



# PLASTIC & RUBBER EXTRUSIONS FOR THE CONSTRUCTION INDUSTRY – CHOOSING THE RIGHT CODING & MARKING SOLUTION

## INTRODUCTION

From homes and buildings to roads and railways, bridges and tunnels to high-profile flood defences, construction is one of the largest and most diverse sectors of the UK economy, covering over 280,000 businesses and almost three million jobs.<sup>1</sup>

The sector is also a key contributor to growth across the UK economy, employing about 10% of the total UK workforce and contributing almost £90 billion annually, according to the Confederation of British Industry.<sup>2</sup>

Within that, the construction products manufacturing sector alone provides jobs for 300,000 people across 20,000 companies, has an annual turnover of more than £40 billion and accounts for over one-third of total construction output.<sup>3</sup>

Despite being affected disproportionately since the recession of 2008, an increase in house building helped the UK construction industry to grow at its fastest pace for four months in June 2014 - the growth in UK construction industry rose by a reported 1.5% in the first three months of 2014 and was 6.7% higher than a year earlier; the biggest annual rise in three years.<sup>4</sup>

The Construction Products Association (CPA) believes that the construction industry will grow about 10% and contribute nearly £11 billion to the UK economy over the next two years - led by private housing, infrastructure and commercial developments in the short term, then work on schools and hospitals later.<sup>5</sup>

The UK government believes there is a range of factors which will affect demand for construction over the medium term, including globalisation, demographic changes, demand for green and sustainable construction, both in the UK and abroad, increasing importance of technology in construction and growing demand from emerging economies such as China and Brazil.<sup>6</sup>

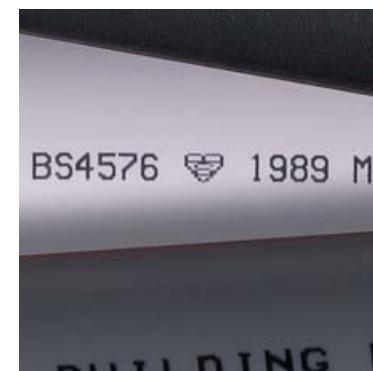
Across Europe, too, the picture is improving, with a forecast average growth of 1.8% a year, in real terms, from 2014 to 2016. This is attributed mainly to new residential buildings but showing positive indications in all sub-sectors.<sup>7</sup>

It's clear that with rising demand now and to come, manufacturers of plastic or rubber extrusions for the construction industry will require agile, reliable coding and marking equipment to meet the shifting requirements of a range of customers, with legibility, adhesion and colour.



Whether it's a simple product name or CE logo; a part number; the international standards the product meets; or a large company logo, modern coders can deliver accurate and durable printing onto a wide range of substrates.

And with rising costs a key concern cited by the CPA, reliable coders which are easy to use, and work effectively but unobtrusively, are a major boost to minimising waste caused by mistakes and reworking.





## FACTORS TO CONSIDER

Choosing the right coding solution is not easy. No two applications are exactly the same and the following are all factors to be considered when deciding which coding solution to choose:

- Code content – the codes required for extrusions tend to be simple, often one line although sometimes up to three. But will increased code complexity, such as varying message content for different customers, printing in different orientations, or to match future industry standards, already be supported by the printer you choose, or will you need to purchase another to keep up?
- Available budget – not just the initial purchase price, but consider the overall cost of ownership and factor-in reliability; by compromising on price you may pay more with unexpected breakdowns. Is leasing a better option, as a revenue rather than capital cost? During peaks in production, will rental give you flexibility to meet coding demands?
- Substrate – consider the range of materials you need to code onto and ensure that you have each of them sample-coded by the printers you are considering. Is the code legible? Also consider the range of colours of the materials you want to code onto: could one coding solution be suitable for all?
- Production environment – if your coding environment is hot and dusty, or wet during the cooling process, ensure that your coder has the right IP rating and features to perform reliably. Also take into consideration whether coding is to take place before or after a water bath and ensure that both the coder is protected, and that the code will adhere to the substrate
- Testing – will your coding and marking provider offer a free trial? You need to be certain the machine is capable of meeting the demands you will put on it

Linx's own Voice of Customer research in 2014 suggests that the key drivers behind coding purchases in the plastic and rubber extrusions industry include the no-compromise demand for minimising the risk of waste and downtime, combined with printer reliability.

Less downtime on your production line means less cost to your business, and less risk of delaying delivery to customers. And fewer coding errors mean less scrapage and the associated costs to the business. These factors, and others, are often inter-connected.

## MINIMISE WASTE

### 1. Minimise coding errors

Modern coders with easy-to-use interfaces reduce the risk of human error – for example by entering an incorrect message or selecting the wrong code. By reducing these errors, scrapage costs are reduced further down the line.

Easy, intuitive message selection and a large memory to store different codes can substantially reduce these risks by making sure the correct code is selected first time, every time.

Coders which can be linked to a central PC also help to reduce the chance of manual errors when switching between products or messages.

### 2. Built-in reliability

Fast line speeds may not be a crucial consideration, but you need to be able to trust your printer to work reliably and unobtrusively during continual operation, without constant checking, cleaning or recalibrating.

In extrusion environments - which can be hot and dusty, or damp during the cooling process - coder failures mean costly downtime.

Coders with IP55 or IP65-rated steel enclosures offer protection against liquid and particle contamination, preventing stoppages and offering high quality continuous coding.

### 3. Flexibility

A coding system with limited message types will cause additional cost and delays when setting up new messages.

Digital CIJ and laser coding systems provide the flexibility to change messages quickly at the press of a button, and also deliver a vast range of code sizes and styles onto most materials.

Codes can be changed without stopping the printer, meaning downtime is saved and delays on delivering to customers are reduced. Additionally, software enables coding in different orientations, for example onto guttering extrusions prior to cutting.





#### 4. Quality control

Poor quality code, which is either illegible against the substrate colour or smudges can result in costly rework or scrappage. Also codes which fade during storage outside or end use will be unacceptable to the end customer.

Pigmented inks in a range of colours will ensure codes stand out against any colour of extrusion, and provide UV resistance when stored outside, preventing fading.

Alternatively, permanent coding with laser applies robust, legible and traceable coding on most plastics and rubbers, and without the risk of code transference. Metre-marking software will also ensure accurate code placement along the length of the extrusion.

## THE DIFFERENT CODING TECHNOLOGIES

There is a range of coding technologies available, each with its own particular strengths in different applications.

### Continuous Ink Jet (CIJ)

Perhaps the most cost effective choice, CIJ maintains an important place as it can print on almost any substrate. A wide range of inks is available to use with CIJ printers, including pigmented inks of different colours which offer superlative contrast and durability to ensure codes stand out on any background.

Additionally, UV cure inks provide excellent adhesion, light fastness, and resistance to a range of chemicals – perfect for preventing code transference during production, and fading during end-use.

CIJ can print from one to multiple lines of text and simple graphics at speeds of over 2600 characters per second. Further versatility is given by the compact printhead that can be situated above, beside or beneath a production line – even traversing from side to side across the line if necessary. With lighter models increasingly being produced, the CIJ printer is more capable of being quickly moved from line to line and is quicker to install and set up than laser coders.



### Laser

Laser coding can deliver a wide range of code sizes and styles, onto most materials, providing the flexibility to meet most coding applications.

Laser coding also provides a permanent code on plastic and rubber. On PVC, laser produces a colour change for added code visibility, while extractors to remove the hydrogen chloride by-product when coding PVC with a laser are a necessity. On other plastics and rubber it will leave a permanent etched code.

As there is no ink involved in the coding process and therefore no drying time, the risk of smudging is removed, for example when the coded product is in contact with other products or handling systems soon after coding. Plus codes will not fade during storage or end-use.

Laser coders are particularly attractive due to their low downtime, high-speed capability and the fact there are no consumables; which together make the long-term cost of ownership lower than some other technologies.

Steered beam laser systems are highly versatile as they provide clear, consistent and perfectly formed characters in a variety of fonts and message formats, and enable the use of high quality graphics across a wide range of print sizes, for example international standards, or company logos.

Developments in design have also recently given rise to a new generation of lower cost compact laser coders, which offer an affordable alternative to other technologies whilst still maximising functionality.

### Large Character Marking

Case coders are particularly well-suited for printing large character information such as company logos or industry standards onto porous materials such as cardboard secondary packaging, using text and graphics which are easy to see.

Case coders can print to a high-resolution quality, and are easy to set-up and adjust, their reliability and predictable cost of ownership endear them to production lines in a range of industries. They are also a cost effective alternative to pre-printed labels.



## CONCLUSION

In an industry which can require information to be printed onto extrusions at various stages of the process, at varying speeds or angles and in different environments, coding and marking equipment must be able to meet complex demands comfortably.

Robust coders are required to operate reliably in challenging production environments, with trouble-free integration into production processes.

Extruders rely on bulk turnover, so it's vital that coders are simple but reliable, and carry on working without the time-consuming need to be continuously monitored or adjusted. This includes the time taken to change the code between runs.

An effective coding solution, tailored to your particular requirements, can help facilitate smooth extrusion processes, as well as helping you deliver top-quality service to your customers.

### References

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