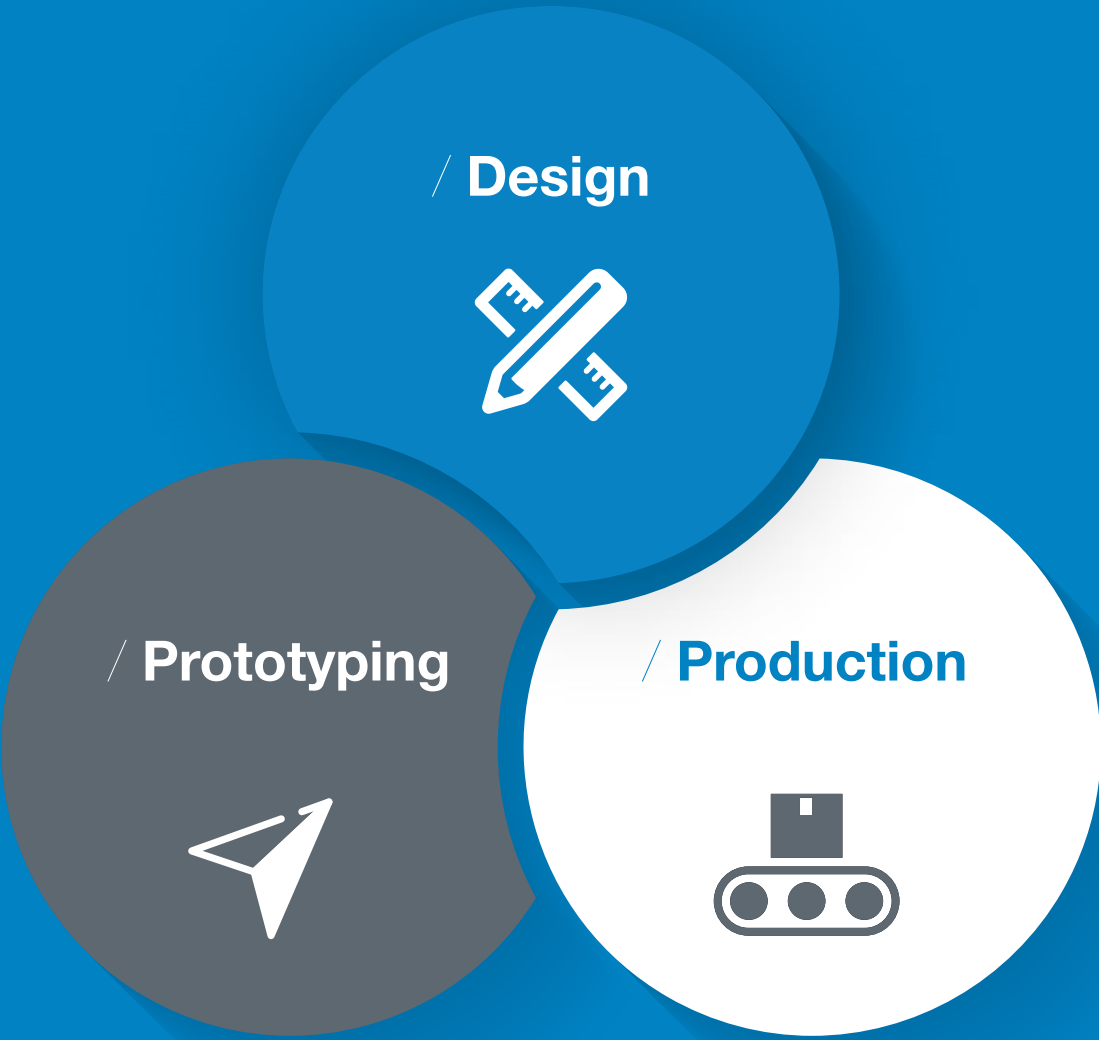


By engaging with our clients at the concept stage, CCP uses our manufacturing and materials knowledge to support our clients designs. Our early involvement can support increased component efficiency, weight reduction, parts count reduction, cycle time reduction and cost reduction.

Using our ever-growing database of material knowledge, CCP works closely with all our clients to offer guidance and support with material and process selection, to ensure that our clients individual needs and goals are achieved. CCP work with our clients to select the most appropriate composite manufacturing

process, to ensure that their specific needs are met. Because CCP has potentially the UK's largest selection of advanced composite manufacturing processes available at our facility, we are seen as a key partner by global material suppliers. This partnership enables CCP

to have access to new and prototype materials before they are available on the market. It also allows us access to additional technical support from material suppliers when working on client solutions. We have the in-house capability to support the design and manufacture of tooling to facilitate prototype component manufacture.





**CCP Grandsden**  
ADVANCED COMPOSITES

# Evolved Engineering

## 1/ Capability Overview

CCP Grandsden recognises that each of our clients are unique and that their individual needs and challenges require a flexible and dynamic approach. To meet and exceed the varied and challenging needs of our multi-sector clients, we invest in the latest advanced technologies.

## 4/ Prepreg & Compression Moulding

CCP can facilitate the manufacture of advanced composites using woven and NCF thermosetting prepreg materials, via two separate methodologies.

## 2/ Advanced Thermoplastic Composites

CCP Grandsden has experience in the manufacture of advanced continuous fibre reinforced thermoplastic composites from a large selection of advanced polymers, which include, but are not limited to PEEK, PPS, PEI, PC, PP and PA (6,12).

## 5/ Multi Axis Winding

CCP Grandsden have been filament winding advanced composite tubes for multiple sectors for over 30 years. We have continued to push the boundaries of this process and recently partnered with MF Tech to design a new and bespoke state of the art 7-axis robotic winding cell to meet the current and future needs of our clients.

## 3/ Liquid Moulding

To offer our clients flexibility and enable them to achieve their business goals, CCP offers four different liquid moulding manufacturing processes at our facility.

## 6/ Concept to Commercialisation

By engaging with our clients at the concept stage, CCP uses our manufacturing and materials knowledge to support our clients designs. Our early involvement can support increased component efficiency, weight reduction, parts count reduction, cycle time reduction and cost reduction.



**CCP Grandsden**  
ADVANCED COMPOSITES

**CCP Grandsden Ltd**  
17 Moss Road  
Ballygowan, Newtownards  
Co Down, BT23 6JE  
T +44 (0)28 9752 8501  
F +44 (0)28 9752 1024  
E info@ccp-grandsden.com

**CCP Grandsden  
Ireland Ltd**  
12 Lower Hatch Street  
Dublin 2 Ireland  
T +353 (0)1639 2979  
E info@ccp-grandsden.com

**CompositesUK**  
Member Company

A MEMBER OF  
**ADS**

