

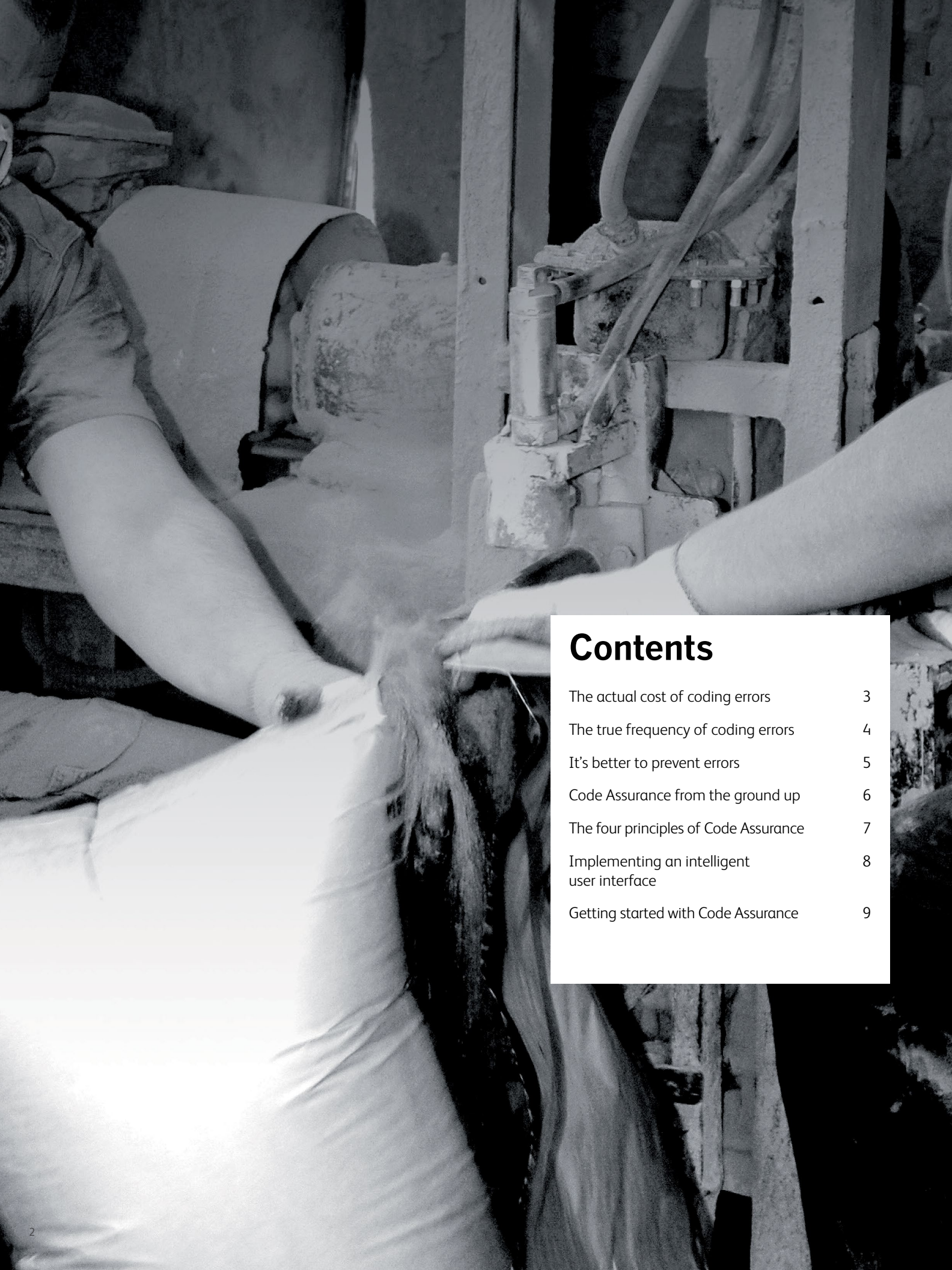
Removing the cost of coding errors in building materials

Consumers, business partners and regulatory authorities demand more accurate product codes and information. [Are processes and today's coding systems up to meeting that challenge?](#)



Code Assurance is an approach to proactively preventing errors by designing message creation and job selection processes to be as foolproof as possible. Videojet is pioneering the concept and implementation of Code Assurance through an interface, a PC-based message design and rule creation software, and a network control package. This solution is a critical, and often ignored link in the chain of error prevention in coding and labeling technologies.

This guide examines the key factors in the coding process and how to improve them to benefit from a corresponding improvement in productivity, waste reduction, lower costs and risk management.



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The actual cost of coding errors

Correct product coding is important to manufacturers, helping improve supply chain efficiency and visibility while providing customers with important information about the products they buy.

Coding errors are costly, not only to plant operations but to the entire business. There is the cost of rework – assuming that the product can actually be reworked and the plant has the capacity to do so. In a 24/7 production environment, rework may not be possible. Or, once the product has been coded, it may be impossible to recode or repackage. The need to scrap miscoded product can be even more costly than rework, but it may be the only option.

And that's nothing compared to the trouble and cost of miscoded products that end up on the retail shelf or in the homes of consumers. Beyond the risk of regulatory penalties and fines, the brand's reputation itself can suffer costly damage.

The real costs may be all but invisible

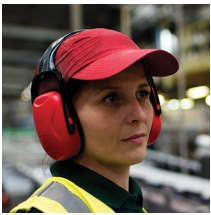
Most organizations struggle to quantify the actual cost of lost product and lost production capacity as a result of coding errors – let alone lost reputation.

The specific costs associated with rework remain entangled with general measurements of line inefficiency, so that there is often no knowledge of the cumulative effect of these mistakes.

Today, getting codes right isn't just important – it's crucial.

The true frequency of coding errors

Of course, much can be done to build a form of Code Assurance into your organization organically.



For example, you can start with initiatives as simple as retraining operators, improving ergonomics at data-entry points and performing cross-checks before committing to a print job. These and other operator-centered methods can measurably reduce errors. However, assuming most companies undertake these simple steps already, the room for further improvement is still staggering.

The truth is that coding errors happen so often they are commonplace.

Videojet recently surveyed a variety of manufacturers and found that all had experienced coding errors – many of them on a frequent basis.

In fact, nearly half the companies surveyed were having trouble with coding errors at least once a week, with one-quarter reporting coding errors at least once a day.

For your business to truly benefit from Code Assurance, it is mission critical to move beyond behavioral methods and adopt solutions that deliver maximum automated accuracy while minimizing the risk of human error.

Why correct coding matters

Manufacturers are looking for ways to:

- remove operator error from message setup and job selection processes
- minimize the cost of scrap due to coding errors
- reduce resupply costs for replacing recalled or withdrawn products
- reduce potential for lost business from incorrect products being shipped
- minimize brand damage by narrowing the scope of any recalls
- meet the requirements of retail partners and regulatory overseers for product quality and traceability.

With reliably correct coding, all these issues are addressed up front, before they can become problems.

It's better to prevent errors than to calculate the damage

More than half of coding errors are caused by operator error – our surveys suggest a range of 50 to 70 percent. The most common mistakes are incorrect data entry and incorrect job selection. In our survey, we found that those two mistakes accounted for 45 percent of all coding errors.

Up to 70 percent of coding errors are caused by operator error, with almost half caused by mistakes in code entry and job selection.

It's in the producer's own self-interest to understand the scope and cost of coding mistakes and take counter measures to eliminate them. Moreover, many retail partners are now requiring compliance with coding standards that include implementation and documentation of methods to eliminate such errors.

Preventing errors by design: mistake-proofing coding processes

Producers and packagers need proactive solutions to address all these issues – from unaccounted costs, to ineffective countermeasures, to partner mandates – instead of reacting to coding problems after they occur and their costs accrue.

There are two ways to deal with coding problems at the source, actually on the production line:

- proactively reduce the likelihood of errors
- try to catch errors when they happen to minimize waste, correct the error and get back to production as soon as possible.

It's not a question of either/or. Even if you're effectively preventing coding errors, you still need the ability to quickly respond if something goes wrong in order to limit the damage. But clearly, resources invested in prevention can pay back many times over when compared to the expense of putting errors right.



Code Assurance from the ground up

Code Assurance is Videojet's comprehensive approach to preventing or eliminating errors in the coding and marking process

The key to Code Assurance are the human-machine interfaces – including both hardware and software components – which can and should be designed to simplify data entry and help prevent operator errors, both at code entry and job selection.

We also believe the structural flow of coding processes can be redesigned to minimize operator interactions to reduce the risk of errors, even to the point of distributing correct codes to the correct printers for the correct jobs automatically.

What are the best technologies to utilize to help ensure that accurate data input and accurate printing are fast, easy and convenient to achieve, so that line uptime is maximized while downtime is minimized? As a result of the multifaceted nature of achieving Code Assurance, our comprehensive approach has led to our creation of **The Four Pillars** of efficient, effective coding and overprinting, of which Code Assurance is just a part.

These Four Pillars are:

Code assurance –

our solutions don't just help prevent coding errors, they empower you to get the right code in the right place, on the right product; time after time. This is done via the design, creation, management and implementation of the whole coding process effectively.

Uptime advantage –

our product range is designed to minimize both planned and unplanned production line hold ups.

Built-in productivity –

simply by being more available, more of the time, our solutions enable you to maximize your line efficiency and minimize your cost of ownership.

Simple usability –

the quality, accuracy and use of data is vital, so all our products are designed and engineered to be fast and simple to use at every stage, ensuring information integrity from input to pack.

Our complete Code Assurance methodology relies on four basic principles

1

Simplify message selection, so the operator selects the right message for the right job.

2

Restrict operator input to the absolutely essential points of contact only.

3

Automate messages as much as possible, with pre-defined rules that help prevent incorrect entries.

4

Use authoritative data sources – such as MES, SCADA, ERP or other enterprise IT systems – so that the appropriate information is pulled to the printer automatically when the operator selects a job.

Now let's take a closer look at what Code Assurance means, and how Videojet solutions help manufacturers achieve it.

From individual operator interactions to facility-wide automation

A central goal of Code Assurance is to simplify the process of message selection and constrain incorrect entries, so that operators reliably enter the right coding message and apply the message to the right job.

Predefined coding rules automate as much of the message creation process as possible, minimizing day-to-day operator input while ensuring that any necessary input complies with policies and logic that pertain to the specific job.

Although it's impossible to eliminate operator input completely, the intelligent interface can restrict input to the few key points where the process requires it. Even then it can restrict the input to policy-defined formats and content choices to substantially reduce the opportunity for operator error.

Software plays a key role in error prevention and code assurance. PC and network-based technologies remove the need to create codes at individual printers, provide a centralized source for the right code, and connect printers with authoritative data sources, quality control solutions and product tracking systems across your enterprise.

The deeper the organization goes into Code Assurance, the less risk for operator error and costly coding mistakes there are. Code Assurance isn't a single technique, but a progression of possibilities stretching from the individual operator to the entire operation. Code Assurance allows any organization to find the optimum balance of costs and benefits.

Implementing an intelligent user interface

When evaluating and implementing Code Assurance solutions, many companies begin with the user interface. The goal here is to manage and enforce acceptable parameters for the coded message and to eliminate operator error from the job selection process.



The printer's user interface can be designed with several features to help advance these goals, including:

- Requiring separate user authorizations for code creation and job selection.
- Restricting the types of coding parameters the operator can enter, or allowing job selection only from a list of valid jobs that have been created and stored in advance.
- Providing stored jobs with a meaningful name that describes the actual product being coded.
- Using calendar selection for dates to eliminate errors arising from date formats that vary from region to region or product to product.
- Assigning date offsets so that, for example, a Use By date can only be selected from the range of valid dates allowed for the product.
- Linking Use By dates to Sell By dates, so that once the Sell By date is selected the correct Use By date is generated automatically.
- Setting calendar rules that prevent operators from selecting specified dates, such as weekends or holidays, while also preventing the system from using these dates in automatic date calculations.
- Restricting selection of data to a drop-down list to eliminate the possibility of wrong key-presses.
- Prompting for required fields and confirmation of correct entries before allowing the operator to begin the print job.
- Confirming data prior to every job change to ensure the correct job has been selected.

These goals must be achieved while still making it simple and efficient for the operator to perform their role. In designing the interface, for example, Videojet specified a large 264mm (8.4") touchscreen and designed the display for easy operation – with fonts that are easy to read, colors that are easy to interpret and buttons that are easy to press.

Along with the calendar selection, drop-down menus, field prompts and other Code Assurance features listed above, the physical design of the interface makes it almost impossible for a reasonably careful operator to get code creation and job selection wrong.

Getting started with Code Assurance



Code Assurance benefits include:

- Reduced overhead, with no need to create different code designs for different printer types, and no need to learn and work with different printer-specific software.
- Increased control and efficiency, since a single message can be created away from the production line and run on any printer.
- Better coding quality with reduced errors, thanks to features such as wizard-based creation of complex or merged fields, seamless connectivity to a wide range of databases, print preview for confirmation of the finished design and many other advanced features.

You can build Code Assurance into your organization starting with initiatives as simple as retraining operators, improving ergonomics at data-entry points, and performing cross-checks before committing to a print job.

These can reduce errors but they're not foolproof.

It's the only user interface on the market designed to implement the Videojet Code Assurance model, and we're rolling it out across an extensive range of Videojet coding equipment, including:

- CO₂ and fiber range of laser marking systems
- the DataFlex® line of thermal transfer overprinters
- the 2300 series of high-resolution case printers
- the 8510 thermal inkjet printer
- the 1860, 1550 and 1650 continuous inkjet printers

As you add layers to your Code Assurance solution, you gain centralized single-point message creation and the ability to push policy-compliant, quality checked codes out to all your printers. You gain the ability to ensure the right codes are going on the right products, reducing risk, rework and recalls while protecting the brand reputation. Plus you streamline data management and simplify changeover to drive productivity gains and support your automation goals.

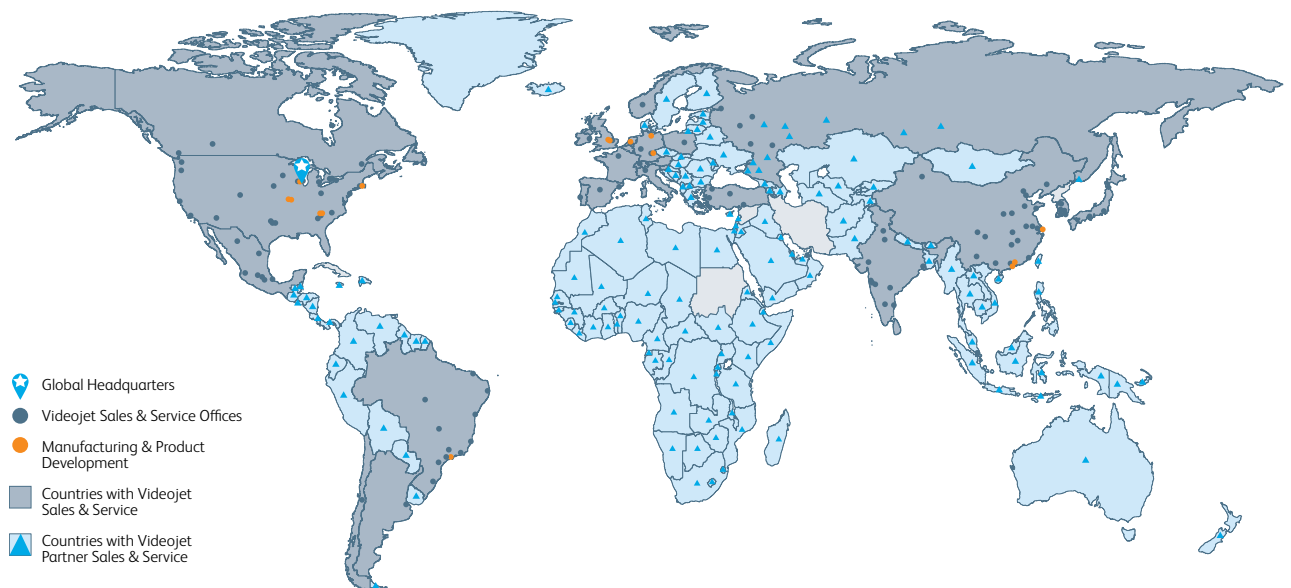
Peace of mind comes as standard

Videojet Technologies is a world-leader in the product identification market, providing in-line printing, coding, and marking products, application specific fluids, and product life cycle services.

Our goal is to partner with our customers in the consumer packaged goods, pharmaceutical, and industrial goods industries to improve their productivity, to protect and grow their brands, and to stay ahead of industry trends and regulations. With our customer application experts and technology leadership in continuous inkjet (CIJ), thermal inkjet (TIJ), laser marking, thermal transfer overprinting (TTO), case coding and labeling, and wide array printing, Videojet has more than 400,000 printers installed worldwide.

Our customers rely on Videojet products to print on over ten billion products daily. Customer sales, application, service, and training support is provided by direct operations with over 4,000 team members in 26 countries worldwide.

In addition, Videojet's distribution network includes more than 400 distributors and OEMs, serving 135 countries.



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