CGI International Limited

Robert Whiting
PYROGUARD: FIRE GLASS SOLUTIONS

Focused exclusively on fire glass and fire resistant glass, CGI International supports architects, specifiers, contractors and clients in navigating the complexities of fire safety legislation – providing fully tested glazing solutions that are backed by an expert fire glass technical team.

Operating solely in the fire glass market, CGI International understands the challenges associated with building regulation compliance and can support with the correct specification of Pyroguard fire glass solutions which meet the required standards – without compromising on design quality.

Applications and tests selector

<table>
<thead>
<tr>
<th>Fire resistance</th>
<th>Trade name</th>
<th>Type of Frame</th>
<th>Application</th>
<th>Max width x height (mm)</th>
<th>Max area (m²)</th>
<th>Thick ness (mm)</th>
<th>Impact test</th>
</tr>
</thead>
<tbody>
<tr>
<td>EW30</td>
<td>Pyroguard</td>
<td>soft wood</td>
<td>screen</td>
<td>3125 x 1008</td>
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Orientation: Vertical  
Classification: E  
Frame: Steel  
Classification: E  
Duration: 120  
Frame: Steel

Contact Trevor Crossley to make an appointment.

Certification

- CF257 - Pyroguard
- CF581 - Pyrostem
Pyroguard and Pyroguard T product brands, for a wide range of construction applications.

Find out more about Glass Classification

Pyroguard

- Pyroguard EW 30 Maxi: the largest tested size of laminated fire products
- Pyroguard EW 30: 7 mm thickness UV stable for internal and external applications
- Pyroguard EW 30 Impact: the only UV stable 7 mm thickness with 2B2 impact
- Pyroguard EW 30: easy to cut, no taping needed

The success and the reputation of our Pyroguard EW30 product, in the countries where we operate, is due to continuous investments in operations and people.

Pyroguard T

- An extensive range of Fire Glass, stretching from E30 to E120 (with numerous EW options)
- An extensive range of test certificates in different frames: wood, steel and IGU’s
- Some of the largest tested sizes available on the market
- Applications of double-glazed units: float glass, layered glass, toughened glass and laminated glass

CE Marking became mandatory on 1st July 2013

Contact Trevor Crossley to make an appointment.
CE Marking and Licensing

Certification
- CF257 - Pyroguard
- CF581 - Pyrostem
- CF437 – Pyroguard Insulation

Our technical and R&D teams are committed to continuously improving the quality of our products and are developing new systems which are regularly tested and externally certified at approved laboratories.
Established 1998

Management buy-out from Colebrand Group

Sales focused company with 1 product
No internal R&D

SME competing with large multi-nationals

Developing market in Construction industry, UK and Europe

Pyroguard EW Fire Resisting Glass
CGI: how to stay in business

- Establish product R&D
- Understand polymer chemistry
- Resolve chemical formulation issues
- Effective technical customer service
- Market leading products
- Improved manufacturing
A Knowledge Transfer Partnership (KTP) between CGI and the University of Leeds
A 3 year KTP was approved:

“to understand and map the polymer chemistry of fire resisting glasses and use this knowledge to enhance their performance and to develop new products”

Academics involved:
Dr Roth Phylaktou (Fire & Explosions)
Professor Jim Guthrie (Chemistry)

Associate recruited:
Dr Vince Crook
Everything started well...

...until 2008/09 when the CGI world began to change
Chairman and MD retired; replacement based in France (04/08)

Sales Manager, and initiator of the KTP, became General Manager (04/08)

New Sales Manager joined (05/08) and General Manager left (11/08)

Production Manager and Factory Manager left (03/09)

Financial Director left; new Managing & Financial Director joined (05/09)
The construction industry in Europe virtually collapsed
“CGI to be regarded in future by the outside world as a technically led company selling innovative solutions to the fire engineering problems faced by the construction industry”
Outcomes

- Improved product consistency
- New market leading variants of the product
- CGI able to take advantage of market upturn
- New on-site R&D facility
- Associate recruited as Head of R&D
- Chemistry & performance of Pyroguard EW well understood
- 12 UG and PG student projects and placements
- Joint papers and publicity
- 2 further KTPs
- Finalists: 2012 “Best of the Best” awards
2 new KTPs!

Areas identified:

Manufacturing

• Improve quality and consistency in manufacture
• Enable production of larger sizes
• Ensure consistent product quality
• Reduce costs

New Product Development

• Replace bought-in EI product
• Produce innovative, proprietary product
• Enable both market and profit growth

“To review and understand fire resistant glass manufacturing and quality issues and model and implement improvements”

“To understand the science underpinning the performance of silicate based intumescents and current fire insulating glasses and to develop an innovative, proprietary product”
Manufacturing KTP

Aims

- Understand product quality issues
- Automatic process monitoring
- Improved manufacturing process
- New product quality system
- Enhance knowledge base

2 year project

Associate: Masters in Chem Eng

Academic: Dr Harvey Thompson School of Mech Eng
Manufacturing KTP

Achievements

- Developed modelling techniques
- Embedded new culture
- Initial trials for new solutions
- bespoke film thickness monitoring machine
- 25% process improvement: potential for more
- Introduced new methodologies
- Created internal standards
“KTPs provide an excellent mechanism for harnessing a technical knowledge resource far beyond the scope of an SME to solve issues where the intervention of “big brains” and new ideas are required.

“Associates are commonly highly skilled and motivated and can thrive in this partnership environment”

Dr Vince Crook
Product Development KTP

Aims

- Develop new systems
- Reduce market vulnerability
- Produce new products
- Significantly reduce manufacturing costs

3 year project

Associate: PhD in Polymer Science

Academic: Prof. Jim Guthrie, School of Chemistry
Product Development KTP

Achievements

- New facilities
- Designs now meet standards
- Significant new knowledge
- Pilot scale products pass tests
- Issues identified: solutions found
- Final formulation testing at end of KTP
- UG and PG projects

1 PG employed
“The KTP programme has delivered again for CGI. Our progress has been **accelerated way beyond what could be achieved outside of the programme.** We were able to attract an extremely talented chemist and build a technical team of enthusiastic contributors from both the University and Industry. It is likely that **without the focus that the KTP framework creates** the project may have run aground at any of the many technical hurdles that were encountered. CGI are now investing heavily to commercialise the outcome”

*Dr Vince Crook*
“The extent of cross-fertilisation of concepts, interpretations and ideas between the industrial and academic team members, counselled by the KTP Office and KTP Adviser, has been great – leading to opportunities for the development of people, research and the potential for further collaboration”

Prof. Jim Guthrie
In summary...

- CGI transformed as a business
- 3 Associates gained experience and jobs
- University of Leeds: teaching and employment benefits
KTP Office
Research and Innovation Service

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http://www.leeds.ac.uk/ktp

Knowledge Transfer Partnerships
http://www.ktponline.org.uk/