

## A-SPE Marking Tapes

## IMO PIPE IDENTIFICATION TAPES - ACC TO ISO 14726

### General description

Pipeline identification on board ships is very important for safety reasons, especially for the safety of the entire crew. The medium flowing through the pipework can cause a lot of damage, and be dangerous to the people on board the ship during an emergency or in case of pipework damage. The appropriate marking makes it possible to identify the type of danger we are dealing with during the emergency and to take the steps to get rid of it.

The International ISO14726-1 (year 1999) standard defines the basic colors which should be used for pipeline identification on board ships.

Another regulation, ISO 1476-2 (year 2002) specifies additional colors which can be used together with the main colors for a more thorough marking of the medium flowing through the pipework.

The table included in this brochure presents the basic colors and also all the available permutations of identification colors in accordance with the ISO14726-2 (year 2002) norms.

### Installation

- Each pipe should be marked at least once in each separate room.
- The best places for installing the identification tapes are: close to the objects like valves, filters or tanks, pipelines passing through walls or ceilings, close to room entrances.
- All surfaces must be thoroughly cleaned before applying the identification tapes.
- During application the tape should overlap 3-4 cm



### Technical data

|                                                  |                                                                                                   |
|--------------------------------------------------|---------------------------------------------------------------------------------------------------|
| Thickness (average)                              | 80 microns (without protective paper and adhesive)                                                |
| Dimensional stability                            | (FINAT TM 14) adhered to steel, no measurable shrinkage in cross directions, in length 0,44 m max |
| Temperature resistance                           | adhered to aluminum -40°C to 80°C, no variation                                                   |
| Water resistance                                 | adhered to aluminum, after 48h / 23°C, no variation                                               |
| Adhesive strength                                | 16 N / 25 mm (FINAT TM 1, after 24h, stainless steel)                                             |
| Tensile strength                                 | (DIN EN ISO 527)<br>along - min. 19 Mpa<br>across - min. 19 Mpa                                   |
| Elongation at break                              | (DIN EN ISO 527)<br>along - min. 130%<br>across - min. 150%                                       |
| Shelf life                                       | 2 years (in original packaging, at 20°C and 50% relative humidity)                                |
| Application temperature                          | min. +10°C                                                                                        |
| Service life according to specialist application | 3 years (depending on individual use conditions)                                                  |

### Availability

The identification tapes are available in two systems:

**Multi-color system** - tapes with the color combination printed on it - this system is the easiest to install.



**Single-colour system** - tapes from which you can make any number of color combinations by yourself, this is a more economical and flexible solution, however, the installation takes longer to complete.



### Color tapes with arrows



The regular flow direction tapes can be supplied on the background of any color. In this case the colour of the tape identifies the type of agent flowing through the pipework, while the arrow identifies the direction of its flow.

### Colour tapes with arrows and texts



Tapes with text include, not only, the description of the type of medium (colour) and the direction of its flow (arrow), but also a detailed description which identifies the agent.

### Hazard sign tapes



Hazard sign tapes are used as an additional way of marking pipeworks through which a hazardous agent flows. Different symbols can be used depending on the hazard level. Hazard sign tapes are used most often in connection with arrow or text tapes, but they can be used as separate marking.

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### Multi-colour permutations (acc to ISO14726-2):

| Description                  | Colour identification | Ordering code |                |
|------------------------------|-----------------------|---------------|----------------|
|                              |                       | Multi-colour  | Single-colour  |
| <b>Waste media</b>           |                       | SC40          | SC40           |
| Black water                  |                       | MC40-41       | SC40+SC41+SC40 |
| Waste oil/Used oil           |                       | MC40-42       | SC40+SC42+SC40 |
| Bilge water                  |                       | MC40-43       | SC40+SC43+SC40 |
| Exhaust gas                  |                       | MC40-44       | SC40+SC44+SC40 |
| Grey water                   |                       | MC40-50       | SC40+SC50+SC40 |
| Sewage - contaminated        |                       | MC40-51       | SC40+SC51+SC40 |
| <b>Fresh water</b>           |                       | SC41          | SC41           |
| Fresh water, sanitary        |                       | MC41-42       | SC41+SC42+SC41 |
| Potable water                |                       | MC41-43       | SC41+SC43+SC41 |
| Distillate                   |                       | MC41-44       | SC41+SC44+SC41 |
| Gas turbine wash water       |                       | MC41-46       | SC41+SC46+SC41 |
| Feed water                   |                       | MC41-47       | SC41+SC47+SC41 |
| Cooling fresh water          |                       | MC41-49       | SC41+SC49+SC41 |
| Chilled water                |                       | MC41-50       | SC41+SC50+SC41 |
| Condensate                   |                       | MC41-51       | SC41+SC51+SC41 |
| <b>Sea water</b>             |                       | SC43          | SC43           |
| Decontamination water        |                       | MC43-41       | SC43+SC41+SC43 |
| Sanitary sea water           |                       | MC44-42       | SC43+SC42+SC43 |
| Ballast water                |                       | MC45-49       | SC43+SC49+SC43 |
| Cooling sea water            |                       | MC46-51       | SC43+SC51+SC43 |
| <b>Fuel</b>                  |                       | SC42          | SC42           |
| HFO Heavy fuel oil           |                       | MC42-40       | SC42+SC40+SC42 |
| Aviation fuel                |                       | MC42-41       | SC42+SC41+SC42 |
| Biological fuel              |                       | MC42-49       | SC42+SC49+SC42 |
| Gas-turbine fuel             |                       | MC42-50       | SC42+SC50+SC42 |
| MDO Marine diesel fuel       |                       | MC42-51       | SC42+SC51+SC42 |
| <b>Non-Flammable gases</b>   |                       | SC44          | SC44           |
| Oxygen                       |                       | MC44-41       | SC44+SC41-SC44 |
| Inert gas                    |                       | MC44-42       | SC44+SC42-SC44 |
| Nitrogen                     |                       | MC44-43       | SC44+SC43+SC44 |
| Refrigerant                  |                       | MC44-45       | SC44+SC45+SC44 |
| Compressed air LP            |                       | MC44-46       | SC44+SC46+SC44 |
| Compressed air HP            |                       | MC44-48       | SC44+SC48+SC44 |
| Control air / Regulating air |                       | MC44-49       | SC44+SC49+SC44 |
| Breathing air*               |                       | MC44-50       | SC44+SC50+SC44 |
| Breathing gas*               |                       | MC44-51       | SC44+SC51+SC44 |

### Availability / Dimensions

|              |               |               |
|--------------|---------------|---------------|
| 30 mm x 25 m | 70 mm x 25 m  | 120 mm x 25 m |
| 40 mm x 25 m | 80 mm x 25 m  | 140 mm x 25 m |
| 50 mm x 25 m | 90 mm x 25 m  | 150 mm x 25 m |
| 60 mm x 25 m | 100 mm x 25 m | 160 mm x 25 m |

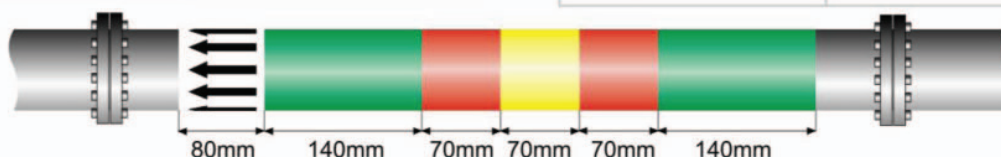
Considering many size standards available on the market we can manufacture any particular size for you.

### Way of ordering:

**Example for Multi-colour system:** MC44-51 (160mm) / 5 pcs

**Example Single-colour system:** SC40 (40mm) / 2 pcs + SC48 (40mm) / 1 pc

### Example configuraton:



| Description                            | Colour identification | Ordering code |                |
|----------------------------------------|-----------------------|---------------|----------------|
|                                        |                       | Multi-colour  | Single-colour  |
| <b>Oil other than fuel</b>             |                       | SC46          | SC46           |
| Thermal fluid                          |                       | MC46-41       | SC46+SC41+SC46 |
| Lubrication oil for gas turbines       |                       | MC46-43       | SC46+SC43+SC46 |
| Hydraulic fluid                        |                       | MC46-44       | SC46+SC44+SC46 |
| Lubrication oil for steam turbines     |                       | MC46-47       | SC46+SC47+SC46 |
| Lubrication oil for gears              |                       | MC46-49       | SC46+SC49+SC46 |
| Lub. oil for int. combustion engines   |                       | MC46-51       | SC46+SC51+SC46 |
| <b>Steam</b>                           |                       | SC47          | SC47           |
| Steam for heating purposes             |                       | MC47-40       | SC47+SC40+SC47 |
| Exhaust steam                          |                       | MC47-50       | SC47+SC40+SC47 |
| Supply steam                           |                       | MC47-51       | SC47+SC40+SC47 |
| <b>Air in ventilation systems</b>      |                       | SC50          | SC50           |
| Discharge air                          |                       | MC50-40       | SC50+SC40+SC50 |
| Mechanical suply air - cold            |                       | MC50-41       | SC50+SC41+SC50 |
| Natural exhaust air                    |                       | MC50-42       | SC50+SC42+SC50 |
| Atmospheric air                        |                       | MC50-43       | SC50+SC43+SC50 |
| Mechanical exhaust air                 |                       | MC50-44       | SC50+SC44+SC50 |
| Decontaminated supply air              |                       | MC50-45       | SC50+SC45+SC50 |
| Mechanical recirculated air            |                       | MC50-46       | SC50+SC46+SC50 |
| Mechanical suply air - warm            |                       | MC50-47       | SC50+SC47+SC50 |
| Smoke clearance                        |                       | MC50-48       | SC50+SC48+SC50 |
| Conditioned supply air                 |                       | MC50-49       | SC50+SC49+SC50 |
| Natural supply air                     |                       | MC50-51       | SC50+SC51+SC50 |
| <b>Fire fighting / Fire protection</b> |                       | SC48          | SC48           |
| Fire-fighting water                    |                       | MC48-43       | SC48+SC43+SC48 |
| Fire-fighting gas                      |                       | MC48-44       | SC48+SC44+SC48 |
| Sprinkler water                        |                       | MC48-46       | SC48+SC46+SC48 |
| Spray water                            |                       | MC48-49       | SC48+SC49+SC48 |
| Fire-fighting powder                   |                       | MC48-50       | SC48+SC50+SC48 |
| Fire-fighting foam                     |                       | MC48-51       | SC48+SC51+SC48 |
| <b>Flammable gases</b>                 |                       | SC51          | SC51           |
| Hydrogen                               |                       | MC51-41       | SC51+SC41+SC51 |
| Acetylene                              |                       | MC51-44       | SC51+SC44+SC51 |
| Liquid gas                             |                       | MC51-49       | SC51+SC49+SC51 |

### Basic identification tapes (acc to ISO14726-1) :

| Type | Description                | Ordering code |
|------|----------------------------|---------------|
|      | Waste media                | SC40          |
|      | Fresh water                | SC41          |
|      | Fuel                       | SC42          |
|      | Sea Water                  | SC43          |
|      | Non-flammable Gases        | SC44          |
|      | Masses                     | SC45          |
|      | Oil other than fuel        | SC46          |
|      | Steam                      | SC47          |
|      | Fire fighting              | SC48          |
|      | Acids & Alkalis            | SC49          |
|      | Air in ventilation systems | SC50          |
|      | Flammable gases            | SC51          |
|      | Flow arrows                | SC30          |