COBALT
SYSTEMS

A Beginner's Guide to SSCC Labelling

Global trade is such an integral part of our everyday lives that you might not have thought about all the effort that goes into it. But shipping items between destinations in so many parts of the world, in such enormous volumes, is a massive undertaking.

Cartons and pallets are transported by road, rail and air. The objective, of course, is to ensure that they get to their end destination in good condition, without being damaged or going missing along the way. But to get to where they need to go, these units need to be correctly labelled.

This is where the Serial Shipping Container Code (or SSCC) comes in. This system provides an international standard, with identification numbers so that individual shipping units can be tracked at each step of the way. In this guide, we'll take a closer look at SSCC labelling and why it matters.

Barcode | Labelling | Automation   Est. 1997

What is an SSCC label?

The Serial Shipping Container Code, or SSCC, is an 18-digit number used to identify shipping units including pallets, cartons and containers. Logistic units are assigned a unique SSCC which can be used to identify that particular unit at any stage of the supply chain, so that they are traceable from end-to-end.

As well as being used for tracking purposes, the SSCC also contains details of the contents of each load.

SSCC numbers are printed in digits and in the form of GS1-128 barcodes on GS1 shipping labels. This same information must also be included in electronic data interchange (EDI) messages relating to the unit as it is in transit.

Because each unit is assigned a unique SSCC, this ensures that there are no duplicate codes and thereby prevents misidentification.
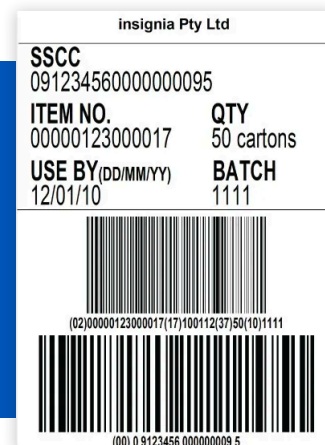
Key components of SSCC labels

SSCC labels must include a number of key components so that units can be identified and tracked at every stage of their journey along the supply chain. These include the following:

- A GS1 Company Prefix, a unique number issued to companies when they join GS1 and which is used to identify them as the owner of a particular product.

- A unique, sequentially-assigned serial reference number used to identify individual logistics units.

- An application identifier; this is a numeric prefix used to indicate the data format and structure within the barcode.

- A check digit, used for error detection within the SSCC number to ensure the accuracy of the data included in the barcode.

- A GS1-128 barcode representing the SSCC number, including the GS1 Company Prefix, serial reference, application identifier and check digit in a machine-readable format.

- SSCC labels also include the SSCC number in the form of printed digits so that it can be manually read without the need for a barcode scanner.

In terms of layout, the GS1 logistics label is divided into three sections:

- Top section: includes company name, logo and any additional information.

- Middle section: includes the unit's SSCC and any further information (e.g. batch number and use-by dates) according to the AI standards, printed in a form that can be read by humans.

- Lower section: GS1-128 barcodes with the encoded data displayed beneath each barcode. There is no limit to the number of GS1-128 barcodes included on a GS1 label, but the SSCC should always be included in the lowest barcode printed on the label.

SSCC LABEL FORMAT

0	123456789	123456789	0
Extension digit	**GS1 Company Prefix**	**Serial Reference**	**Check Digit**
A number between 0 an 9	9 or 7 digits	Company assigned (7 or 9 digits)	Checks the validity of the entire number

insignia Pty Ltd

SSCC
0912345600000000095

ITEM NO.
00000123000017

QTY
50 cartons

USE BY (DD/MM/YY)
12/01/10

BATCH
1111

(02)00000123000017(17)100112(37)50(10)1111

(00) 0 9123456 000000009 5

SSCC label position and placement

SSCC logistics labels can be used on any shipping unit but are most often used applied to pallets. According to GS1, two identical labels should be attached to adjacent sides of the unit, one on the short side and another on the long right-hand side.

For units over 1,000mm in height, the label should be placed so that the barcodes are no more than 800mm and no less than 400m above the floor. For units below 1,000mm, labels should be placed as high as possible but the barcodes must be no more than 800mm and no less than 32mm from the unit's base. The barcode's edge should be no closer than 50mm to a vertical edge of the unit.

While GS1's General Specifications do not stipulate a standard size, A5 labels (148mm x 210mm) are generally used so that there is sufficient space for additional information. GS1 guidelines state that label material and printer ink must be compatible, and material or ink which is heat-sensitive (such as inks that are easily smudged) is not acceptable. Barcodes should be printed in black on a white background.
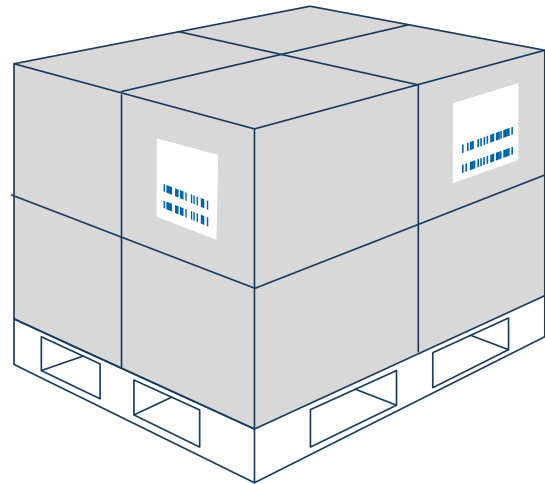
Benefits of SSCC labelling - why do we use SSCC labels?

There are numerous key benefits to the SSCC labelling system. In particular, SSCC labels greatly enhance traceability and allow for seamless tracking of each logistic unit at every stage of its route, from initial dispatch to arrival at its intended end destination.

This, in turn, facilitates enhanced inventory management and allows for improved communication between businesses. It streamlines the logistics and shipping processes, ensuring greater efficiency while reducing errors and hence the need for manual interventions.

SSCC labelling also ensures compliance with GS1 standards. Because SSCC numbers can be read and processed by machines, this improves data reliability – significantly reducing human error, as we've noted – and cutting costs as well.

Ultimately, SSCC labelling improves customer satisfaction by ensuring that delivery dates are more reliable – so people have a clearer idea of when items will arrive with them – and that the whole process of making and receiving orders runs more efficiently.

Challenges with SSCC Labelling

Errors in SSCC labelling can cause delays to shipments or even mean that good are rejected altogether at their destination. One of the most common causes for failure is that SSCC labels include the wrong information or different information on each label. Compliant SSCC labelling requires a minimum of two identical labels on adjacent faces of the pallet, so if they're different, you've got a big problem.

Taking that a step further, the information on the SSCC Label also has to match up with what's stored in your software/database as it's sent to the recipient. And these two facets of SSCC labelling is where companies can tie themselves in knots. Labelling is arguably relatively easy, but factor in multiple versions and integrating with software systems and it's no longer a case of firing up a printer and sticking on a label. In the next section of this guide we'll explore some of the solutions Cobalt provides for these situations.

Another common problem is print quality; many SSCC labels are printed to an inadequate standard, with smudged or otherwise illegible barcodes. This can mean that barcodes can't be read by scanners, and this can cause serious problems when pallets arrive at distribution centres. Pallets may be rejected as a result.

Information may sometimes be missing from barcodes, which again may mean that scanners are unable to read them. This, in turn, often causes delays, with knock-on effects throughout the supply chain.

Labels may be incorrectly positioned on shipping units, which also causes problems with scanning as scanners may be unable to read the information contained in the barcodes. Also, labels may not stick properly to the surface of the unit, which can mean that they come off during transit. This may make it impossible to send them on to their next destination, meaning that they get lost along the way.

SSCC Labelling Solutions

Cobalt's commitment to quality in meeting GS1 standards for SSCC labelling solutions makes us the supplier of choice for both automated print and apply applications and manual application too.

We have a range of options to help companies get to grips with SSCC labelling and experience in many sectors, particularly in FMCG and food and beverage industries where supplying into UK supermarket chains means compliant and efficient SSCC labelling isn't merely a nice to have, but is in fact essential.

While the core focus of any SSCC labelling solution is naturally the setup, printing and application of a correct label, at Cobalt we take things a step further with two specific SSCC labelling solutions; Smart SSCC and Cobalt Pallet Manager.

Smart SSCC is our proprietary solution that enables our customers to build out compliant SSCC labels in real-time at the start of the process, using data collected as pallets are prepared.

Available as a manual solution, semi-automated or fully automated, Smart SSCC can generate labels for complete, part or mixed pallets in real-time, offering massive savings in terms of time and set up headache. We can also track which line whatever case has come from, consolidating it into a pallet labelling line for full traceability of the goods.

For example, take a food manufacturer with 20 production lines, going into five pallet lines; we know exactly which case has come from where.

Whilst at the end of the process, Cobalt Pallet Manager is our enhanced validation and security product that scans both labels and performs a number of safeguard checks:

- Verifies the integrity of the print quality in terms of machine readability

- Checks the labels match up front and side (and other faces if necessary)

- Checks the data on each label matches the contents of the consignment

- Checks the data matches the information held in your software/systems

Any failure at this stage will result in visible and/or audible warnings so you'll never ship out a bad SSCC label.

In terms of SSCC labelling production, we offer a range of standalone printers and automatic print and apply machines to handle this.

For scenarios where production throughput is relatively static and slow speed and the same products or range of products are prepared for shipping day in, day out, then a Zebra industrial printer might be sufficient.

These can be configured to work with your existing labelling software or we recommend Loftware NiceLabel.

For higher throughput environments, our specific pallet labelling machines, designed with SSCC in mind, offer 2-sided and 3-sided automatic labelling. Capable of running at speeds of up to 120 pallets per hour when applying to two sides of a pallet or 80 per hour when applying to three sides of a pallet, speed, accuracy and efficiency are guaranteed.

The inclusion of our Smart SSCC product makes the management of many to one pallets (i.e. a mix of finished products loaded onto the same pallet), a simple process.

Again, this can be configured for environments where labels are manually applied or can be highly automated using a range of scanning, data collation, label management and print and apply technologies. The short answer is SSCC labelling is complicated, but at Cobalt, we have plenty of experience in making this simple. And we can often get you up and running quickly, ideal when customer demands or requirements for SSCC labels changes – for example supermarkets.

Future trends in SSCC labelling

There are some key medium to long-term trends to be aware of with regard to SSCC labelling. For example, the traditional barcode may well be phased out over the coming years as the 2D code, which can encode up to 100 times more information, replaces it.

Ongoing trends which we can expect to continue in the years ahead include the increased use of data visibility and analytics, leveraging data to enhance decision-making and optimisation of logistics processes, and the increased use of more sustainably-sourced materials for SSCC labelling to reduce its environmental impact.

The integration of advanced technologies such as artificial intelligence and machine learning is also likely to have a significant bearing on supply chains, and in turn on SSCC labelling. The increased focus on cybersecurity, too, may influence the future shape of the SSCC system.

While the future is never clear, choosing an SSCC labelling partner that keeps their finger on the pulse is vital, and at Cobalt we're keen to ensure our machinery and solutions are as futureproof as possible.

Summary

SSCC labelling has come to play a central role in logistics operations. Its benefits are manifold: it has helped to reduce errors, enhance supply chain visibility and reliability, ensure compliance with industry standards and facilitate the efficient movement of huge quantities of goods across the world.

As international commerce continues to grow, the retail and logistics industries will be faced with the question of how to handle even larger volumes of international shipments. The implementation of SSCC numbers is likely to play a central role, imposing a coherent global standard so that companies can ensure effective identification and communication at each stage of the supply chain.

Businesses that have not already embraced SSCC labelling could therefore risk finding themselves at a disadvantage when compared to their rivals. Cobalt's unrivalled expertise in print and apply labelling solutions means we offer a wealth of SSCC labelling options, with modular solutions designed for your specific needs. Contact us today to find out more.