

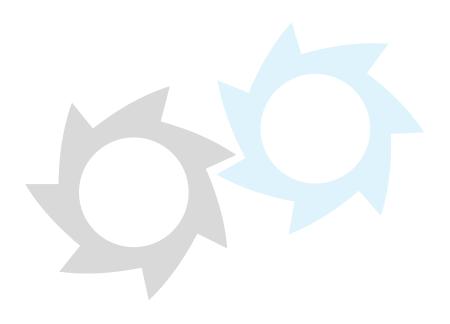




FF Composite Resin Development (CRD) designs, develops, and delivers innovative engineered composite systems and components through the use of groundbreaking materials and techniques.

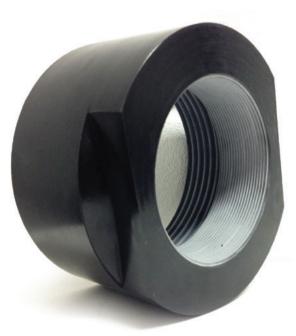
Since its founding in 2008 CRD has developed a wide range of light-weight, high performing, non-corrosive custom composite solutions including— impellers, pumps, compensators, gear boxes, valves, flanges, elbows, and much more. Our client base has grown to include a prominent valve manufacturer, pump makers, the UK Defence Establishment, commercial marine users, and many others.

In addition to offering our range of products, we work with our clients to design solutions for their worst problems: removing corrosion, lowering weight, greatly extending the life of their products, and in some cases altogether eliminating the need for maintenance.





# Innovation





CRD is a global leader in the replacement of metals with composites, for a wide variety of industries and applications, providing weight savings, corrosion resistance, cost savings, and other benefits. Examples include:

- Development and manufacture of full GRE Valve range for leading global valve manufacturer, passing all certification and testing
- Development of Composite Compensator range with ABS, DNV, and Lloyd's approval
- Development of Shrouded impeller for UK Royal Navy
- Development of full range of cast epoxy Pipe End flanges from DN25 to DN300
- Development of full Composite Pipe Spacer range
- Development and manufacture of Flange ends, Sleeve ends and other fittings in composite replacing Super Duplex for global Fortune 500 multi-industry manufacturing leader
- Development of GRE Silencers from cast epoxy, replacing hand winding, for leading global marine exhaust system manufacturer.
- Development and fabrication of composite Headers for Water, Wastewater, Manufacturing and Process industry specialist
- Development and manufacture of high performing range of Composite Elbows
- Fabrication of composite water pump skids for oil field, composite spools for shipping industry
- Precision cast threads for filtration and other systems
- Wide variety of cast products for industries including Water, Oil & Gas, Firefighting, Chemical, Paper, Defence, and Marine.



#### **Products**

- Pumps & Pump Components
- Impellers
- Pipe Fittings
- Exhaust Silencers
- Valves & Valve components
- Pipe Spool Fabrications
- Filtration Components
- Custom Solutions

### Compensators

- Proprietary Design
- DNV, ABS, and Lloyd's Type Approval
- Lightweight & Corrosion resistant
- Suitable for multiple applications/fluids
- Allows variations in expansion coefficients
- Allows for misalignment
- DN50 to DN600

#### Pumps, Pump Components & Impellers

- Corrosion resistant
- Chemical resistant
- Wear resistant
- Lightweight
- UK Ministry of Defence approved
- Low maintenance



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1 May 2013 EXTERATION 8 May 2018









- Can be used in conjunction with standard GRE pipe
- Bonded using normal GRE cement
- Cost effective, light weight, long life, high performing

#### **Exhaust Silencers**

- Maintenance free
- Produced to meet individual requirements
- Wide range of sizes to suit engine size/ configuration

### **Valves & Valve Components**

- Full range of Ball, Butterfly and Check Valves
- Available with actuators or hand operation
- All major IMO type approvals
- Lightweight
- Low maintenance
- Shock & Lloyds Fire Tested
- Manufactured through exclusive arrangement









## **Pipe Spool Fabrication**

- Simple to install
- Simple to install
  Complex and accurate fabrication
  Allows accurate repeatability
  Off-site pressure testing
  Proven track record
  Can be skid mounted

## **Filtration Components**

- Valve discs
- Rotating plug valvesMoulded screw bosses & stops
- Filter Housing









# **Custom Solutions**



Composites are an emerging technology with demonstrated, exceptional, performance characteristics. However they are an emerging field and their full benefits are still not fully understood or utilised.

CRD is a global leader in the exploration and practical application of these innovative properties. The unique performance of our materials allows CRD to substitute exotic alloys such as Super Duplex with higher performing, lighter, faster to manufacture, composite solutions, removing multiple machining steps, reducing weight, greatly increasing corrosion resistance, and providing many other benefits.

We work closely with clients to identify appropriate applications of our technologies, designing solutions to problems that have historically been accepted as endemic to their industry.

## FF Composite Resin Developments

2 Whitemill Crescent, Discovery Park Ramsgate Road, Sandwich, Kent CT13 9FH E enquiries@compresdev.co.uk T +44 1304 897653 | +44 0796 7187552 www.compresdev.co.uk