

# QSS SUPPLIER LABEL

## GLOBAL SPECIFICATION

Final Release 1  
May 12, 2005

To: All Quality Safety Systems Suppliers  
Subject: QSS Supplier Transport Label  
Attn: Supplier Communications Contact  
Date: July 1<sup>st</sup>, 2005

Time Sensitive Information – please ensure this information is forwarded immediately to the appropriate personnel in your organization.

QSS is deploying improvements to the supply chain process. As part of the new process, we are implementing new QSS supplier transport labels that will replace all bar code shipping labels currently in use. The specification is located on the following web sites: the QSS supplier portal or [www.aalstec.com](http://www.aalstec.com) (click on Label Certifications (on the left), then click the link to QSS Label Cert).

Those suppliers who do not conform to the specification, or their labels do not scan, will be subject to a penalty and issued a Problem Resolution Report.

To speed up the process, you may want to have Aalstec create a compliant QSS label format in your software for your printer. This label is guaranteed to be compliant. For the cost of the custom label design, contact Aalstec. For more information send your software name and version along with your bar code printer make and model to [info@aalstec.com](mailto:info@aalstec.com).

Additionally, we encourage all suppliers to use barcode verification equipment. A verifier is not a scanner. Regular use of verification equipment will ensure your label is compliant with the ANSI print quality standards specified in the specifications. Aalstec can provide your company with bar code equipment, labels and ribbons, and bar code printer service and repair. You can contact Aalstec at 519-969-7790 or by email at [info@aalstec.com](mailto:info@aalstec.com).

## **INTRODUCTION**

This standard describes the requirements for QSS supplier templates used on unit loads. This standard does not supersede or replace any applicable safety or regulatory marking or labeling requirements. This standard is to be applied in addition to any other mandated labeling requirements.

The following have been identified as the label types in use at QSS:

- Individual container
- Master load

Note: Mixed loads are also allowed and require proper individual container labeling. However, mixed loads will be labeled with multiple master labels each representing a like part number and its quantities as outlined in the Master Load section of this specification.

Keep like parts together.

It is the responsibility of the supplier to provide bar code marked labels that meet the specifications outlined in this standard. Non-compliance with these requirements will be recorded and a DR (Discrepant Material Concern/Response Report) will be generated by QSS. All associated supplier penalty fees will apply.

Maximum weight (gross) of a load unit (pallet) to be handled with a forklift or pallet jack shall not exceed 1089kg (2400 lbs).

Container to be handled manually must fit within a standard 45" x 48" pallet.

In this document, the word "shall" indicates a requirement and the word "should" indicates a recommendation.

**All exhibits are for illustrative purposes only, and may not be to scale or bar code print quality standards.**

## **LABEL CHARACTERISTICS**

Label size is 10x16.25cm (4x6.5”).  
Labels shall be black on white.

### **FONTS**

All fonts shall be uppercase sans serif (e.g. Arial, Helvetica, or equivalent printer font). All text sizes shall meet the minimum point size outlined and should be as large as possible. Italics shall not be used. The same font size may vary between printers due to several factors, including printer resolution.

All dates are specified in the format of MM/DD/YY (e.g. April 12, 2005 would be 04/12/05).

### **LINEAR BAR CODE**

The linear symbology used in this standard shall be Code 128, and shall have the following characteristics:

- The four characters %, /, \$, +, shall not be used in the bar code data.
- The minimum height of the symbol shall be 10.2 mm (0.4 inch).
- A quiet zone (space) at each end of the symbol of at least 6.25 mm (0.25 inches).
- Non-significant zeros and spaces shall be omitted.
- “X” Dimension. The dimension of the narrowest element (X dimension) range shall be from 0.33 to 0.43 mm (0.013 to 0.017 inch) or 15mils, as determined by the printing device. Symbols with narrow elements at the lower end of this range may require special care to meet the print quality requirements.
- Proper “Data Identifiers” (DI) will prefix the information contained within the bar code but not in the human readable. There are no spaces between the DI and the information. See chart located below each sample label for appropriate data identifiers. Example, if your part number is 1234 then the part number barcode shall read as P1234.

### **TWO DIMENSIONAL BAR CODE**

The symbology used in this standard shall be QR Code. Please see ANNEX A for information on designing the QR Code bar code.

## **PRINT QUALITY**

ISO/IEC 15438 and ISO/IEC 15415 Bar Code print quality test specification for Linear Symbols shall be used to determine the print quality, and meet the following criteria:

- Minimum print quality grade shall be  $\geq 2.5$  (B) at the point of printing the label.
- Measurement Aperture = 0.254 mm (0.010 inch).
- Light Source Wavelength = 660 nanometers (nm)  $\pm 10$  nm.

It is important that the linear bar code symbol be decodable throughout the system of use. The symbol quality and measurement parameters should ensure scan-ability over a broad range of scanning environments. Print quality at the point of production should be higher (Print Quality Grade  $\geq$  B) than the requirements at the point of use.

Unattended scanning may require a higher print quality grade than that identified above. Consequently, those implementing this standard for unattended applications should discuss print quality requirements with the labeler. To reduce errors associated with the mislabeling of containers, on-demand printing should be placed as close as possible to the point of application.

Studies have shown that batch, central printing and pre-printed labels have higher error rates associated with mislabeling (wrong label on the container). Direct thermal and thermal transfer printer devices produce the most consistent results for symbol print quality and text uniformity. The supplier should have an in-house verification process for ongoing quality control of all labels.

## **BEST PRACTICES WHICH SHALL BE FOLLOWED**

Bar codes with a high bar gain/loss dramatically decrease scanner performance and decodability without affecting ANSI print quality.

Width of the narrow bars shall be the same width as the narrow spaces, ideally should be within a tolerance of +/- 10%, but shall be within +/- 25%.

Bar Gain/Loss can be caused by many factors in the printing process such as the ink applied to form the bars spreading on the background material. The ideal situation would be to have 0% variation. In case of high bar gain/loss, adjustments need to be made to the original artwork, plate marking, ink application, ribbon formulation, and print head temperature. Bar code verification equipment should be utilized in order to bring this deviation as close to zero as possible.

### **Note:**

Quality of media (i.e. labels and ribbon) can have a profound effect on image quality and subsequently a scanners ability to decode a bar code symbol. Suppliers should utilize good quality print materials when making their QSS labels.

## CONTAINER LABEL

FROM AALSTEC DATA CORP.  ADC12	TO QSS - BASELINE 417 JUTRAS TECUMSEH, ON N8N 2L9  PLANT DOCK <b>WH2</b>
PART # (P)  <b>A2B4C6-D8E0F2G4H</b> 	
QTY (Q) <b>N23456</b> 	DESCRIPTION LINE 1 LINE 2  DATE (MM/DD/YY) 05/12/05
LOT # (1T) <b>A2B4C6D8E0F2</b> 	SERIAL (S) <b>ADC120512345</b> 

Line #	Title	(DI)	Field	Font Size	Max. Chars.	Example
1	FROM		Supplier's name and QSS supplier code	10-12pt		
1	TO		QSS ship to address	12-14pt		
1	PLANT DOCK	21L	Ship to code WH1 = Patillo, WH2 = Baseline	28pt	3	WH2
2	PART #	P	QSS Part Number. If the part number is greater than 6 characters, a hyphen must be placed in the seventh position (not including DI).	28pt	15	PA2346-789
2			QR Code (see Annex A)			
3	QTY	Q	Container quantity.	28pt	6	Q123456
3	DESCRIPTION		Part description.	14pt	38	
3	DATE (MM/DD/YY)	2D	Manufacturing date (MM/DD/YY)	14pt		
4	LOT #	1T	Supplier lot number. The lot number shall never be repeated for the life of the part.	24pt	12	1TA23456
4	SERIAL	S	Serial number is comprised of the QSS supplier code followed by a five-digit counter. The counter will be padded with leading zeros to maintain five digits.	24pt	15	SABCDE12345

**MASTER LOAD LABEL**

FROM AALSTEC DATA CORP.  ADC12		TO QSS - BASELINE 417 JUTRAS TECUMSEH, ON N8N 2L9  PLANT DOCK WH2		<b>MASTER</b>	
PART # (P) <b>A2B4C6-D8E0F2G4H</b> 					
QTY (Q) <b>N23456</b> 		DESCRIPTION LINE 1 LINE 2 DATE (MM/DD/YY) 05/12/05			
LOT # (1T) <b>A2B4C6D8E0F2</b> 		SERIAL (4S) <b>ADC120512345</b> 			

Line #	Title	(DI)	Field	Font Size	Max. Chars.	Example
1	FROM		Supplier's address	10-12pt		
1	TO		QSS ship to address	12-14pt		
1	PLANT DOCK	21L	Ship to code WH1 = Patillo, WH2 = Baseline	28pt	3	WH2
1	MASTER			36pt		
2	PART #	P	QSS Part Number. If the part number is greater than 6 characters, a hyphen must be placed in the seventh position (not including DI).	28pt	15	PA2346-789
2			QR Code (see Annex A)			
3	QTY	Q	Container quantity.	28pt	6	Q123456
3	DESCRIPTION		Part description.	14pt	38	
3	DATE (MM/DD/YY)	2D	Manufacturing date (MM/DD/YY)	14pt		
4	LOT #	1T	Supplier lot number. The lot number shall never be repeated for the life of the part.	24pt	12	1TA23456
4	SERIAL	4S	Serial number is comprised of the QSS supplier code followed by a five-digit counter. The counter will be padded with leading zeros to maintain five digits.	24pt	15	4SABCDE12345

## ANNEX A

### QR BAR CODE

QR Code shall be:

- Error correction level of at least Q (25%)
- Minimum Version 4 (33x33) or 5 (37x37) (use auto if your software supports it).
- X dimension between 0.33 to 0.43 mm (0.013 to 0.017 inch) or 15mils
- Minimum quiet zone of 1mm (.04") around the perimeter.

The two dimensional bar code will contain information from the part number, quantity, manufacturing date, serial number and the lot trace number contained on the current label. Proper data identifiers and structure shall be followed.

The syntax will be as follows:

]> - compliance indicator (hex equivalents are 5B, 29, and 3E respectively)

06 - data format (06 = data identifiers)

<sup>R</sup><sub>S</sub> - record separator (hex equivalent is 1E)

<sup>G</sup><sub>S</sub> - group separator (hex equivalent is 1D)

<sup>E</sup><sub>O<sub>T</sub></sub> - end of transmission (hex equivalent is 04)

(container label PDF417 code syntax example)

]><sup>R</sup><sub>S</sub>06<sup>G</sup><sub>S</sub>PA2B4C6-D8E0F2G4H<sup>G</sup><sub>S</sub>QN23456<sup>G</sup><sub>S</sub>21LWH1<sup>G</sup><sub>S</sub>2D04/14/05<sup>G</sup><sub>S</sub>SABCDE12345<sup>G</sup><sub>S</sub>1TA2B4C6D8E0F2<sup>R</sup><sub>S</sub><sup>E</sup><sub>O<sub>T</sub></sub>

(master load label PDF417 code syntax example)

]><sup>R</sup><sub>S</sub>06<sup>G</sup><sub>S</sub>PA2B4C6-D8E0F2G4H<sup>G</sup><sub>S</sub>QN23456<sup>G</sup><sub>S</sub>21LWH1<sup>G</sup><sub>S</sub>2D04/14/05<sup>G</sup><sub>S</sub>4SABCDE12345<sup>G</sup><sub>S</sub>1TA2B4C6D8E0F2<sup>R</sup><sub>S</sub><sup>E</sup><sub>O<sub>T</sub></sub>

## FREQUENTLY ASKED QUESTIONS

**Question:** After my label passes certification is it still possible to receive a PRR?

**Answer:** Yes. Even though your label passes certification for form and function, we cannot guarantee future labels to be within specification. A preventative maintenance program should be set up to ensure proper working order of your barcode equipment. As well, a QC check should be periodically performed with verification equipment on your barcodes to ensure correct data and scanability.

**Question:** How many labels should I submit?

**Answer:** Each label type (container, master, mixed) submitted should be accompanied by a duplicate. Labels are to be unmarked, and contain as much real time data as possible.

**Question:** What does X dimension refer to?

**Answer:** X dimension is the width of the narrowest bar in your barcode. The lower the X dimension the smaller the barcode will be, thus the higher the density will be and vice versa. This setting is adjustable within your barcode software and has a direct impact from the printer you are using.

**Question:** What is Bar Tolerance?

**Answer:** This is the average bar print error. It is the value or amount of average bar growth or shrinkage in the measured symbol relative to its X dimension. Bar Gain/Loss can be caused by many factors in the printing process such as the ink applied to form the bars spreading on the background material. The ideal situation would be to have 0% variation. In case of high bar gain/loss, adjustments need to be made to the original artwork, plate-making, ink application and print head temperature.

**Question:** What is ANSI print quality?

**Answer:** ANSI (American National Standards Institute) is a committee that produces acceptable values, which we measure against. In this case a subcommittee of ANSI studies reasonably acceptable barcodes and releases its findings to the public. These values are then used in barcode verification equipment to provide feedback to the end user producing the labels.

**Question:** I am using a barcode font to create my barcodes, why am I failing?

**Answer:** Barcode fonts do not allow for direct manipulation of the X Dimension. These fonts also tend to scale the barcode to adjust for the requested point size. Barcodes that have been scaled will either return incorrect information, or not scan at all. In order to produce a barcode that no reader will have a problem decoding, software designed to produce barcodes should be used.

**Question:** How do I omit the Code 128 check character?

**Answer:** You cannot; the barcode will not scan without a check character. Code 128 is not a self-checking barcode therefore, the check character is mandatory and required to ensure accurate information is being transmitted. A Code 128 barcode with an incorrect check character will give invalid information and will produce an ANSI grade of 'F'. Some barcode fonts will not automatically insert the check character leaving it up to the user to calculate the value of the check character themselves.

**Question:** Will my label fail if the only section I fail is Slashed Zeros Recommended?

**Answer:** No. We recommend that all labels use a slashed zero, but you will not fail if that is the only problem with the label. Slash zeros help the user determine the difference between a zero, the letter o, and other similar characters.

**Question:** When do I make my payment and what forms of payment do you accept?

**Answer:** Please include your payment with your label submission. Aalstec accepts company check, credit card or money order as forms of payment. We will not certify your label until payment is received.

## **OBTAINING NORMATIVE REFERENCES**

Normative references are cited at the appropriate places in the text and the publications are listed hereafter.

AIAG B-10 Trading Partner Label Implementation Standard (B-10 02.00 03/00)

AIAG B-14 Standard for Use of Two-Dimensional Symbols with AIAG Trading Partner Labels (B-14 01.00 12/97)

AIAG B-16 / Global Transport Label Standard (B-16 02.00 11/02)

ISO/IEC 15438 and ISO/IEC 15415 Bar Code print quality test specification.

Document created by Aalstec Data Corporation.

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