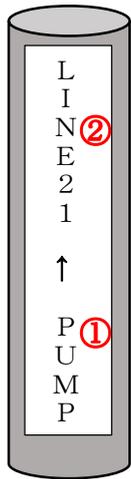


Company D is a large multinational chemical manufacturer located in Tokyo, Japan (Domestic Employees : 900) . They recently invested in our CPM-100 series for a safety-related pipe marking project, and were able to realize huge time and cost savings.

Pipe Marking: The Story of Company D

Before

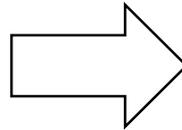


Previous System

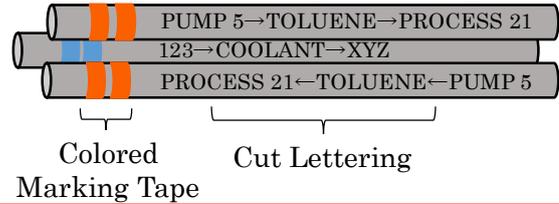
Sticker content :

- ① Start point
- ② End point

- Displayed in 200 locations
- Created using a tape marker designed for indoor office use.



Pipe Marking (Trial System)

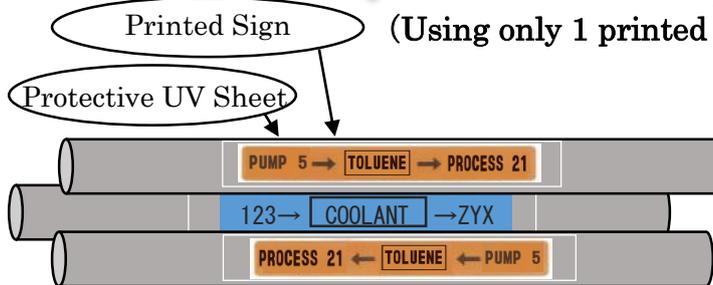


- ③ Displays the direction of flow.
- ④ Displays the content of the pipe.
- ⑤ Color codes chemicals by applying 2 strips of pipe marking tape.
- ⑥ Because they were planning on using cut lettering, they were worried about the time cost of making signs for 2000 locations. Eventually they gave up and started looking for a new system

K
A
I
Z
E
N

Finalized Pipe Marking System

(Using only 1 printed sign and 1 protective UV sheet)



Color Coding Achieved
Using Base Sheet

Previous Content + New Content and New Process Benefits

- ① Start point
- ② End Point
- ③ Direction of flow
- ④ Pipe Contents
- ⑤ Using only one sign, it is possible to color code pipe contents.
- ⑥ In considerably less time, they were able to quickly apply signage for over 2000 locations.
- ⑦ They were able to protect their color coding with UV Laminate.

After

Goal

To improve plant safety, we need a pipe marking system that makes it possible for any employee to close the necessary valve in the event of an emergency.

Background : “To improve plant safety, we need a pipe marking system that makes it possible for any employee to close a valve in an emergency situation. It is extremely important that every employee can understand the system. Our head office is in America, so we have lot of foreign visitors to our Japanese plant. The system has to be understandable to people who don’t speak Japanese. We need to color code the pipes, especial the hazardous materials. We tested a lot of different methods, before finally deciding to rely on Bepop for our safety signage needs.” (Construction and Maintenance Section Chief, Mr. K)

“At our chemical plant we have hundreds of outdoor pipes running between tanks and buildings. They crisscross about 35 feet overhead, and run along roads and walkways. We want to apply signs to each pipe about every 60 feet.” (Mr. K)

Important Points in Choosing a Marking Method

- ① Can color code pipe contents.
- ② Can read the sign for 7-10 years.
- ③ The application process is safe and easy.

Real Example of Marking Sign (Photo 1)



“Color coding pipe content is important to us”

① “In this plant, there are a large amount of dangerous chemicals. We have highly flammable and poisonous chemicals. If all of our signs are only in Japanese than our foreign employees will not be able to understand the dangers of the pipe contents. For example, it is standard practice for other overseas plants to label all highly hazardous contents with orange labels. By conforming our pipe labeling to the color standards of the rest of the company, we are able to create a system that everyone can understand. The base sheets for the Bepop system have a large amount of variation, so we were able to select colors that are close matches to the color guidelines for other plants.” (Mr. K)

② “It is necessary for signs to be legible and color coded for 7-10 years after applying them. Since the pipes are located outside we were worried about UV damage and color fading. However Max has a UV overlay sheet that cuts UV transmittance to 10%, so we adopted this sheet for added durability.” (Mr. K)

Safe and Easy Application Process

③ “When making signs for over 2,000 locations, process is important. If there is even a small amount of unnecessary work in making one sign, then we will have to repeat that unnecessary step 2,000 times. There are two main problems with the cut lettering and aluminum marking tape we planned on using. Applying aluminum tape requires wrapping it around the pipe. We have many pipes that are closely spaced, so we can't fit the roll of marking tape between the pipes. The other problem is that using cut letters takes a long time. It requires removing scraps of vinyl from the cutting sheet, and then applying the letters using a special application sheet. These process were time consuming” (Mr. K)

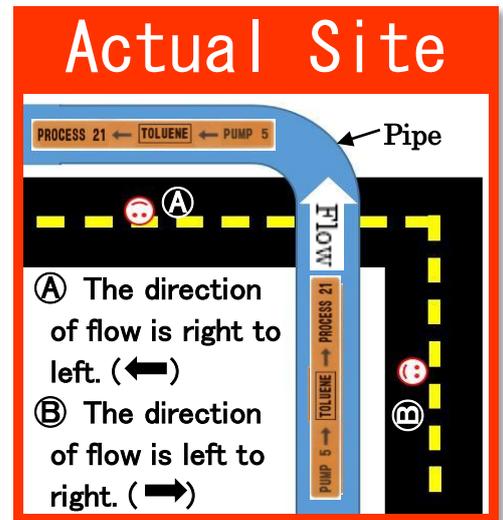
“By using Bepop we are able to display the pipe contents, flow direction, start point, end point, and color code the content all in one sheet (see Photo 1). Unlike cut lettering and aluminum tape, Bepop signs are ready to apply right after printing, and require no pipe wrapping. It is very convenient for us.” (Mr. K)

“Since the pipes are 20 feet above the ground, we have to build scaffolding to carry out the project. It is dangerous for workers to complicated application movements on top of scaffolding. Using Bepop not only saved time, but made our project safer.” (Mr. K)

“Making in house signs in real time is a huge benefit for us”

“We want to use arrows to point out the flow of the pipe contents. The direction of the arrows can change even on the same pipe depending on where if you view the pipe from the right or left (“Actual Site” diagram). In a long pipe we use about 21 signs, 10 of them used pattern **A** and ten of them used pattern **B**.”(Mr. K)

“We only realized this after we started, so the fact that we could change the sign content freely is a huge benefit for us.” (Mr. K)



- When looking at the pipe from point (ⓐ) the flow direction must match arrow (A).
- When looking at the pipe from point (ⓑ) the flow direction must match arrow (B).

Case Study Results

- ① They made it possible for all employees to close a valve in an emergency.
- ② They were able to display and color code all the content they needed using one pipe marker.
- ③ They were able to decrease the time cost of applying over 2,000 signs.
- ④ They increased durability by applying a UV sheet.