Material Tracking & Traceability

The ability to identify what is buried underground has become increasingly important. In Late 2009, (PHMSA) Pipeline Hazards Materials Safety Association established rules for Distribution Pipeline Systems which require written plans to be developed that result in gas utilities knowing what is installed in their system in an effort to understand and mitigate risks. Lyall has taken a lead role in this issue and has been involved from the very early stages working collaboratively with industry stake holders in the development of the standardized Tracking & Traceability encoding system. In fact, we began shipping gas pressure carrying components marked with the 16 character identifier in January, 2012. This Base-62, 16 character Tracking & Traceability Encoding System is published as ASTM F2897.

All gas pressure carrying product for both below grade and above grade installation is marked with the 16 character identification code. Lyall has customized its Enterprise Resource Planning (ERP) system allowing for the 6 characters (see below) that describes each component's constant attributes to be controlled within its Engineering Change Notification (ECN) system assuring the consistent application of its encoding guidelines per ASTM F2897.

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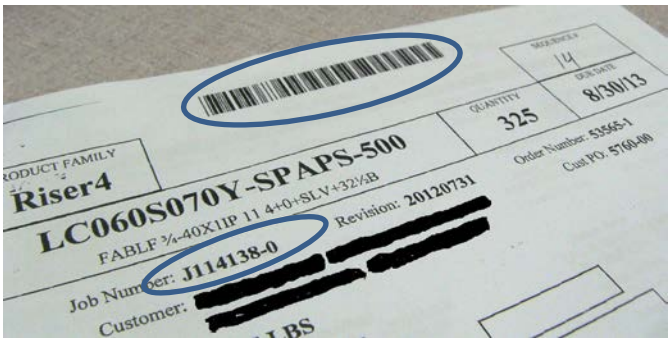
At the time of labeling, the component manufacturing traveler is scanned and the Job attributes are used to

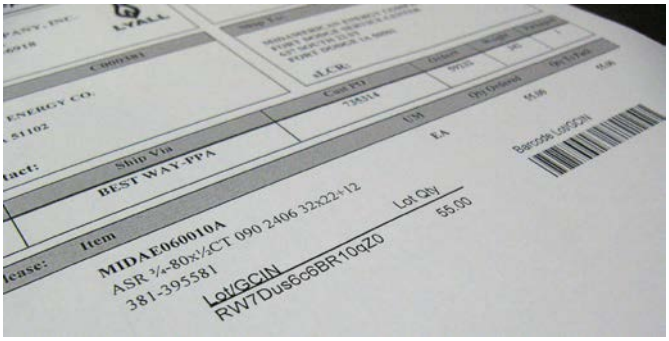


calculate the 4 character Mfg. Lot code and 3 character Mfg. date code. This automated data entry assures accurate generation of the Mfg. Lot code with traceability back to the components and operations that were used to manufacture the part. Embedded within this information are attributes such as the manufacturing site and even the lot number of the PE pipe used to make a riser or transition.

Lyall's automated label creation process pulls the component's constant attribute information from its ERP system for the item being labeled and combines those characters with the two character Manufacturers code, calculates the 4 character Mfg. Lot code, calculates the 3 character Mfg. date code and prints the label with the alphanumeric string and 2D -QR- bar code.

Using a Honeywell Xenon 1D & 2D bar code scanner the printed label is verified for accuracy and readability for every set of labels printed. Lyall has developed its own ASTM F 2897 Encoder and Decoder both stand-alone and embedded within the applications that support its manufacturing operation. Lyall worked with GasOpsIQ early on to validate the application of the encoding and decoding algorithms.

As part of the production completion process the 16 character code is stored in Lyall's ERP system and linked to its inventory records as the Job lot number. At the time of shipment, specific Job lot numbers are assigned to each order line item number which is stored as a record within Lyall's ERP system database. The specific lot number and quantity is also printed on the packing slip for each order line item shipped.



By scanning the 16 character code and quantity from the packing slip, the tracking and traceability identifier can be easily linked by Lyall's customers to their catalog item number at the time of receipt enabling the tracking of assets at any point desired up to and including recording the identifier at the point of installation.